

GOLDMAN SACHS BANK USA AND SUBSIDIARIES

Unaudited Quarterly Report
for the period ended September 30, 2019

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PART I. Financial Statements and Supplementary Data (Unaudited)

GOLDMAN SACHS BANK USA AND SUBSIDIARIES

Consolidated Statements of Earnings (Unaudited)

<i>\$ in millions</i>	Three Months		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Revenues				
Interest income	\$ 2,020	\$ 1,486	\$ 5,732	\$ 4,085
Interest expense	1,323	827	3,579	2,106
Net interest income	697	659	2,153	1,979
Gains and losses from financial instruments, net	483	559	1,424	1,676
Other revenues	27	38	112	129
Total non-interest revenues	510	597	1,536	1,805
Total net revenues	1,207	1,256	3,689	3,784
Provision for credit losses	157	133	487	290
Operating expenses				
Compensation and benefits	122	99	442	401
Service charges	136	110	355	331
Market development	54	55	155	170
Professional fees	77	37	156	103
Communications and technology	43	19	116	53
Brokerage, clearing, exchange and distribution fees	31	23	81	75
Other expenses	171	145	424	364
Total operating expenses	634	488	1,729	1,497
Pre-tax earnings	416	635	1,473	1,997
Provision for taxes	100	151	357	467
Net earnings	\$ 316	\$ 484	\$ 1,116	\$ 1,530

Consolidated Statements of Comprehensive Income (Unaudited)

<i>\$ in millions</i>	Three Months		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Net earnings	\$ 316	\$ 484	\$ 1,116	\$ 1,530
Other comprehensive income/(loss) adjustments, net of tax:				
Debt valuation adjustment	(12)	(9)	(25)	4
Available-for-sale securities	23	(11)	71	(47)
Other comprehensive income/(loss)	11	(20)	46	(43)
Comprehensive income	\$ 327	\$ 464	\$ 1,162	\$ 1,487

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

Consolidated Statements of Financial Condition (Unaudited)

	As of	
	September 2019	December 2018
<i>\$ in millions, except par value</i>		
Assets		
Cash	\$ 28,796	\$ 30,617
Collateralized agreements:		
Securities purchased under agreements to resell (includes \$39,287 and \$36,486 at fair value)	39,287	36,525
Receivables:		
Loans receivable	66,749	65,363
Customer and other receivables	8,873	12,828
Financial instruments owned (at fair value and includes \$8,398 and \$2,814 pledged as collateral)	64,986	44,262
Other assets	3,139	1,892
Total assets	\$ 211,830	\$ 191,487
Liabilities and shareholder's equity		
Deposits (includes \$5,575 and \$4,868 at fair value)	\$ 150,035	\$ 137,752
Collateralized financings:		
Securities sold under agreements to repurchase (at fair value)	10,218	3,815
Other secured financings (includes \$571 and \$528 at fair value)	708	660
Customer and other payables	4,572	4,503
Financial instruments sold, but not yet purchased (at fair value)	7,682	8,701
Unsecured borrowings (includes \$171 and \$175 at fair value)	7,410	6,947
Other liabilities	2,325	1,391
Total liabilities	182,950	163,769
Commitments, contingencies and guarantees		
Shareholder's equity		
Shareholder's equity (includes common stock, \$100 par value; 80,000,000 shares authorized, issued and outstanding)	28,880	27,718
Total liabilities and shareholder's equity	\$ 211,830	\$ 191,487

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 September		Nine Months Ended September	
	2019	2018	2019	2018
Shareholder's equity				
Beginning balance	\$ 28,553	\$ 26,569	\$ 27,718	\$ 25,546
Net earnings	316	484	1,116	1,530
Other comprehensive income/(loss)	11	(20)	46	(43)
Ending balance	\$ 28,880	\$ 27,033	\$ 28,880	\$ 27,033

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

Consolidated Statements of Cash Flows (Unaudited)

<i>\$ in millions</i>	Nine Months Ended September	
	2019	2018
Cash flows from operating activities		
Net earnings	\$ 1,116	\$ 1,530
Adjustments to reconcile net earnings to net cash used for operating activities:		
Depreciation and amortization	54	23
Deferred income taxes	(59)	(21)
Share-based compensation	24	18
Provision for credit losses	487	290
Changes in operating assets and liabilities:		
Loans held for sale	(386)	264
Customer and other receivables and payables, net	4,024	63
Collateralized transactions (excluding other secured financings), net	3,641	(76)
Financial instruments owned (excluding available-for-sale securities)	(17,960)	(299)
Financial instruments sold, but not yet purchased	(1,019)	(2,590)
Other, net	1,583	(827)
Net cash used for operating activities	(8,495)	(1,625)
Cash flows from investing activities		
Net cash used for business acquisitions	-	(78)
Loans receivable, net (excluding loans held for sale)	(1,056)	(9,886)
Purchase of investments	(4,136)	-
Proceeds from sales and paydowns of investments	-	233
Net cash used for investing activities	(5,192)	(9,731)
Cash flows from financing activities		
Deposits, net	11,405	14,851
Unsecured short-term borrowings, net	40	(2,015)
Repayment of other secured financings (short-term)	(25)	(1,465)
Repayment of other secured financings (long-term), including the current portion	-	(500)
Proceeds from issuance of unsecured borrowings	1,000	3,246
Repayment of unsecured long-term borrowings, including the current portion	(550)	-
Derivative contracts with a financing element, net	(4)	1
Net cash provided by financing activities	11,866	14,118
Net increase/(decrease) in cash	(1,821)	2,762
Cash, beginning balance	30,617	51,528
Cash, ending balance	\$ 28,796	\$ 54,290
Supplemental disclosures:		
Cash payments for interest	\$ 3,517	\$ 1,950
Cash payments for income taxes, net	\$ -	\$ -

See Note 11 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 U.S. Bureau of Consumer Financial Protection (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'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 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 is a financial services provider that engages in banking activities. The Bank is GS Group's primary lending entity, serving corporate borrowers, private bank clients and U.S. consumers. The Bank is also GS Group's primary deposit-taking entity. The Bank's depositors include institutions, corporations, its affiliates, clients of third-party broker-dealers, private bank clients and U.S. consumers. The Bank's consumer lending and consumer deposit-taking activities are primarily conducted through the Bank's digital platform, *Marcus: by Goldman Sachs*. In addition, the Bank enters into interest rate, currency, credit and other derivatives, and transacts in certain related 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, 2018. References to the "2018 Annual Report" are to the Bank's Annual Report for the year ended December 31, 2018. 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 September 2019, June 2019 and September 2018 refer to the Bank's periods ended, or the dates, as the context requires, September 30, 2019, June 30, 2019 and September 30, 2018, respectively. All references to December 2018 refer to the date December 31, 2018. Any reference to a future year refers to a year ending on December 31 of that year. Certain reclassifications have been made to previously reported amounts to conform to the current presentation.

Notes to Consolidated Financial Statements (Unaudited)

Note 3.

Significant Accounting Policies

The Bank's significant accounting policies include accounting for loans receivable and lending commitments held for investment net of allowance for credit losses, when and how to measure the fair value of assets and liabilities, accounting for deposits, and when to consolidate an entity. See Note 9 for policies on accounting for loans receivable and lending commitments, Notes 5 through 8 for policies on fair value measurements, Note 14 for policies on accounting for deposits, and below and Note 12 for policies on consolidation accounting. All other significant accounting policies are either described below or included in the following footnotes:

Financial Instruments Owned and Financial Instruments Sold, But Not Yet Purchased	Note 4
Fair Value Measurements	Note 5
Cash Instruments	Note 6
Derivatives and Hedging Activities	Note 7
Fair Value Option	Note 8
Loans Receivable	Note 9
Collateralized Agreements and Financings	Note 10
Securitization Activities	Note 11
Variable Interest Entities	Note 12
Other Assets	Note 13
Deposits	Note 14
Unsecured Borrowings	Note 15
Other Liabilities	Note 16
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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 12 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, 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 Financial Liabilities at Fair Value. Financial instruments owned and financial instruments sold, but not yet purchased 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 other financial assets and financial 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 instruments, net. See Notes 5 through 8 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 instruments, net.

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 instruments, net. 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 financial instruments owned or loans receivable and the transfer is accounted for as a collateralized financing, with the related interest expense recognized over the life of the transaction. See Note 10 for further information about transfers of financial assets accounted for as collateralized financings and Note 11 for further information about transfers of financial assets accounted for as sales.

Cash

Cash included cash and due from banks of \$462 million as of September 2019 and \$382 million as of December 2018. Cash also included interest-bearing deposits of \$28.33 billion as of September 2019 and \$30.23 billion as of December 2018.

The Bank segregates cash for regulatory and other purposes related to client activity. Cash segregated for regulatory and other purposes was \$472 million as of September 2019 and \$493 million as of December 2018.

Customer and Other Receivables

Customer and other receivables included receivables from customers and counterparties of \$6.09 billion as of September 2019 and \$8.06 billion as of December 2018, and receivables from brokers, dealers and clearing organizations of \$2.78 billion as of September 2019 and \$4.77 billion as of December 2018. 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 estimated uncollectible amounts, 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 5 through 8. Had these receivables been included in the Bank's fair value hierarchy, substantially all would have been classified in level 2 as of both September 2019 and December 2018. 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 \$4.06 billion as of September 2019 and \$4.37 billion as of December 2018, and payables to brokers, dealers and clearing organizations of \$508 million as of September 2019 and \$135 million as of December 2018. 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 5 through 8. Had these payables been included in the Bank's fair value hierarchy, substantially all would have been classified in level 2 as of both September 2019 and December 2018. 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 statements of financial condition 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 statements of financial condition when such transactions meet certain settlement criteria and are subject to netting agreements.

In the consolidated statements of financial condition, 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 statements of financial condition, 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 statements of financial condition. See Note 10 for further information about collateral received and pledged, including rights to deliver or repledge collateral. See Notes 7 and 10 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 statements of financial condition 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

Revenue from Contracts with Customers (ASC 606).

In May 2014, the FASB issued ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)." This ASU, as amended, provides comprehensive guidance on the recognition of revenue earned from contracts with customers arising from the transfer of goods and services, guidance on accounting for certain contract costs and new disclosures.

The Bank adopted this ASU in January 2018 under a modified retrospective approach. The ASU had no impact on the Bank's results of operations upon adoption.

As a result of adopting this ASU, the Bank prospectively changed the presentation of certain costs from a net presentation within revenues to a gross basis. Beginning in 2018, this included certain expenses related to loan securitizations which were previously presented in gains and losses from financial instruments, net.

Revenues from contracts with clients subject to this ASU were not material for both the three and nine month periods ended September 2019 and September 2018.

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 statements of financial condition 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 financial condition.

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

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 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.

Under CECL, the allowance for losses for financial assets 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, as well as changes to expected credit losses during the period, would be recognized in earnings. For certain purchased financial assets with deterioration in credit quality since origination, an initial allowance would be recorded for expected credit losses and recognized as an increase to the purchase price rather than as an expense. The ASU also allows for a one-time irrevocable fair value option election on the date of adoption for financial instruments (except held-to-maturity securities) that would otherwise be in the scope of this ASU.

The ASU is effective for the Bank in January 2020 under a modified retrospective approach.

Expected credit losses, including losses on off-balance-sheet exposures, such as lending commitments, will be measured based on historical experience, current conditions and forecasts that affect the collectability of the reported amount.

The Bank has completed development of credit loss models for significant loan portfolios and continues to test these models, validate data inputs, and refine the policies, systems and controls that will be required to implement CECL. Based on the work completed to date, the current loan portfolio and the weighted average of a range of current forecasts of future economic conditions, the Bank estimates that the allowance for credit losses will increase by approximately \$400 million to \$600 million when CECL is adopted. The estimated increase is driven by the fact that the allowance will cover expected credit losses over the full expected life of the loan portfolios and will also take into account forecasts of expected future economic conditions. This increased allowance will not impact the Bank’s realized losses in these loan portfolios. Ultimately, the extent of the impact of adoption of this ASU on the Bank’s consolidated financial statements may vary and will depend on, among other things, the economic environment, the completion of the Bank’s models, policies and other management judgments, and the size and type of loan portfolios held by the Bank on the date of adoption.

Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income (ASC 220). In February 2018, the FASB issued ASU No. 2018-02, “Income Statement — Reporting Comprehensive Income (Topic 220) — Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income.” This ASU permits a reporting entity to reclassify the income tax effects of the Tax Cuts and Jobs Act (Tax Legislation) on items within accumulated other comprehensive income to retained earnings.

The Bank adopted this ASU in January 2019 and did not elect to reclassify the income tax effects of Tax Legislation from accumulated other comprehensive income to retained earnings. Therefore, the adoption of the ASU did not have an impact on the Bank’s consolidated financial statements.

Notes to Consolidated Financial Statements (Unaudited)

Note 4.

Financial Instruments Owned and Financial Instruments Sold, But Not Yet Purchased

Financial instruments owned and financial instruments sold, but not yet purchased are accounted for at fair value either under the fair value option or in accordance with other U.S. GAAP. See Note 6 for information about cash instruments, Note 7 for information about derivatives, and Note 8 for information about other financial assets and financial liabilities at fair value.

The table below presents financial instruments owned and financial instruments sold, but not yet purchased.

<i>\$ in millions</i>	Financial Instruments	
	Owned	Sold, But Not Yet Purchased
As of September 2019		
U.S. government and agency obligations	\$ 40,836	\$ 1,129
Loans and securities backed by:		
Commercial real estate	1,152	–
Residential real estate	10,964	3
Corporate debt instruments	1,371	716
Other debt obligations	249	–
Equity securities	48	–
Investments in funds at NAV	16	–
Total cash instruments	54,636	1,848
Derivatives	10,350	5,834
Total	\$ 64,986	\$ 7,682
As of December 2018		
Government and agency obligations:		
U.S.	\$ 23,961	\$ 1,249
Non-U.S.	–	6
Loans and securities backed by:		
Commercial real estate	943	–
Residential real estate	9,371	–
Corporate debt instruments	1,503	573
Other debt obligations	204	–
Equity securities	290	–
Investments in funds at NAV	34	–
Total cash instruments	36,306	1,828
Derivatives	7,956	6,873
Total	\$ 44,262	\$ 8,701

Gains and Losses from Financial Instruments, Net

The table below presents gains and losses from financial instruments, net.

<i>\$ in millions</i>	Three Months Ended September		Nine Months Ended September	
	2019	2018	2019	2018
Interest rates	\$ (869)	\$ (126)	\$ (689)	\$ (1,995)
Currencies	1,171	465	1,472	2,911
Credit	240	193	855	741
Equities	(60)	26	(214)	19
Commodities	1	1	–	–
Total	\$ 483	\$ 559	\$ 1,424	\$ 1,676

In the table above:

- Gains/(losses) include both realized and unrealized gains and losses, and are primarily related to the Bank's financial instruments owned and financial instruments sold, but not yet purchased, including both derivative and non-derivative financial instruments, and the syndication of loans and lending commitments.
- Gains/(losses) exclude related interest income and interest expense. See Note 20 for further information about interest income and interest expense.
- 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 5.

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 financial 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 financial liabilities may require appropriate 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.

See Notes 6 through 8 for further information about fair value measurements of cash instruments, derivatives and other financial assets and financial liabilities at fair value.

The table below presents financial assets and financial liabilities accounted for at fair value under the fair value option or in accordance with other U.S. GAAP.

	As of		
	September 2019	June 2019	December 2018
<i>\$ in millions</i>			
Total level 1 financial assets	\$ 34,122	\$ 27,618	\$ 16,447
Total level 2 financial assets	99,159	90,639	84,276
Total level 3 financial assets	2,123	1,918	2,317
Investments in funds at NAV	16	17	34
Counterparty and cash collateral netting	(31,147)	(27,291)	(22,326)
Total financial assets at fair value	\$ 104,273	\$ 92,901	\$ 80,748
Total assets	\$ 211,830	\$ 200,099	\$ 191,487
Total level 3 financial assets divided by:			
Total assets	1.0%	1.0%	1.2%
Total financial assets at fair value	2.0%	2.1%	2.9%
Total level 1 financial liabilities	\$ 1,129	\$ 2,117	\$ 1,249
Total level 2 financial liabilities	43,536	36,339	29,195
Total level 3 financial liabilities	5,425	4,902	4,147
Counterparty and cash collateral netting	(25,873)	(21,961)	(16,504)
Total financial liabilities at fair value	\$ 24,217	\$ 21,397	\$ 18,087
Total level 3 financial liabilities divided by			
total financial liabilities at fair value	22.4%	22.9%	22.9%

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.

Notes to Consolidated Financial Statements (Unaudited)

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

<i>\$ in millions</i>	As of		
	September 2019	June 2019	December 2018
Cash instruments	\$ 278	\$ 237	\$ 502
Derivatives	1,845	1,681	1,815
Total	\$ 2,123	\$ 1,918	\$ 2,317

Level 3 financial assets as of September 2019 increased compared with June 2019 primarily reflecting an increase in level 3 derivative assets. The increase in level 3 derivative assets was primarily attributable to unrealized gains on certain credit and equity derivative assets. Level 3 financial assets as of September 2019 decreased compared with December 2018, primarily reflecting a decrease in level 3 cash instruments. See Notes 6 through 8 for further information about level 3 financial assets (including information about unrealized gains and losses related to level 3 financial assets and financial liabilities, and transfers in and out of level 3).

Note 6.

Cash Instruments

Cash instruments include U.S. government and agency obligations, non-U.S. government and agency obligations, mortgage-backed loans and securities, corporate debt instruments, equity securities, investments in funds at NAV, and other non-derivative financial instruments owned and financial instruments sold, but not yet purchased. See below for the types of cash instruments included in each level of the fair value hierarchy and the valuation techniques and significant inputs used to determine their fair values. See Note 5 for an overview of the Bank's fair value measurement policies.

Level 1 Cash Instruments

Level 1 cash 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 Cash Instruments

Level 2 cash instruments include U.S. government agency obligations, non-U.S. government and agency obligations, most mortgage-backed loans and securities, most corporate debt instruments, other debt obligations and certain equity securities.

Valuations of level 2 cash 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 cash instruments (i) if the cash 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 Cash Instruments

Level 3 cash instruments have one or more significant valuation inputs that are not observable. Absent evidence to the contrary, level 3 cash 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 and Significant Inputs of Level 3 Cash Instruments

Valuation techniques of level 3 cash 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 cash 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 commercial real estate 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).

Notes to Consolidated Financial Statements (Unaudited)

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.

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 issuer for which observable prices or broker quotations are available. Significant inputs include:

- 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, tender offers, debt restructurings) are considered to be 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.

Fair Value of Cash Instruments by Level

The table below presents cash instrument assets and liabilities at fair value by level within the fair value hierarchy.

<i>\$ in millions</i>	Level 1	Level 2	Level 3	Total
As of September 2019				
Assets				
U.S. government and agency obligations	\$ 34,121	\$ 6,715	\$ -	\$ 40,836
Loans and securities backed by:				
Commercial real estate	-	1,083	69	1,152
Residential real estate	-	10,888	76	10,964
Corporate debt instruments	-	1,274	97	1,371
Other debt obligations	-	249	-	249
Equity securities	-	12	36	48
Subtotal	\$ 34,121	\$ 20,221	\$ 278	\$ 54,620
Investments in funds at NAV				16
Total cash instrument assets				\$ 54,636
Liabilities				
U.S. government and agency obligations	\$ (1,129)	\$ -	\$ -	\$ (1,129)
Loans and securities backed by:				
residential real estate	-	(3)	-	(3)
Corporate debt instruments	-	(707)	(9)	(716)
Total cash instrument liabilities	\$ (1,129)	\$ (710)	\$ (9)	\$ (1,848)
As of December 2018				
Assets				
U.S. government and agency obligations	\$ 16,447	\$ 7,514	\$ -	\$ 23,961
Loans and securities backed by:				
Commercial real estate	-	873	70	943
Residential real estate	-	9,367	4	9,371
Corporate debt instruments	-	1,348	155	1,503
Other debt obligations	-	204	-	204
Equity securities	-	17	273	290
Subtotal	\$ 16,447	\$ 19,323	\$ 502	\$ 36,272
Investments in funds at NAV				34
Total cash instrument assets				\$ 36,306
Liabilities				
Government and agency obligations:				
U.S.	\$ (1,249)	\$ -	\$ -	\$ (1,249)
Non-U.S.	-	(6)	-	(6)
Corporate debt instruments	-	(565)	(8)	(573)
Total cash instrument liabilities	\$ (1,249)	\$ (571)	\$ (8)	\$ (1,828)

In the table above:

- Cash instrument assets are included in financial instruments owned and cash instrument liabilities are included in financial instruments sold, but not yet purchased.
- Cash instrument assets are shown as positive amounts and cash instrument liabilities are shown as negative amounts.
- Corporate debt instruments includes corporate loans and debt securities.

Notes to Consolidated Financial Statements (Unaudited)

Significant Unobservable Inputs

The table below presents the amount of level 3 assets, and ranges and weighted averages of significant unobservable inputs used to value substantially all level 3 cash instruments.

<i>\$ in millions</i>	Level 3 Assets and Range of Significant Unobservable Inputs (Weighted Average) as of	
	September	December
	2019	2018
Loans and securities backed by commercial real estate		
Level 3 assets	\$69	\$70
Yield	8.7% to 11.6% (9.5%)	9.1% to 10.6% (9.7%)
Duration (years)	0.3 to 0.6 (0.5)	N/A
Loans and securities backed by residential real estate		
Level 3 assets	\$76	\$4
Yield	N.M.	N/A
Duration (years)	N.M.	N/A
Corporate debt instruments		
Level 3 assets	\$97	\$155
Yield	3.5% to 6.4% (4.0%)	4.7% to 15.3% (7.8%)
Recovery rate	N/A	33.1% to 75.0% (65.4%)
Duration (years)	N/A	1.9 to 4.9 (3.2)
Equity securities		
Level 3 assets	\$36	\$273
Discount rate/yield	N.M.	8.0% to 15.0% (13.9%)
Capitalization rate	6.0% to 6.5% (6.2%)	4.8% to 6.5% (4.9%)

In the table above:

- Ranges represent the significant unobservable inputs that were used in the valuation of each type of cash instrument.
- Weighted averages are calculated by weighting each input by the relative fair value of the cash instruments.
- 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 cash instrument. For example, the highest yield for corporate debt instruments is appropriate for valuing a specific corporate debt instrument but may not be appropriate for valuing any other corporate debt instrument. Accordingly, the ranges of inputs do not represent uncertainty in, or possible ranges of, fair value measurements of level 3 cash instruments.
- Increases in yield, discount rate, capitalization rate, or duration used in the valuation of level 3 cash instruments would have resulted in a lower fair value measurement as of both September 2019 and December 2018, while increases in recovery rate would have resulted in a higher fair value measurement as of December 2018. Due to the distinctive nature of each level 3 cash instrument, the interrelationship of inputs is not necessarily uniform within each product type.
- Loans and securities backed by commercial real estate and corporate debt instruments are valued using discounted cash flows, and 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.
- Recovery rate and duration were not significant to the valuation of level 3 corporate debt instruments as of September 2019. Duration was not significant to the valuation of level 3 loans and securities backed by commercial real estate as of December 2018. Yield and duration were not significant to the valuation of level 3 loans and securities backed by residential real estate as of December 2018.
- Significant unobservable inputs which are only relevant to a single instrument, or where there is no range, are not meaningful and therefore have been excluded.

Level 3 Rollforward

The table below presents a summary of the changes in fair value for level 3 cash instrument assets and liabilities.

<i>\$ in millions</i>	Three Months		Nine Months	
	Ended September	2018	Ended September	2018
Total cash instrument assets				
Beginning balance	\$ 237	\$ 499	\$ 502	\$ 557
Net realized gains/(losses)	7	3	14	5
Net unrealized gains/(losses)	(7)	28	(3)	50
Purchases	4	23	85	58
Sales	(2)	(12)	(56)	(24)
Settlements	(17)	(18)	(227)	(49)
Transfers into level 3	78	27	2	16
Transfers out of level 3	(22)	(17)	(39)	(80)
Ending balance	\$ 278	\$ 533	\$ 278	\$ 533
Total cash instrument liabilities				
Beginning balance	\$ (4)	\$ (6)	\$ (8)	\$ (9)
Net realized gains/(losses)	-	-	-	-
Net unrealized gains/(losses)	-	-	(1)	1
Purchases	2	6	8	2
Sales	(5)	(11)	(7)	(9)
Settlements	-	-	-	-
Transfers into level 3	(2)	-	(2)	-
Transfers out of level 3	-	-	1	4
Ending balance	\$ (9)	\$ (11)	\$ (9)	\$ (11)

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- Changes in fair value are presented for all cash instrument 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.
- Purchases includes originations and secondary purchases.
- Transfers between levels of the fair value hierarchy are reported at the beginning of the reporting period in which they occur. If a cash instrument asset or 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 cash instrument assets, increases are shown as positive amounts, while decreases are shown as negative amounts. For level 3 cash instrument liabilities, increases are shown as negative amounts, while decreases are shown as positive amounts.
- Level 3 cash instruments are frequently economically hedged with level 1 and level 2 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 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.

\$ in millions	Three Months		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Loans and securities backed by commercial real estate				
Beginning balance	\$ 72	\$ 85	\$ 70	\$ 119
Net realized gains/(losses)	5	2	10	2
Net unrealized gains/(losses)	(3)	6	1	22
Purchases	1	1	–	2
Sales	–	(6)	–	–
Settlements	(6)	(6)	(12)	(7)
Transfers out of level 3	–	–	–	(56)
Ending balance	\$ 69	\$ 82	\$ 69	\$ 82
Corporate debt instruments				
Beginning balance	\$ 105	\$ 106	\$ 155	\$ 138
Net realized gains/(losses)	1	1	3	2
Net unrealized gains/(losses)	(1)	–	4	(7)
Purchases	–	14	6	32
Sales	(2)	(6)	(25)	(23)
Settlements	(7)	(11)	(11)	(18)
Transfers into level 3	3	27	1	16
Transfers out of level 3	(2)	(10)	(36)	(19)
Ending balance	\$ 97	\$ 121	\$ 97	\$ 121
Equity securities				
Beginning balance	\$ 39	\$ 298	\$ 273	\$ 267
Net unrealized gains/(losses)	(3)	21	(8)	34
Purchases	–	5	–	21
Sales	–	–	(30)	(1)
Settlements	–	(1)	(199)	–
Transfers out of level 3	–	(7)	–	(5)
Ending balance	\$ 36	\$ 316	\$ 36	\$ 316
Other cash instruments				
Beginning balance	\$ 21	\$ 10	\$ 4	\$ 33
Net realized gains/(losses)	1	–	1	1
Net unrealized gains/(losses)	–	1	–	1
Purchases	3	3	79	3
Sales	–	–	(1)	–
Settlements	(4)	–	(5)	(24)
Transfers into level 3	75	–	1	–
Transfers out of level 3	(20)	–	(3)	–
Ending balance	\$ 76	\$ 14	\$ 76	\$ 14

In the table above, other cash instruments includes loans and securities backed by residential real estate and state and municipal obligations.

Notes to Consolidated Financial Statements (Unaudited)

Level 3 Rollforward Commentary

Three Months Ended September 2019. There were no net realized and unrealized gains/(losses) on level 3 cash instrument assets (reflecting \$7 million of net realized gains and \$7 million of net unrealized losses) for the three months ended September 2019.

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

Transfers into level 3 during the three months ended September 2019 primarily reflected transfers of certain loans backed by residential real estate, principally due to reduced price transparency as a result of a lack of market evidence, including fewer market transactions in these instruments.

The drivers of the transfers out of level 3 cash instrument assets during the three months ended September 2019 were not material.

Nine Months Ended September 2019. The net realized and unrealized gains on level 3 cash instrument assets of \$11 million (reflecting \$14 million of net realized gains and \$3 million of net unrealized losses) for the nine months ended September 2019 were reported in gains and losses from financial instruments, net.

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

The drivers of the transfers into level 3 cash instrument assets during the nine months ended September 2019 were not material.

Transfers out of level 3 during the nine months ended September 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.

Three Months Ended September 2018. The net realized and unrealized gains on level 3 cash instrument assets of \$31 million (reflecting \$3 million of net realized gains and \$28 million of net unrealized gains) for the three months ended September 2018 were reported in gains and losses from financial instruments, net.

The drivers of the net unrealized gains on level 3 cash instrument assets for the three months ended September 2018 were not material.

Both transfers into and transfers out of level 3 during the three months ended September 2018 were not material.

Nine Months Ended September 2018. The net realized and unrealized gains on level 3 cash instrument assets of \$55 million (reflecting \$5 million of net realized gains and \$50 million of net unrealized gains) for the nine months ended September 2018 were reported in gains and losses from financial instruments, net.

The net unrealized gains on level 3 cash instrument assets for the nine months ended September 2018 primarily reflected gains on equity securities, principally driven by strong corporate performance.

Transfers into level 3 during the nine months ended September 2018 were not material.

Transfers out of level 3 during the nine months ended September 2018 primarily reflected transfers of certain loans and securities backed by commercial real estate to level 2, principally due to certain unobservable yield and duration inputs no longer being significant to the valuation of these instruments.

Available-for-Sale Securities

The table below presents information about cash instruments that are accounted for as available-for-sale by tenor.

<i>\$ in millions</i>	Amortized Cost	Fair Value	Weighted Average Yield
As of September 2019			
Less than 5 years	\$ 3,004	\$ 3,022	1.80%
Greater than 5 years	2,645	2,668	1.76%
Total	\$ 5,649	\$ 5,690	1.78%
As of December 2018			
Less than 5 years	\$ 2,492	\$ 2,440	1.85%
Total	\$ 2,492	\$ 2,440	1.85%

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 September 2019 and December 2018.
- The gross unrealized gains included in accumulated other comprehensive income/(loss) were \$43 million and the gross unrealized losses included in accumulated other comprehensive income/(loss) were not material as of September 2019. The gross unrealized losses included in accumulated other comprehensive income/(loss) were \$52 million as of December 2018 and were related to securities in a continuous unrealized loss position for greater than a year.

Notes to Consolidated Financial Statements (Unaudited)

- Available-for-sale securities in an unrealized loss position are periodically reviewed for other-than-temporary impairment. The Bank considers various factors, including market conditions, changes in issuer credit ratings, severity and duration of the unrealized losses, and the intent and ability to hold the security until recovery to determine if the securities are other-than-temporarily impaired. There were no such impairments during both the nine months ended September 2019 and September 2018.

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 inventory 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 lending activities in derivative and cash instruments. 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 financial instruments owned and derivative liabilities are included in financial instruments sold, but not yet purchased. Realized and unrealized gains and losses on derivatives not designated as hedges are included in gains and losses from financial instruments, net in Note 4.

Notes to Consolidated Financial Statements (Unaudited)

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 statements of financial condition, 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.

\$ in millions	As of September 2019		As of December 2018	
	Derivative Assets	Derivative Liabilities	Derivative Assets	Derivative Liabilities
Not accounted for as hedges				
Exchange-traded	\$ 682	\$ 1,195	\$ 691	\$ 1,278
OTC-cleared	5	38	159	31
Bilateral OTC	649,346	641,989	394,933	388,905
Total interest rates	650,033	643,222	395,783	390,214
OTC-cleared	9	20	–	–
Bilateral OTC	84,762	82,010	63,701	62,733
Total currencies	84,771	82,030	63,701	62,733
Credit – bilateral OTC	3,840	4,340	3,163	3,182
Equities – bilateral OTC	1,211	497	1,367	987
Commodities – bilateral OTC	122	120	180	178
Subtotal	739,977	730,209	464,194	457,294
Accounted for as hedges				
Bilateral OTC	22	–	6	1
Total interest rates	22	–	6	1
Total gross fair value	\$ 739,999	\$ 730,209	\$ 464,200	\$ 457,295
Offset in consolidated statements of financial condition				
Counterparty netting	\$ (699,656)	\$(699,656)	\$(434,901)	\$(434,901)
Cash collateral netting	(29,993)	(24,719)	(21,343)	(15,521)
Total amounts offset	\$ (729,649)	\$(724,375)	\$(456,244)	\$(450,422)
Included in consolidated statements of financial condition				
Exchange-traded	\$ 682	\$ 1,195	\$ 691	\$ 1,278
OTC-cleared	14	58	159	31
Bilateral OTC	9,654	4,581	7,106	5,564
Total	\$ 10,350	\$ 5,834	\$ 7,956	\$ 6,873
Not offset in consolidated statements of financial condition				
Cash collateral	\$ (335)	\$ (218)	\$ (148)	\$ (366)
Securities collateral	(2,153)	(461)	(1,231)	(489)
Total	\$ 7,862	\$ 5,155	\$ 6,577	\$ 6,018

\$ in millions	Notional Amounts as of	
	September 2019	December 2018
Not accounted for as hedges		
Exchange-traded	\$ 5,606,871	\$ 4,080,689
OTC-cleared	9,576,686	7,194,235
Bilateral OTC	27,082,998	24,485,244
Total interest rates	42,266,555	35,760,168
Exchange-traded	102	–
OTC-cleared	84,630	–
Bilateral OTC	6,954,830	4,451,076
Total currencies	7,039,562	4,451,076
Credit – bilateral OTC	174,459	183,632
Equities – bilateral OTC	42,927	32,494
Commodities – bilateral OTC	5,418	5,000
Subtotal	49,528,921	40,432,370
Accounted for as hedges		
OTC-cleared	19,286	11,956
Bilateral OTC	731	731
Total interest rates	20,017	12,687
Total notional amounts	\$ 49,548,938	\$ 40,445,057

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 \$1.13 billion as of September 2019 and \$2.31 billion as of December 2018, and derivative liabilities of \$1.00 billion as of September 2019 and \$1.44 billion as of December 2018, 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.

Notes to Consolidated Financial Statements (Unaudited)

Valuation Techniques 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 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. See Note 5 for an overview of the Bank's fair value measurement policies.

Level 1 Derivatives

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 Derivatives

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.

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 Derivatives

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.

Notes to Consolidated Financial Statements (Unaudited)

- 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 below 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 appropriate 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.

Fair Value of Derivatives by Level

The table below presents the fair value of 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 September 2019				
Assets				
Interest rates	\$ 1	\$ 649,640	\$ 414	\$ 650,055
Currencies	–	84,347	424	84,771
Credit	–	2,810	1,030	3,840
Equities	–	684	527	1,211
Commodities	–	119	3	122
Gross fair value	1	737,600	2,398	739,999
Counterparty netting in levels	–	(697,949)	(553)	(698,502)
Subtotal	\$ 1	\$ 39,651	\$ 1,845	\$ 41,497
Cross-level counterparty netting				(1,154)
Cash collateral netting				(29,993)
Net fair value				\$ 10,350
Liabilities				
Interest rates	\$ –	\$ (642,655)	\$ (567)	\$ (643,222)
Currencies	–	(81,774)	(256)	(82,030)
Credit	–	(3,252)	(1,088)	(4,340)
Equities	–	(466)	(31)	(497)
Commodities	–	(119)	(1)	(120)
Gross fair value	–	(728,266)	(1,943)	(730,209)
Counterparty netting in levels	–	697,949	553	698,502
Subtotal	\$ –	\$ (30,317)	\$ (1,390)	\$ (31,707)
Cross-level counterparty netting				1,154
Cash collateral netting				24,719
Net fair value				\$ (5,834)
As of December 2018				
Assets				
Interest rates	\$ –	\$ 395,462	\$ 327	\$ 395,789
Currencies	–	62,949	752	63,701
Credit	–	2,123	1,040	3,163
Equities	–	1,058	309	1,367
Commodities	–	177	3	180
Gross fair value	–	461,769	2,431	464,200
Counterparty netting in levels	–	(433,302)	(616)	(433,918)
Subtotal	\$ –	\$ 28,467	\$ 1,815	\$ 30,282
Cross-level counterparty netting				(983)
Cash collateral netting				(21,343)
Net fair value				\$ 7,956
Liabilities				
Interest rates	\$ –	\$ (389,667)	\$ (548)	\$ (390,215)
Currencies	–	(62,602)	(131)	(62,733)
Credit	–	(2,305)	(877)	(3,182)
Equities	–	(957)	(30)	(987)
Commodities	–	(177)	(1)	(178)
Gross fair value	–	(455,708)	(1,587)	(457,295)
Counterparty netting in levels	–	433,302	616	433,918
Subtotal	\$ –	\$ (22,406)	\$ (971)	\$ (23,377)
Cross-level counterparty netting				983
Cash collateral netting				15,521
Net fair value				\$ (6,873)

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- The 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.

Significant Unobservable Inputs

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

\$ in millions	Level 3 Assets (Liabilities) and Range of Significant Unobservable Inputs (Average/Median) as of	
	September 2019	December 2018
Interest rates, net	\$(153)	\$(221)
Correlation	57% to 81% (65%/60%)	(10)% to 86% (67%/62%)
Volatility (bps)	31 to 150 (80/55)	31 to 150 (80/55)
Currencies, net	\$168	\$621
Correlation	28% to 70% (46%/46%)	28% to 70% (46%/46%)
Credit, net	\$(58)	\$163
Credit spreads (bps)	1 to 559 (139/112)	1 to 810 (164/111)
Equities, net	\$496	\$279
Correlation	22% to 96% (56%/55%)	9% to 96% (45%/40%)

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.

Range of Significant Unobservable Inputs

The following is 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.

Notes to Consolidated Financial Statements (Unaudited)

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		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Total level 3 derivatives				
Beginning balance	\$ 531	\$ 773	\$ 844	\$ 484
Net realized gains/(losses)	(17)	5	(75)	(95)
Net unrealized gains/(losses)	17	(217)	(388)	(75)
Purchases	42	31	75	82
Sales	(40)	(9)	(51)	(26)
Settlements	(64)	(6)	58	224
Transfers into level 3	9	(14)	13	(26)
Transfers out of level 3	(23)	(13)	(21)	(18)
Ending balance	\$ 455	\$ 550	\$ 455	\$ 550

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 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.

\$ in millions	Three Months		Nine Months	
	Ended September	2018	Ended September	2018
	2019		2019	2018
Interest rates, net				
Beginning balance	\$ (150)	\$ (306)	\$ (221)	\$ (480)
Net realized gains/(losses)	(25)	(31)	(43)	(73)
Net unrealized gains/(losses)	67	(88)	16	(41)
Purchases	–	–	1	9
Sales	–	(2)	(13)	(3)
Settlements	(45)	26	77	200
Transfers into level 3	–	(14)	6	(26)
Transfers out of level 3	–	10	24	9
Ending balance	\$ (153)	\$ (405)	\$ (153)	\$ (405)
Currencies, net				
Beginning balance	\$ 248	\$ 351	\$ 621	\$ 167
Net realized gains/(losses)	(2)	(1)	(7)	(34)
Net unrealized gains/(losses)	(84)	(4)	(434)	161
Purchases	4	1	9	6
Settlements	3	5	(19)	53
Transfers out of level 3	(1)	(2)	(2)	(3)
Ending balance	\$ 168	\$ 350	\$ 168	\$ 350
Credit, net				
Beginning balance	\$ 10	\$ 197	\$ 163	\$ 236
Net realized gains/(losses)	(1)	(10)	(8)	(23)
Net unrealized gains/(losses)	(48)	(75)	(239)	(107)
Purchases	(1)	11	–	12
Sales	(11)	(2)	(9)	(16)
Settlements	5	9	25	28
Transfers into level 3	(7)	–	1	–
Transfers out of level 3	(5)	–	9	–
Ending balance	\$ (58)	\$ 130	\$ (58)	\$ 130
Equities, net				
Beginning balance	\$ 421	\$ 529	\$ 279	\$ 559
Net realized gains/(losses)	11	47	(17)	35
Net unrealized gains/(losses)	82	(50)	269	(88)
Purchases	39	19	65	55
Sales	(29)	(5)	(29)	(7)
Settlements	(27)	(46)	(25)	(57)
Transfers into level 3	16	–	6	–
Transfers out of level 3	(17)	(20)	(52)	(23)
Ending balance	\$ 496	\$ 474	\$ 496	\$ 474
Commodities, net				
Beginning balance	\$ 2	\$ 2	\$ 2	\$ 2
Transfers out of level 3	–	(1)	–	(1)
Ending balance	\$ 2	\$ 1	\$ 2	\$ 1

Level 3 Rollforward Commentary

Three Months Ended September 2019. There were no realized and unrealized gains on level 3 derivatives (reflecting \$17 million of net realized losses and \$17 million of net unrealized gains) for the three months ended September 2019.

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

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

Nine Months Ended September 2019. The net realized and unrealized losses on level 3 derivatives of \$463 million (reflecting \$75 million of net realized losses and \$388 million of net unrealized losses) for the nine months ended September 2019 were reported in gains and losses from financial instruments, net.

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

The drivers of both transfers into level 3 derivatives and transfers out of level 3 derivatives during the nine months ended September 2019 were not material.

Three Months Ended September 2018. The net realized and unrealized losses on level 3 derivatives of \$212 million (reflecting \$5 million of net realized gains and \$217 million of net unrealized losses) for the three months ended September 2018 were reported in gains and losses from financial instruments, net.

The net unrealized losses on level 3 derivatives for the three months ended September 2018 were primarily attributable to losses on certain interest rate derivatives, primarily reflecting the impact of an increase in interest rates, and losses on certain credit derivatives, primarily reflecting the impact of tighter credit spreads.

Both transfers into level 3 derivatives and transfers out of level 3 derivatives during the three months ended September 2018 were not material.

Notes to Consolidated Financial Statements (Unaudited)

Nine Months Ended September 2018. The net realized and unrealized losses on level 3 derivatives of \$170 million (reflecting \$95 million of net realized losses and \$75 million of net unrealized losses) for the nine months ended September 2018 were reported in gains and losses from financial instruments, net.

The net unrealized losses on level 3 derivatives for the nine months ended September 2018 were primarily attributable to losses on certain credit derivatives, primarily reflecting the impact of tighter credit spreads, and losses on certain equity derivatives, primarily reflecting the impact of changes in equity prices, partially offset by gains on certain currency derivatives, primarily reflecting the impact of changes in interest rates and foreign exchange rates.

Both transfers into level 3 derivatives and transfers out of level 3 derivatives during the nine months ended September 2018 were not material.

Credit Derivatives

The Bank enters into a broad array of credit derivatives in locations around the world to facilitate client transactions and to manage the credit risk associated with market-making and lending 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.

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 September 2019, written credit derivatives had a total gross notional amount of \$76.97 billion and purchased credit derivatives had a total gross notional amount of \$97.49 billion, for total net notional purchased protection of \$20.51 billion. As of December 2018, written credit derivatives had a total gross notional amount of \$80.20 billion and purchased credit derivatives had a total gross notional amount of \$103.44 billion, for total net notional purchased protection of \$23.24 billion. The Bank's written and purchased credit derivatives primarily consist of credit default swaps.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents information about credit derivatives.

\$ in millions	Credit Spread on Underlier (basis points)				Total
	0 - 250	251 - 500	501 - 1,000	Greater than 1,000	
As of September 2019					
Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor					
Less than 1 year	\$ 11,764	\$ 124	\$ 38	\$ 341	\$ 12,267
1 – 5 years	48,560	2,737	1,593	2,727	55,617
Greater than 5 years	8,367	353	138	232	9,090
Total	\$ 68,691	\$ 3,214	\$ 1,769	\$ 3,300	\$ 76,974
Maximum Payout/Notional Amount of Purchased Credit Derivatives					
Offsetting	\$ 61,272	\$ 2,890	\$ 1,594	\$ 2,885	\$ 68,641
Other	\$ 26,706	\$ 1,028	\$ 468	\$ 642	\$ 28,844
Fair Value of Written Credit Derivatives					
Asset	\$ 1,993	\$ 168	\$ 92	\$ 128	\$ 2,381
Liability	779	38	30	353	1,200
Net asset/(liability)	\$ 1,214	\$ 130	\$ 62	\$ (225)	\$ 1,181
As of December 2018					
Maximum Payout/Notional Amount of Written Credit Derivatives by Tenor					
Less than 1 year	\$ 19,279	\$ 552	\$ 225	\$ 222	\$ 20,278
1 – 5 years	39,835	4,538	2,899	1,520	48,792
Greater than 5 years	7,237	3,567	268	53	11,125
Total	\$ 66,351	\$ 8,657	\$ 3,392	\$ 1,795	\$ 80,195
Maximum Payout/Notional Amount of Purchased Credit Derivatives					
Offsetting	\$ 54,376	\$ 3,908	\$ 2,609	\$ 163	\$ 61,056
Other	\$ 34,925	\$ 3,656	\$ 2,018	\$ 1,782	\$ 42,381
Fair Value of Written Credit Derivatives					
Asset	\$ 996	\$ 263	\$ 58	\$ 57	\$ 1,374
Liability	748	440	78	53	1,319
Net asset/(liability)	\$ 248	\$ (177)	\$ (20)	\$ 4	\$ 55

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 Spreads on Derivatives

The Bank realizes gains or losses relating to changes in credit risk through the unwind of derivative contracts and changes in credit mitigants. The net gains/(losses), including hedges, attributable to the impact of changes in credit exposure and credit spreads (counterparty and GS Group's) on derivatives was \$19 million for the three months ended September 2019, \$(29) million for the three months ended September 2018, \$(82) million for the nine months ended September 2019 and \$99 million for the nine months ended September 2018.

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.

\$ in millions	As of	
	September 2019	December 2018
Net derivative liabilities under bilateral agreements	\$ 8,072	\$ 5,511
Collateral posted	\$ 7,274	\$ 4,499
Additional collateral or termination payments:		
One-notch downgrade	\$ 148	\$ 112
Two-notch downgrade	\$ 312	\$ 411

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 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.

Notes to Consolidated Financial Statements (Unaudited)

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 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.

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 20 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		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Interest rate hedges	\$ 112	\$ (37)	\$ 420	\$ (252)
Hedged deposits and borrowings	\$ (114)	\$ 32	\$ (423)	\$ 234
Interest expense	\$ 1,323	\$ 827	\$ 3,579	\$ 2,106

The table below presents the carrying value of the hedged items that are currently 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 Value	Cumulative Hedging Adjustment
As of September 2019		
Deposits	\$ 18,685	\$ 264
Unsecured short-term borrowings	\$ 1,006	\$ 6
As of December 2018		
Deposits	\$ 11,248	\$ (165)
Unsecured long-term borrowings	\$ 1,000	\$ –

In the table above, the cumulative hedging adjustments from prior hedging relationships that were de-designated were not material as of September 2019 and there were no hedging adjustments from prior hedging relationships that were de-designated as of December 2018.

In addition, as of both September 2019 and December 2018, cumulative hedging adjustments for items no longer designated in a hedging relationship were not material.

Note 8.

Fair Value Option

Other Financial Assets and Financial Liabilities at Fair Value

In addition to cash and derivative instruments included in financial instruments owned and financial instruments sold, but not yet purchased, the Bank accounts for certain of its other financial assets and financial 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 instruments owned 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).

Notes to Consolidated Financial Statements (Unaudited)

Hybrid financial instruments are instruments that contain bifurcated 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 financial liabilities accounted for at fair value under the fair value option include:

- Repurchase agreements and substantially all resale agreements;
- Most other secured financings, including advances from the Federal Home Loan Bank of New York (FHLB);
- Certain unsecured borrowings; 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.

Fair Value of Other Financial Assets and Financial Liabilities by Level

The table below presents, by level within the fair value hierarchy, other financial assets and financial 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 September 2019				
Assets				
Resale agreements	\$ -	\$ 39,287	\$ -	\$ 39,287
Total	\$ -	\$ 39,287	\$ -	\$ 39,287
Liabilities				
Deposits	\$ -	\$ (1,549)	\$ (4,026)	\$ (5,575)
Repurchase agreements	-	(10,218)	-	(10,218)
Other secured financings	-	(571)	-	(571)
Unsecured borrowings	-	(171)	-	(171)
Total	\$ -	\$ (12,509)	\$ (4,026)	\$ (16,535)

As of December 2018				
Assets				
Resale agreements	\$ -	\$ 36,486	\$ -	\$ 36,486
Total	\$ -	\$ 36,486	\$ -	\$ 36,486
Liabilities				
Deposits	\$ -	\$ (1,700)	\$ (3,168)	\$ (4,868)
Repurchase agreements	-	(3,815)	-	(3,815)
Other secured financings	-	(528)	-	(528)
Unsecured borrowings	-	(175)	-	(175)
Total	\$ -	\$ (6,218)	\$ (3,168)	\$ (9,386)

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

Valuation Techniques and Significant Inputs

Other financial assets and financial liabilities at fair value 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.

See below for information about the significant inputs (including the significant unobservable inputs) used to value other financial assets and financial liabilities at fair value.

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. As of both September 2019 and December 2018, the Bank had no level 3 resale or repurchase agreements. See Note 10 for further information about collateralized agreements and financings.

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. See Note 7 for further information about derivatives and Note 14 for further information about 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 inputs are incorporated in the Bank's derivative disclosures related to unobservable inputs in Note 7.

Other Secured Financings. The significant inputs to the valuation of other secured financings at fair value 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. As of both September 2019 and December 2018, the Bank had no level 3 other secured financings.

Notes to Consolidated Financial Statements (Unaudited)

Unsecured Borrowings. The significant inputs to the valuation of unsecured borrowings at fair value 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. As of both September 2019 and December 2018, the Bank had no level 3 unsecured borrowings. See Note 7 for further information about derivatives and Note 15 for further information about unsecured borrowings.

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		Nine Months	
	Ended September 2019	2018	Ended September 2019	2018
Deposits				
Beginning balance	\$ (3,748)	\$ (3,271)	\$ (3,168)	\$ (2,968)
Net realized gains/(losses)	(17)	(18)	(20)	(24)
Net unrealized gains/(losses)	(127)	6	(413)	94
Issuances	(261)	(185)	(651)	(630)
Settlements	209	242	236	293
Transfers into level 3	(141)	–	(81)	(16)
Transfers out of level 3	59	32	71	57
Ending balance	\$ (4,026)	\$ (3,194)	\$ (4,026)	\$ (3,194)

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 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 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 cash instruments and derivatives. 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 cash instruments or derivatives. 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 September 2019. The net realized and unrealized losses on level 3 other financial liabilities of \$144 million (reflecting \$17 million of net realized losses and \$127 million of net unrealized losses) for the three months ended September 2019 included losses of \$132 million reported in gains and losses from financial instruments, net in the consolidated statements of earnings, and \$12 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 September 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 September 2019 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 September 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.

Nine Months Ended September 2019. The net realized and unrealized losses on level 3 other financial liabilities of \$433 million (reflecting \$20 million of net realized losses and \$413 million of net unrealized losses) for the nine months ended September 2019 included losses of \$408 million reported in gains and losses from financial instruments, net in the consolidated statements of earnings, and \$25 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 nine months ended September 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 nine months ended September 2019 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.

Notes to Consolidated Financial Statements (Unaudited)

Transfers out of level 3 other financial liabilities during the nine months ended September 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.

Three Months Ended September 2018. The net realized and unrealized losses on level 3 other financial liabilities of \$12 million (reflecting \$18 million of net realized losses and \$6 million of net unrealized gains) for the three months ended September 2018 included losses of \$3 million reported in gains and losses from financial instruments, net in the consolidated statements of earnings, and \$9 million reported in debt valuation adjustment in the consolidated statements of comprehensive income.

The drivers of the net unrealized gains on level 3 other financial liabilities for the three months ended September 2018 were not material.

There were no transfers into level 3 other financial liabilities during the three months ended September 2018.

Transfers out of level 3 other financial liabilities during the three months ended September 2018 were not material.

Nine Months Ended September 2018. The net realized and unrealized gains on level 3 other financial liabilities of \$70 million (reflecting \$24 million of net realized losses and \$94 million of net unrealized gains) for the nine months ended September 2018 included gains of \$65 million reported in gains and losses from financial instruments, net in the consolidated statements of earnings, and \$5 million reported in debt valuation adjustment in the consolidated statements of comprehensive income.

The net unrealized gains on level 3 other financial liabilities for the nine months ended September 2018 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 nine months ended September 2018 were not material.

Transfers out of level 3 other financial liabilities during the nine months ended September 2018 primarily reflected transfers of certain hybrid financial instruments included in deposits to level 2, principally due to increased transparency of correlation and volatility inputs used to value these instruments.

Gains and Losses on Financial Assets and Financial 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 financial liabilities.

<i>\$ in millions</i>	Three Months Ended September		Nine Months Ended September	
	2019	2018	2019	2018
Deposits	\$ (153)	\$ (22)	\$ (509)	\$ 59
Other	3	2	5	15
Total	\$ (150)	\$ (20)	\$ (504)	\$ 74

In the table above:

- Gains/(losses) are included in gains and losses from financial instruments, net.
- Gains/(losses) exclude contractual interest, which is included in interest income and interest expense, for all instruments other than hybrid financial instruments. See Note 20 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 and nine months ended September 2019 and September 2018. 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.

Excluding the gains and losses on the instruments accounted for at fair value under the fair value option described above, gains and losses from financial instruments, net primarily represents gains and losses on financial instruments owned, financial instruments sold, but not yet purchased, and the syndication of loans and lending commitments.

Loans at Fair Value Under the Fair Value Option

The Bank originates loans to provide financing to clients. These loans are typically longer-term in nature. The Bank's lending activities include lending to investment-grade and non-investment-grade corporations and to private bank clients, which are primarily secured by securities, commercial and residential real estate, or other assets. The Bank's lending activities also include extending loans to borrowers that are secured by commercial and residential real estate.

Notes to Consolidated Financial Statements (Unaudited)

The Bank accounts for certain loans at fair value under the fair value option which are included in financial instruments owned. See Note 6 for a discussion of the techniques and significant inputs used in the valuation of loans. See Note 9 for information about loans receivable not accounted for at fair value.

The table below presents information about loans at fair value under the fair value option.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Corporate loans	\$ 1,196	\$ 1,304
PWM loans	7,621	7,225
Commercial real estate loans	1,102	894
Residential real estate loans	3,477	2,312
Other loans	250	204
Total	\$ 13,646	\$ 11,939

In the table above:

- Private wealth management (PWM) loans includes loans extended by the private bank. PWM loans included \$7.49 billion of loans secured by residential real estate, \$84 million of loans secured by investments in both financial and nonfinancial assets and \$50 million of loans secured by commercial real estate as of September 2019 and \$7.06 billion of loans secured by residential real estate, \$117 million of loans secured by investments in both financial and nonfinancial assets and \$49 million of loans secured by commercial real estate as of December 2018.
- The aggregate contractual principal amount of loans for which the fair value option was elected exceeded the related fair value by \$101 million as of September 2019 and \$428 million as of December 2018.
- Included in these amounts are loans in nonaccrual status (including loans more than 90 days past due) with a contractual principal balance of \$140 million and a fair value of \$102 million as of September 2019, and a contractual principal balance of \$61 million and a fair value of \$31 million as of December 2018.
- See Note 9 for further information about the captions in the table above.

Lending Commitments at Fair Value Under the Fair Value Option

The table below presents information about the contractual amount of lending commitments that are at fair value under the fair value option.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Corporate	\$ 6,117	\$ 5,927
Other	1,010	329
Total	\$ 7,127	\$ 6,256

In the table above:

- Corporate lending commitments primarily relates to bank and bridge lending activities.
- Other lending commitments primarily relates to lending commitments extended by the private bank.
- The fair value of lending commitments were liabilities of \$4 million as of September 2019 and \$3 million as of December 2018.

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 \$409 million as of September 2019 and not material as of December 2018.

Impact of Credit Spreads on Loans and Lending Commitments

The estimated net gain/(loss) attributable to changes in instrument-specific credit spreads on loans and lending commitments for which the fair value option was elected was \$(8) million for the three months ended September 2019, not material for the three months ended September 2018, \$(28) million for the nine months ended September 2019 and \$14 million for the nine months ended September 2018. 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.

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.

Notes to Consolidated Financial Statements (Unaudited)

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.

\$ in millions	Three Months Ended September		Nine Months Ended September	
	2019	2018	2019	2018
DVA (pre-tax)	\$ (15)	\$ (12)	\$ (32)	\$ 5
DVA (net of tax)	\$ (12)	\$ (9)	\$ (25)	\$ 4

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 and nine months ended September 2019 and September 2018.

Note 9.

Loans Receivable

Loans receivable consists of loans held for investment that are accounted for at amortized cost net of allowance for loan losses and loans held for sale that are accounted for at the lower of cost or fair value. Interest on loans receivable is recognized over the life of the loan and is recorded on an accrual basis.

The table below presents information about loans receivable.

\$ in millions	As of	
	September 2019	December 2018
Corporate loans	\$ 28,946	\$ 28,858
PWM loans	15,452	15,398
Commercial real estate loans	10,924	9,830
Residential real estate loans	3,174	3,821
Consumer loans	5,525	4,536
Other loans	3,474	3,537
Total loans receivable, gross	67,495	65,980
Allowance for loan losses	(746)	(617)
Total loans receivable	\$ 66,749	\$ 65,363

In the table above, as of September 2019, PWM loans included \$13.41 billion of loans, substantially all of which are secured by investments in both financial and nonfinancial assets, \$1.99 billion of loans secured by commercial real estate and \$56 million of loans secured by residential real estate. As of December 2018, PWM loans included \$13.18 billion of loans, substantially all of which are secured by investments in both financial and nonfinancial assets, \$2.16 billion of loans secured by commercial real estate and \$54 million of loans secured by residential real estate.

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

- **Corporate Loans.** 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. Loans receivable related to the Bank's relationship lending activities are reported within corporate loans.
- **PWM Loans.** PWM loans includes loans extended by the private bank, including loans originated through *Goldman Sachs Private Bank Select*. These 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 PWM loans are secured by securities, commercial and residential real estate, or other assets.
- **Commercial Real Estate Loans.** Commercial real estate loans includes loans extended by the Bank, other than those extended by the private bank, 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 purchased by the Bank and loans originated as part of the Bank's CRA activities.
- **Residential Real Estate Loans.** Residential real estate loans includes loans extended by the Bank, other than those extended by the private bank, to 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.
- **Consumer Loans.** Consumer loans are unsecured and represent consumer and credit card loans originated by the Bank.
- **Other Loans.** 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.

Notes to Consolidated Financial Statements (Unaudited)

Loans Held for Investment

Included in loans receivable are loans held for investment which are accounted for at amortized cost net of allowance for loan losses. The carrying value of such loans, net of allowance for loan losses was \$63.10 billion as of September 2019 and \$61.73 billion as of December 2018. The fair value of loans held for investment was \$63.34 billion as of September 2019 and \$61.66 billion as of December 2018. Had these loans been carried at fair value and included in the fair value hierarchy, \$31.99 billion as of September 2019 and \$29.71 billion as of December 2018 would have been classified in level 2, and \$31.35 billion as of September 2019 and \$31.95 billion as of December 2018 would have been classified in level 3.

Loans Held for Sale

Included in loans receivable are loans held for sale which are accounted for at the lower of cost or fair value. The carrying value of such loans was \$3.65 billion as of September 2019 and \$3.63 billion as of December 2018. As of both September 2019 and December 2018, the carrying value of loans held for sale generally approximated fair value. Had these loans been included in the fair value hierarchy, they would have been primarily classified in level 2 as of both September 2019 and December 2018.

Lending Commitments Held for Investment

The table below presents information about lending commitments that are held for investment and accounted for on an accrual basis.

\$ in millions	As of	
	September 2019	December 2018
Corporate	\$ 102,578	\$ 98,109
Credit card	9,596	–
Other	6,881	5,668
Total	\$ 119,055	\$ 103,777

In the table above:

- Corporate lending commitments primarily relates to the Bank's relationship lending activities.
- Credit card lending commitments represents credit card lines issued by the Bank to consumers. These credit card lines are cancelable by the Bank.
- Other lending commitments primarily relates to lending commitments extended to clients who warehouse assets backed by real estate and other assets and commitments extended by the private bank.
- The carrying value of lending commitments was a liability of \$383 million (including allowance for losses of \$266 million) as of September 2019 and \$321 million (including allowance for losses of \$202 million) as of December 2018.

- The estimated fair value of such lending commitments was a liability of \$2.60 billion as of September 2019 and \$3.13 billion as of December 2018. Had these lending commitments been carried at fair value and included in the fair value hierarchy, \$1.06 billion as of September 2019 and \$956 million as of December 2018 would have been classified in level 2, and \$1.54 billion as of September 2019 and \$2.17 billion as of December 2018 would have been classified in level 3.

Lending Commitments Held for Sale

The table below presents information about lending commitments that are held for sale and accounted for at the lower of cost or fair value.

\$ in millions	As of	
	September 2019	December 2018
Corporate	\$ 6,423	\$ 5,084
Other	316	1,313
Total	\$ 6,739	\$ 6,397

In the table above:

- Corporate lending commitments primarily relates to bank and bridge lending activities.
- Other lending commitments primarily relates to lending commitments extended to clients for the purchase of commercial real estate.
- The carrying value of lending commitments held for sale was a liability of \$55 million as of September 2019 and \$106 million as of December 2018. Had these lending commitments been included in the fair value hierarchy, they would have been primarily classified in level 3 as of both September 2019 and December 2018.

Credit Quality

Risk Assessment. The Bank's risk assessment process includes evaluating the credit quality of its loans receivable. For loans receivable (excluding consumer loans) and lending commitments (excluding credit card commitments), the Bank performs credit reviews which include initial and ongoing analyses of its borrowers. A credit review is an independent analysis of the capacity and willingness of a borrower to meet its financial obligations, resulting in an internal credit rating. The determination of internal credit ratings also incorporates assumptions with respect to the nature of and outlook for the borrower's industry and the economic environment. The Bank also assigns a regulatory risk rating to such loans based on the definitions provided by the U.S. federal bank regulatory agencies.

Notes to Consolidated Financial Statements (Unaudited)

The Bank enters into economic hedges to mitigate credit risk on certain loans receivable and corporate lending commitments (both of which are held for investment) related to the Bank's relationship lending activities. Such hedges are accounted for at fair value. See Note 17 for further information about these lending commitments and associated hedges.

The table below presents gross loans receivable (excluding consumer loans of \$5.53 billion as of September 2019 and \$4.54 billion as of December 2018) and lending commitments (excluding credit card commitments of \$9.60 billion as of September 2019) by an internally determined public rating agency equivalent and by regulatory risk rating.

<i>\$ in millions</i>	Lending		Total
	Loans	Commitments	
Credit Rating Equivalent			
As of September 2019			
Investment-grade	\$ 25,316	\$ 77,356	\$ 102,672
Non-investment-grade	36,654	38,842	75,496
Total	\$ 61,970	\$ 116,198	\$ 178,168
As of December 2018			
Investment-grade	\$ 26,723	\$ 75,648	\$ 102,371
Non-investment-grade	34,721	34,526	69,247
Total	\$ 61,444	\$ 110,174	\$ 171,618
Regulatory Risk Rating			
As of September 2019			
Non-criticized/pass	\$ 59,955	\$ 114,044	\$ 173,999
Criticized	2,015	2,154	4,169
Total	\$ 61,970	\$ 116,198	\$ 178,168
As of December 2018			
Non-criticized/pass	\$ 59,847	\$ 108,058	\$ 167,905
Criticized	1,597	2,116	3,713
Total	\$ 61,444	\$ 110,174	\$ 171,618

In the table above:

- Loans and lending commitments includes loans and lending commitments held for investment and held for sale.
- Non-criticized/pass loans and lending commitments represent loans and lending commitments that are performing and/or do not demonstrate adverse characteristics that are likely to result in a credit loss.

For consumer loans, an important credit-quality indicator is the Fair Isaac Corporation (FICO) credit score, which measures a borrower's creditworthiness by considering factors such as payment and credit history. FICO credit scores are refreshed periodically by the Bank to assess the updated creditworthiness of the borrower.

The table below presents gross consumer loans receivable and the concentration by refreshed FICO credit score.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Consumer loans, gross	\$ 5,525	\$ 4,536
Refreshed FICO credit score		
Greater than or equal to 660	87%	88%
Less than 660	13%	12%
Total	100%	100%

Impaired Loans. Loans receivable are determined to be impaired when it is probable that the Bank will not collect all principal and interest due under the contractual terms. At that time, loans are generally placed on nonaccrual status and 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.

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. Loans modified in a troubled debt restructuring are considered impaired and are subject to specific loan-level reserves.

The gross carrying value of impaired loans receivable on nonaccrual status was \$376 million as of September 2019 and \$336 million as of December 2018. Such loans included \$86 million as of September 2019 of corporate loans that were modified in a troubled debt restructuring. As of December 2018, the value of loans modified in a troubled debt restructuring was not material. The Bank did not have any lending commitments related to these loans as of both September 2019 and December 2018. The amount of loans 30 days or more past due was \$201 million as of September 2019 and \$160 million as of December 2018.

Notes to Consolidated Financial Statements (Unaudited)

Allowance for Credit Losses

The Bank's allowance for credit losses consists of the allowance for losses on loans and lending commitments.

The Bank's allowance for loan losses consists of specific loan-level reserves and portfolio level reserves, as described below:

- Specific loan-level reserves are determined on loans that exhibit credit quality weakness and are therefore individually evaluated for impairment.
- Portfolio level reserves are determined on loans not evaluated for specific loan-level reserves by aggregating groups of loans with similar risk characteristics and estimating the probable loss inherent in the portfolio.

The allowance for loan losses is determined using 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 consumer loans include FICO credit scores and delinquency status.

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. Loans are charged off against the allowance for loan losses when deemed to be uncollectible.

The Bank also records an allowance for losses on lending commitments that are held for investment and accounted for on an accrual basis. 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.

The table below presents gross loans held for investment and lending commitments held for investment by impairment methodology.

<i>\$ in millions</i>	Specific	Portfolio	Total
As of September 2019			
Loans Held for Investment			
Corporate loans	\$ 223	\$ 27,543	\$ 27,766
PWM loans	35	15,417	15,452
Commercial real estate loans	71	9,011	9,082
Residential real estate loans	47	2,999	3,046
Consumer loans	–	5,525	5,525
Other loans	–	2,972	2,972
Total	\$ 376	\$ 63,467	\$ 63,843
Lending Commitments Held for Investment			
Corporate	\$ 59	\$ 102,519	\$ 102,578
Credit card	–	9,596	9,596
Other	7	6,874	6,881
Total	\$ 66	\$ 118,989	\$ 119,055
As of December 2018			
Loans Held for Investment			
Corporate loans	\$ 91	\$ 26,655	\$ 26,746
PWM loans	46	15,352	15,398
Commercial real estate loans	9	8,803	8,812
Residential real estate loans	190	3,588	3,778
Consumer loans	–	4,536	4,536
Other loans	–	3,079	3,079
Total	\$ 336	\$ 62,013	\$ 62,349
Lending Commitments Held for Investment			
Corporate	\$ 4	\$ 98,105	\$ 98,109
Other	1	5,667	5,668
Total	\$ 5	\$ 103,772	\$ 103,777

In the table above:

- Gross loans held for investment and lending commitments held for investment, subject to specific loan-level reserves, included \$220 million as of September 2019 and \$218 million as of December 2018 of impaired loans and lending commitments, which did not require a reserve as the loan was deemed to be recoverable.
- Gross loans held for investment deemed impaired and subject to specific loan-level reserves as a percentage of total gross loans held for investment was 0.6% as of September 2019 and 0.5% as of December 2018.

Notes to Consolidated Financial Statements (Unaudited)

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

<i>\$ in millions</i>	Nine Months Ended		Year Ended	
	September 2019		December 2018	
	Loans Receivable	Lending Commitments	Loans Receivable	Lending Commitments
Changes in the allowance for credit losses				
Beginning balance	\$ 617	\$ 202	\$ 354	\$ 193
Net charge-offs	(239)	–	(156)	–
Provision	423	64	455	15
Other	(55)	–	(36)	(6)
Ending balance	\$ 746	\$ 266	\$ 617	\$ 202
Allowance for losses by impairment methodology				
Specific	\$ 52	\$ 13	\$ 38	\$ 1
Portfolio	694	253	579	201
Total	\$ 746	\$ 266	\$ 617	\$ 202

In the table above:

- Substantially all net charge-offs were related to consumer loans for both the nine months ended September 2019 and the year ended December 2018.
- The provision for credit losses was primarily related to consumer loans for both the nine months ended September 2019 and the year ended December 2018.
- Other represents the reduction to the allowance related to loans and lending commitments transferred to held for sale.
- Portfolio level reserves were primarily related to corporate loans and lending commitments and consumer loans. Specific loan-level reserves were primarily related to corporate loans.
- Substantially all of the allowance for losses on lending commitments was related to corporate lending commitments.
- Allowance for loan losses as a percentage of total gross loans held for investment was 1.2% as of September 2019 and 1.0% as of December 2018.
- Net charge-offs as a percentage of average total gross loans held for investment were 0.5% on an annualized basis for the nine months ended September 2019 and 0.3% for the year ended December 2018.

Note 10.

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 20 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	
	September 2019	December 2018
Resale agreements	\$ 39,287	\$ 36,525
Repurchase agreements	\$ 10,218	\$ 3,815

In the table above:

- Substantially all resale agreements were carried at fair value under the fair value option.
- All repurchase agreements are carried at fair value under the fair value option.

See Note 8 for further information about the valuation techniques and significant inputs used to determine fair value.

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.

Notes to Consolidated Financial Statements (Unaudited)

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 statements of financial condition.

Offsetting Arrangements

The table below presents resale and repurchase agreements included in the consolidated statements of financial condition, as well as the amounts not offset in the consolidated statements of financial condition.

<i>\$ in millions</i>	As of	
	Assets Resale agreements	Liabilities Repurchase agreements
As of September 2019		
Included in consolidated statements of financial condition		
Gross carrying value	\$ 43,406	\$ 14,337
Counterparty netting	(4,119)	(4,119)
Total	39,287	10,218
Amounts not offset		
Counterparty netting	(7)	(7)
Collateral	(38,742)	(10,139)
Total	\$ 538	\$ 72

As of December 2018		
Included in consolidated statements of financial condition		
Gross carrying value	\$ 39,963	\$ 7,253
Counterparty netting	(3,438)	(3,438)
Total	36,525	3,815
Amounts not offset		
Counterparty netting	(72)	(72)
Collateral	(36,071)	(3,742)
Total	\$ 382	\$ 1

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.

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	
	September 2019	December 2018
U.S. government and agency obligations	\$ 14,319	\$ 7,229
Corporate debt securities	11	24
Non-U.S. government and agency obligations	7	—
Total	\$ 14,337	\$ 7,253

As of both September 2019 and December 2018, 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; and
- Transfers of assets accounted for as financings rather than sales (e.g., collateralized by bank loans and mortgage whole loans).

Other secured financings includes nonrecourse arrangements. Nonrecourse other secured financings were \$205 million as of September 2019 and \$132 million as of December 2018.

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 8 for further information about other secured financings that are accounted for at fair value.

Notes to Consolidated Financial Statements (Unaudited)

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 5 through 8. Had these financings been included in the Bank's fair value hierarchy, they would have been primarily classified in level 3 as of both September 2019 and December 2018.

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 \$503 million as of September 2019 and \$528 million as of December 2018. As of September 2019, the interest rate on outstanding borrowings was 2.18%. As of December 2018, interest rates ranged from 2.68% to 2.82% with a weighted average rate of 2.69%. These borrowings are carried at fair value under the fair value option in the Bank's fair value hierarchy. See Note 8 for further information about borrowings accounted for at fair value. Outstanding FHLB advances included short-term borrowings of \$503 million as of September 2019 and \$28 million as of December 2018 and long-term borrowings of \$500 million as of December 2018.

Other. Other secured financings, excluding FHLB advances, were \$205 million as of September 2019 and \$132 million as of December 2018. As of September 2019, the amounts outstanding included \$137 million with a contractual maturity of less than one year and \$68 million with a contractual maturity of greater than one year. As of December 2018, all of the amounts outstanding had a contractual maturity of greater than one year.

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 financial instruments owned and loans receivable 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	
	September 2019	December 2018
Collateral available to be delivered or repledged	\$ 45,014	\$ 42,206
Collateral that was delivered or repledged	\$ 27,555	\$ 29,335

The table below presents information about assets pledged.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Financial instruments owned pledged to counterparties that:		
Had the right to deliver or repledge	\$ 8,398	\$ 2,814
Did not have the right to deliver or repledge	\$ 8,470	\$ 6,789
Other assets pledged to counterparties that		
did not have the right to deliver or repledge	\$ 137	\$ 132

Note 11.

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.

Beneficial interests issued by securitization entities are debt or equity instruments that give the investors rights to receive all or portions of specified cash inflows to a securitization vehicle and include senior and subordinated interests in principal, interest and/or other cash inflows. The proceeds from the sale of beneficial interests are used to pay the transferor for the financial assets sold to the securitization vehicle or to purchase securities which serve as collateral.

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.

For transfers of financial assets that are not accounted for as sales, the assets remain in financial instruments owned and the transfer is accounted for as a collateralized financing, with the related interest expense recognized over the life of the transaction. See Note 10 for further information about collateralized financings and Note 20 for further information about interest expense.

Notes to Consolidated Financial Statements (Unaudited)

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, substantially all would have been classified in level 3 as of September 2019 and they would have been primarily classified in level 2 as of December 2018.

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.

\$ in millions	Three Months		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Residential mortgages	\$ 1,957	\$ 517	\$ 4,379	\$ 5,142
Commercial mortgages	4,999	2,261	7,924	5,771
Other financial assets	218	267	564	882
Total financial assets securitized	\$ 7,174	\$ 3,045	\$12,867	\$11,795
Retained interests cash flows	\$ 16	\$ 10	\$ 55	\$ 16

In the table above, financial assets securitized included assets of \$185 million during the three months ended September 2019, \$138 million during the three months ended September 2018, \$391 million during the nine months ended September 2019, and \$523 million during the nine months ended September 2018 which were securitized in a non-cash exchange for loans receivable.

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.

\$ in millions	Outstanding	
	Principal Amount	Retained Interests
As of September 2019		
Residential mortgage-backed	\$ 10,903	\$ 496
Commercial mortgage-backed	21,339	548
Other asset-backed	1,690	97
Total	\$ 33,932	\$ 1,141
As of December 2018		
Residential mortgage-backed	\$ 7,541	\$ 353
Commercial mortgage-backed	14,973	442
Other asset-backed	1,968	99
Total	\$ 24,482	\$ 894

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 \$1.14 billion as of September 2019 and \$892 million as of December 2018.

In addition to the interests in the table above, the Bank had other continuing involvement in the form of commitments with certain nonconsolidated VIEs. As of both September 2019 and December 2018, the carrying value and notional amount of these commitments were not material. The notional amounts of these commitments are included in maximum exposure to loss in the nonconsolidated VIE table in Note 12.

Notes to Consolidated Financial Statements (Unaudited)

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	
	September 2019	December 2018
Fair value of retained interests	\$ 1,046	\$ 793
Weighted average life (years)	5.8	5.6
Constant prepayment rate	8.0%	8.0%
Impact of 10% adverse change	\$ (1)	\$ (2)
Impact of 20% adverse change	\$ (3)	\$ (4)
Discount rate	6.4%	6.4%
Impact of 10% adverse change	\$ (24)	\$ (20)
Impact of 20% adverse change	\$ (48)	\$ (38)

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 \$97 million and a weighted average life of 3.5 years as of September 2019, and a fair value of \$99 million and a weighted average life of 4.1 years as of December 2018. 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 September 2019 and December 2018. The Bank's maximum exposure to adverse changes in the value of these interests is the carrying value of \$98 million as of September 2019 and \$99 million as of December 2018.

Note 12.

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 11, and investments in and loans to other types of VIEs, as described below. See Note 11 for further information about securitization activities, including the definition of beneficial interests. 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.

Notes to Consolidated Financial Statements (Unaudited)

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.

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	
	September 2019	December 2018
Total nonconsolidated VIEs		
Assets in VIEs	\$ 44,325	\$ 32,478
Carrying value of variable interests – assets	\$ 3,071	\$ 2,096
Carrying value of variable interests – liabilities	\$ 642	\$ 445
Maximum exposure to loss:		
Retained interests	\$ 1,141	\$ 894
Commitments and guarantees	1,975	963
Derivatives	5,250	5,245
Loans and investments	1,805	1,018
Total maximum exposure to loss	\$ 10,171	\$ 8,120

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 loans and investments 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.

Notes to Consolidated Financial Statements (Unaudited)

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

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Mortgage-backed		
Assets in VIEs	\$ 32,308	\$ 22,673
Carrying value of variable interests – assets	\$ 1,047	\$ 809
Maximum exposure to loss:		
Retained interests	\$ 1,044	\$ 795
Commitments and guarantees	47	35
Derivatives	66	77
Total maximum exposure to loss	\$ 1,157	\$ 907
Corporate debt and other asset-backed		
Assets in VIEs	\$ 9,493	\$ 8,649
Carrying value of variable interests – assets	\$ 1,483	\$ 1,023
Carrying value of variable interests – liabilities	\$ 642	\$ 445
Maximum exposure to loss:		
Retained interests	\$ 97	\$ 99
Commitments and guarantees	1,660	838
Derivatives	5,184	5,168
Loans and investments	1,265	754
Total maximum exposure to loss	\$ 8,206	\$ 6,859
Real estate, credit-related and other investing		
Assets in VIEs	\$ 2,524	\$ 1,156
Carrying value of variable interests – assets	\$ 541	\$ 264
Maximum exposure to loss:		
Commitments and guarantees	\$ 268	\$ 90
Loans and investments	540	264
Total maximum exposure to loss	\$ 808	\$ 354

As of both September 2019 and December 2018, the carrying values of the Bank's variable interests in nonconsolidated VIEs are included in the consolidated statements of financial condition as follows:

- Mortgage-backed: Substantially all assets were included in loans receivable.
- Corporate debt and other asset-backed: Assets were primarily included in loans receivable and substantially all liabilities were included in financial instruments sold, but not yet purchased.
- Real estate, credit-related and other investing: Assets were primarily included in financial instruments owned.

Consolidated VIEs

As of both September 2019 and December 2018, the Bank had no consolidated VIEs.

Note 13.

Other Assets

The table below presents other assets by type.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Held-to-maturity securities	\$ 1,510	\$ 498
FRB shares	414	414
Receivables from affiliates	408	193
Investments in qualified affordable housing projects	307	310
Income tax-related assets	299	221
FHLB shares	51	49
Miscellaneous receivables and other	150	207
Total	\$ 3,139	\$ 1,892

Held-to-Maturity Securities

Held-to-maturity securities are accounted for at amortized cost, net of other-than-temporary impairments.

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 September 2019			
Less than 5 years	\$ 1,510	\$ 1,554	2.73%
Total	\$ 1,510	\$ 1,554	2.73%
As of December 2018			
Less than 5 years	\$ 498	\$ 511	3.08%
Total	\$ 498	\$ 511	3.08%

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 5 through 8. 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 September 2019 and December 2018.
- The gross unrealized gains were \$44 million as of September 2019 and gross unrealized gains/(losses) were not material as of December 2018.

Notes to Consolidated Financial Statements (Unaudited)

- Held-to-maturity securities in an unrealized loss position are periodically reviewed for other-than-temporary impairment. The Bank considers various factors, including market conditions, changes in issuer credit ratings, severity and duration of the unrealized losses, and the intent and ability to hold the security until recovery to determine if the securities are other-than-temporarily impaired. There were no such impairments during each of the three and nine months ended September 2019 and September 2018.

Note 14.

Deposits

The table below presents the types and sources of deposits.

<i>\$ in millions</i>	Savings and Demand	Time	Total
As of September 2019			
Private bank deposits	\$ 42,714	\$ 256	\$ 42,970
Consumer deposits	27,698	13,547	41,245
Brokered certificates of deposit	–	38,406	38,406
Deposit sweep programs	16,457	–	16,457
Institutional deposits	2,193	8,764	10,957
Total	\$ 89,062	\$ 60,973	\$ 150,035

As of December 2018			
Private bank deposits	\$ 44,188	\$ 568	\$ 44,756
Consumer deposits	21,164	7,641	28,805
Brokered certificates of deposit	–	35,974	35,974
Deposit sweep programs	15,903	–	15,903
Institutional deposits	1,672	10,642	12,314
Total	\$ 82,927	\$ 54,825	\$ 137,752

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 \$5.58 billion as of September 2019 and \$4.87 billion as of December 2018 of deposits accounted for at fair value under the fair value option. See below and Note 8 for further information about deposits accounted for at fair value.
- Time deposits had a weighted average maturity of approximately 1.9 years as of September 2019 and 1.8 years as of December 2018.
- 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 September 2019, the Bank had 11 such deposit sweep program agreements.
- As of September 2019, institutional deposits were primarily from Goldman Sachs Funding LLC (Funding IHC), a wholly-owned subsidiary of Group Inc., and Group Inc. As of December 2018, substantially all institutional deposits were from Funding IHC.
- Deposits insured by the FDIC were \$100.33 billion as of September 2019 and \$86.27 billion as of December 2018.

The table below presents time deposits by contractual maturity.

<i>\$ in millions</i>	As of September 2019
Remainder of 2019	\$ 6,532
2020	25,815
2021	7,705
2022	7,606
2023	5,848
2024	4,062
2025 - thereafter	3,405
Total	\$ 60,973

As of September 2019, deposits included \$12.97 billion of time deposits that met or exceeded the applicable insurance limits.

Notes to Consolidated Financial Statements (Unaudited)

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 September 2019 and December 2018. 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 5 through 8. Had these deposits been included in the Bank's fair value hierarchy, they would have been classified in level 2 as of both September 2019 and December 2018.

Note 15.

Unsecured Borrowings

The table below presents information about unsecured borrowings.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Unsecured short-term borrowings	\$ 1,205	\$ 192
Unsecured long-term borrowings	6,205	6,755
Total	\$ 7,410	\$ 6,947

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.

Unsecured Short-Term Borrowings

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

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Current portion of senior unsecured borrowings	\$ 1,006	\$ –
Hybrid financial instruments	171	175
Borrowings from affiliates	11	13
Other unsecured short-term borrowings	17	4
Total	\$ 1,205	\$ 192

Hybrid Financial Instruments. The Bank accounts for hybrid financial instruments at fair value under the fair value option. See Note 8 for further information about hybrid financial instruments that are accounted for at fair value.

Borrowings from Affiliates. As of both September 2019 and December 2018, 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 for a period of six months with a final maturity date in 2020. As of both September 2019 and December 2018, there were no outstanding borrowings under this facility.

Accrued interest on long-term subordinated borrowings of \$11 million as of September 2019 and \$13 million as of December 2018 was included in unsecured short-term borrowings from affiliates.

The Bank had a senior debt facility consisting of an uncommitted term unsecured line of credit with Funding IHC which matured in September 2019. As of December 2018, there were no outstanding borrowings under this facility.

Unsecured Long-Term Borrowings

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

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Subordinated borrowings	\$ 4,250	\$ 4,250
Senior unsecured borrowings	1,955	2,505
Total	\$ 6,205	\$ 6,755

Subordinated Borrowings. As of both September 2019 and December 2018, the Bank had a revolving subordinated loan agreement with Funding IHC, which expires in 2039. As of both September 2019 and December 2018, outstanding subordinated borrowings under this agreement included \$2.00 billion maturing in 2024 and \$2.25 billion maturing in 2028. As of both September 2019 and December 2018, 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 September 2019 and \$2.50 billion as of December 2018. The weighted average interest rate was 2.64% as of September 2019 and 3.01% as of December 2018, and primarily related to floating rate obligations which are generally based on either the Secured Overnight Funding Rate or LIBOR. As of September 2019, 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 September 2019 and \$2.51 billion as of December 2018, which approximated its fair value.

Note 16.

Other Liabilities

The table below presents other liabilities by type.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Income tax-related liabilities	\$ 1,001	\$ 295
Payables to affiliates	483	396
Compensation and benefits	201	153
Accrued expenses and other	640	547
Total	\$ 2,325	\$ 1,391

Note 17.

Commitments, Contingencies and Guarantees

Commitments

The table below presents commitments by type.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Commitment Type		
Commercial lending:		
Investment-grade	\$ 75,498	\$ 74,461
Non-investment-grade	42,121	37,982
Warehouse financing	5,706	3,987
Credit card	9,596	—
Total lending	132,921	116,430
Collateralized agreement	856	622
Collateralized financing	80	146
Investment	656	683
Other	2,067	1,025
Total commitments	\$ 136,580	\$ 118,906

The table below presents commitments by expiration.

<i>\$ in millions</i>	As of September 2019			
	Remainder of 2019	2020 - 2021	2022 - 2023	2024 - Thereafter
Commitment Type				
Commercial lending:				
Investment-grade	\$ 2,432	\$ 22,630	\$ 31,585	\$ 18,851
Non-investment-grade	1,262	10,358	16,393	14,108
Warehouse financing	231	3,059	2,062	354
Credit card	9,596	—	—	—
Total lending	13,521	36,047	50,040	33,313
Collateralized agreement	856	—	—	—
Collateralized financing	80	—	—	—
Investment	—	—	—	656
Other	2,067	—	—	—
Total commitments	\$ 16,524	\$ 36,047	\$ 50,040	\$ 33,969

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 additional 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. These credit card lines are cancelable by the Bank.

The table below presents information about lending commitments.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Held for investment	\$ 119,055	\$ 103,777
Held for sale	6,739	6,397
At fair value	7,127	6,256
Total	\$ 132,921	\$ 116,430

In the table above:

- Held for investment lending commitments are accounted for on an accrual basis. See Note 9 for further information about such commitments.
- Held for sale lending commitments are accounted for at the lower of cost or fair value. See Note 9 for further information about such commitments.
- 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 instruments, net.

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 \$7.69 billion as of September 2019 and \$15.52 billion as of December 2018, 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 September 2019 and \$550 million was provided as of December 2018. 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 consumer and corporate loans.

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 23 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.

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 September 2019			
Carrying Value of Net Liability	\$ 1,884	\$ -	\$ 5
Maximum Payout/Notional Amount by Period of Expiration			
Remainder of 2019	\$ 9,776	\$ 22,269	\$ 156
2020 - 2021	59,567	-	1,863
2022 - 2023	9,226	-	1,273
2024 - thereafter	10,187	-	221
Total	\$ 88,756	\$ 22,269	\$ 3,513
As of December 2018			
Carrying Value of Net Liability	\$ 1,214	\$ -	\$ 8
Maximum Payout/Notional Amount by Period of Expiration			
2019	\$ 28,857	\$ 32,170	\$ 416
2020 - 2021	39,858	-	1,368
2022 - 2023	3,807	-	1,315
2024 - thereafter	9,538	-	-
Total	\$ 82,060	\$ 32,170	\$ 3,099

Notes to Consolidated Financial Statements (Unaudited)

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 \$104 million as of September 2019 and \$43 million as of December 2018, and derivative liabilities of \$1.99 billion as of September 2019 and \$1.26 billion as of December 2018.

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 \$22.85 billion as of September 2019 and \$33.07 billion as of December 2018. 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.

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 statements of financial condition as of both September 2019 and December 2018.

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.

Notes to Consolidated Financial Statements (Unaudited)

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 statements of financial condition as of both September 2019 and December 2018.

Note 18.

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).

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.

	As of		"Well-capitalized" Requirements
	September 2019	December 2018	
Risk-based capital requirements			
CET1 capital ratio	7.0%	6.4%	6.5%
Tier 1 capital ratio	8.5%	7.9%	8.0%
Total capital ratio	10.5%	9.9%	10.0%
Leverage requirements			
Tier 1 leverage ratio	4.0%	4.0%	5.0%
SLR	3.0%	3.0%	6.0%

Notes to Consolidated Financial Statements (Unaudited)

In the table above:

- As of September 2019, the CET1 capital ratio requirement included a minimum of 4.5%, the Tier 1 capital ratio requirement included a minimum of 6.0%, and the Total capital ratio requirement included a minimum of 8.0%. The requirements also included the capital conservation buffer of 2.5% and the countercyclical capital buffer, which the FRB has set to zero percent.
- As of December 2018, the CET1 capital ratio requirement included a minimum of 4.5%, the Tier 1 capital ratio requirement included a minimum of 6.0%, and the Total capital ratio requirement included a minimum of 8.0%. The requirements also included the 75% phase-in of the capital conservation buffer of 2.5% and the countercyclical capital buffer of zero percent.
- The “well-capitalized” requirements were the binding requirements for risk-based capital ratios as of December 2018 and were the binding requirements for leverage ratios as of both September 2019 and December 2018.
- The capital conservation buffer and countercyclical capital buffer phased in ratably from January 1, 2016 through January 1, 2019.

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

<i>\$ in millions</i>	Standardized	Advanced
As of September 2019		
CET1 capital	\$ 28,688	\$ 28,688
Tier 1 capital	\$ 28,688	\$ 28,688
Tier 2 capital	\$ 5,262	\$ 4,520
Total capital	\$ 33,950	\$ 33,208
RWAs	\$ 255,503	\$ 158,755
CET1 capital ratio	11.2%	18.1%
Tier 1 capital ratio	11.2%	18.1%
Total capital ratio	13.3%	20.9%
As of December 2018		
CET1 capital	\$ 27,467	\$ 27,467
Tier 1 capital	\$ 27,467	\$ 27,467
Tier 2 capital	\$ 5,069	\$ 4,446
Total capital	\$ 32,536	\$ 31,913
RWAs	\$ 248,356	\$ 149,019
CET1 capital ratio	11.1%	18.4%
Tier 1 capital ratio	11.1%	18.4%
Total capital ratio	13.1%	21.4%

In the table above, each of the risk-based capital ratios calculated in accordance with the Standardized Capital Rules was lower than that calculated in accordance with the Advanced Capital Rules and therefore the Standardized ratios were the ratios that applied to the Bank as of both September 2019 and December 2018.

Beginning in the fourth quarter of 2019, the Bank will make changes to the calculation of loss given default for certain wholesale exposures. The estimated impact of these changes would have been an increase in the Bank’s Advanced CET1 capital ratio of approximately 2.2 percentage points as of September 2019.

The table below presents information about leverage ratios.

<i>\$ in millions</i>	For the Three Months Ended or as of	
	September 2019	December 2018
Tier 1 capital	\$ 28,688	\$ 27,467
Average total assets	\$ 209,423	\$ 188,668
Deductions from Tier 1 capital	(60)	(62)
Average adjusted total assets	209,363	188,606
Average off-balance-sheet exposures	192,809	179,456
Total leverage exposure	\$ 402,172	\$ 368,062
Tier 1 leverage ratio	13.7%	14.6%
SLR	7.1%	7.5%

In the table above:

- Average total assets represents the average daily assets for the quarter.
- 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.

Notes to Consolidated Financial Statements (Unaudited)

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

<i>\$ in millions</i>	As of	
	September 2019	December 2018
CET1 capital	\$ 28,688	\$ 27,467
Tier 1 capital	\$ 28,688	\$ 27,467
Standardized Tier 2 and Total capital		
Tier 1 capital	\$ 28,688	\$ 27,467
Qualifying subordinated debt	4,250	4,250
Allowance for credit losses	1,012	819
Standardized Tier 2 capital	5,262	5,069
Standardized Total capital	\$ 33,950	\$ 32,536
Advanced Tier 2 and Total capital		
Tier 1 capital	\$ 28,688	\$ 27,467
Standardized Tier 2 capital	5,262	5,069
Allowance for credit losses	(1,012)	(819)
Other adjustments	270	196
Advanced Tier 2 capital	4,520	4,446
Advanced Total capital	\$ 33,208	\$ 31,913

In the table above:

- 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 15 for further information about the Bank's subordinated debt.

Risk-Weighted Assets. 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 inventory positions, as well as certain other financial assets and financial liabilities, due to adverse market movements over a defined time horizon with a specified confidence level.

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 one occasion during the nine months ended September 2019 and exceeded its 99% one-day regulatory VaR on four occasions during the year ended December 2018 (all of which occurred during the first half of 2018). There was no change in the VaR multiplier used to calculate Market RWAs;

- Stressed VaR is the potential loss in value of inventory positions, as well as certain other financial assets and financial liabilities, during a period of significant market stress;
- Incremental risk is the potential loss in value of non-securitized inventory 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.

Notes to Consolidated Financial Statements (Unaudited)

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 September 2019		
Credit RWAs		
Derivatives	\$ 92,699	\$ 20,143
Commitments, guarantees and loans	128,642	94,442
Securities financing transactions	5,045	2,944
Equity investments	500	538
Other	5,091	3,637
Total Credit RWAs	231,977	121,704
Market RWAs		
Regulatory VaR	4,959	4,959
Stressed VaR	16,171	16,171
Incremental risk	1,074	1,074
Comprehensive risk	541	541
Specific risk	781	781
Total Market RWAs	23,526	23,526
Total Operational RWAs	–	13,525
Total RWAs	\$ 255,503	\$ 158,755

As of December 2018

Credit RWAs		
Derivatives	\$ 86,727	\$ 17,774
Commitments, guarantees and loans	120,656	85,991
Securities financing transactions	6,233	2,294
Equity investments	776	823
Other	8,203	2,601
Total Credit RWAs	222,595	109,483
Market RWAs		
Regulatory VaR	3,443	3,443
Stressed VaR	18,850	18,850
Incremental risk	1,177	1,177
Comprehensive risk	1,212	1,212
Specific risk	1,079	1,079
Total Market RWAs	25,761	25,761
Total Operational RWAs	–	13,775
Total RWAs	\$ 248,356	\$ 149,019

In the table above:

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

The table below presents changes in RWAs.

<i>\$ in millions</i>	Standardized	Advanced
Nine Months Ended September 2019		
Risk-Weighted Assets		
Beginning balance	\$ 248,356	\$ 149,019
Credit RWAs		
Change in:		
Derivatives	5,972	2,369
Commitments, guarantees and loans	7,986	8,451
Securities financing transactions	(1,188)	650
Equity investments	(276)	(285)
Other	(3,112)	1,036
Change in Credit RWAs	9,382	12,221
Market RWAs		
Change in:		
Regulatory VaR	1,516	1,516
Stressed VaR	(2,679)	(2,679)
Incremental risk	(103)	(103)
Comprehensive risk	(671)	(671)
Specific risk	(298)	(298)
Change in Market RWAs	(2,235)	(2,235)
Change in Operational RWAs	–	(250)
Ending balance	\$ 255,503	\$ 158,755

Year Ended December 2018

Risk-Weighted Assets		
Beginning balance	\$ 229,775	\$ 164,602
Credit RWAs		
Change in:		
Derivatives	(825)	(8,465)
Commitments, guarantees and loans	21,043	(3,215)
Securities financing transactions	(965)	563
Equity investments	(59)	(233)
Other	1,872	(1,473)
Change in Credit RWAs	21,066	(12,823)
Market RWAs		
Change in:		
Regulatory VaR	747	747
Stressed VaR	(636)	(636)
Incremental risk	34	34
Comprehensive risk	413	413
Specific risk	(3,043)	(3,043)
Change in Market RWAs	(2,485)	(2,485)
Change in Operational RWAs	–	(275)
Ending balance	\$ 248,356	\$ 149,019

Notes to Consolidated Financial Statements (Unaudited)

RWAs Rollforward Commentary

Nine Months Ended September 2019. Standardized Credit RWAs as of September 2019 increased by \$9.38 billion compared with December 2018, reflecting an increase in commitments, guarantees and loans, principally due to increased lending activity and an increase in derivatives, reflecting an increase in derivative transactions. These increases were partially offset by a decrease in other credit RWAs, principally due to reduced exposures. Standardized Market RWAs as of September 2019 decreased by \$2.24 billion compared with December 2018, reflecting a decrease in stressed VaR, as a result of changes in risk exposure.

Advanced Credit RWAs as of September 2019 increased by \$12.22 billion compared with December 2018, reflecting an increase in commitments, guarantees and loans, principally due to increased lending activity and an increase in derivatives, reflecting an increase in derivative transactions. Advanced Market RWAs as of September 2019 decreased by \$2.24 billion compared with December 2018, reflecting a decrease in stressed VaR, as a result of changes in risk exposure.

Year Ended December 2018. Standardized Credit RWAs as of December 2018 increased by \$21.07 billion compared with December 2017, primarily reflecting an increase in commitments, guarantees and loans, principally due to an increase in lending activity. Standardized Market RWAs as of December 2018 decreased by \$2.49 billion compared with December 2017, primarily reflecting a decrease in specific risk on positions for which the Bank obtained increased transparency into the underliers and as a result utilized a modeled approach to calculate RWAs.

Advanced Credit RWAs as of December 2018 decreased by \$12.82 billion compared with December 2017. Beginning in the fourth quarter of 2018, GS Group's default experience was incorporated into the determination of probability of default, which resulted in a decrease in credit RWAs, primarily in commitments, guarantees and loans and derivatives. Advanced Market RWAs as of December 2018 decreased by \$2.49 billion compared with December 2017, primarily reflecting a decrease in specific risk on positions for which the Bank obtained increased transparency into the underliers and as a result utilized a modeled approach to calculate RWAs.

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. The amount deposited by the Bank at the Federal Reserve Bank of New York was \$26.93 billion as of September 2019 and \$29.20 billion as of December 2018, which exceeded regulatory reserve requirements by \$26.79 billion as of September 2019 and \$29.03 billion as of December 2018.

Note 19.

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	
	September 2019	December 2018
Assets		
Cash	\$ 209	\$ 95
Resale agreements	21,227	23,626
Customer and other receivables	1,958	2,002
Financial instruments owned	376	515
Other assets	408	193
Total	\$ 24,178	\$ 26,431
Liabilities		
Deposits	\$ 7,338	\$ 11,307
Repurchase agreements	10,218	3,815
Customer and other payables	299	121
Financial instruments sold, but not yet purchased	500	1,427
Unsecured borrowings	4,432	4,439
Other liabilities	483	396
Total	\$ 23,270	\$ 21,505

In the table above, financial instruments owned and financial instruments sold, but not yet purchased, 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. General Guarantee

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

Notes to Consolidated Financial Statements (Unaudited)

Interest Income and Interest Expense

The Bank recognizes interest income and interest expense in connection with various affiliated transactions. These transactions include resale agreements, repurchase agreements, deposits, collateral posted and received, other liabilities, and unsecured borrowings. The Bank recorded net interest income from affiliates of \$63 million for the three months ended September 2019, \$37 million for the three months ended September 2018, \$325 million for the nine months ended September 2019 and \$162 million for the nine months ended September 2018.

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 transferred net revenues of \$79 million to affiliates for the three months ended September 2019 and received net revenues of \$28 million from affiliates for the three months ended September 2018. The Bank transferred net revenues of \$242 million to affiliates for the nine months ended September 2019 and \$151 million to affiliates for the nine months ended September 2018. These amounts are included in gains and losses from financial instruments, net.

The Bank is subject to service charges from affiliates. The net charge to the Bank by affiliates was \$136 million for the three months ended September 2019, \$110 million for the three months ended September 2018, \$355 million for the nine months ended September 2019 and \$331 million for the nine months ended September 2018. 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.

Equity Transactions

During both the nine months ended September 2019 and September 2018, there were no equity contributions or dividends between the Bank and Group Inc.

Note 20.

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		Nine Months	
	Ended September	2018	Ended September	2018
	2019		2019	
Deposits with banks	\$ 170	\$ 285	\$ 633	\$ 809
Collateralized agreements	238	106	671	244
Financial instruments owned	380	219	1,001	641
Loans receivable (excluding loans held for sale)	859	747	2,566	2,000
Other interest	373	129	861	391
Total interest income	2,020	1,486	5,732	4,085
Deposits	943	640	2,636	1,671
Collateralized financings	84	18	198	46
Financial instruments sold, but not yet purchased	12	13	42	45
Borrowings	70	57	207	155
Other interest	214	99	496	189
Total interest expense	1,323	827	3,579	2,106
Net interest income	\$ 697	\$ 659	\$ 2,153	\$ 1,979

In the table above:

- Collateralized agreements consists of resale agreements.
- Other interest income primarily includes interest income on loans accounted for as held for sale, collateral balances posted to counterparties, foreign currency funding facilities and held-to-maturity securities.
- 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.

Notes to Consolidated Financial Statements (Unaudited)

Note 21.

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.

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 2019. 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 22.

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 management 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.

Notes to Consolidated Financial Statements (Unaudited)

The table below presents the credit concentrations in cash instruments included in financial instruments owned.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
U.S. government and agency obligations	\$ 40,836	\$ 23,961
Percentage of total assets	19.3%	12.5%

In addition, the Bank had \$26.93 billion as of September 2019 and \$29.20 billion as of December 2018 of cash deposits held at the Federal Reserve Bank of New York. These cash deposits are included in cash. The Bank also had U.S. government obligations of \$1.51 billion as of September 2019 and \$498 million as of December 2018 that were classified as held-to-maturity and included in other assets.

As of December 2018, the Bank had credit exposure in connection with derivative activities with a global clearing house which represented 2.4% of total assets, primarily related to margin posted.

As of both September 2019 and December 2018, 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 10 for further information about collateralized agreements and financings.

The Bank had \$36.98 billion as of September 2019 and \$33.24 billion as of December 2018 of U.S. government and agency obligations that collateralize resale agreements.

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 23.

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, residential mortgage servicing, lending 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.

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

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 24.

Subsequent Events

The Bank evaluated subsequent events through November 7, 2019, 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 statement of financial condition as of September 30, 2019, the related consolidated statements of earnings, comprehensive income and changes in shareholder's equity for the three and nine month periods ended September 30, 2019 and 2018, and the consolidated statements of cash flows for the nine month periods ended September 30, 2019 and 2018.

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 statement of financial condition of the Bank as of December 31, 2018, 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 7, 2019, we expressed an unmodified opinion on those consolidated financial statements. In our opinion, the information set forth in the accompanying consolidated statement of financial condition as of December 31, 2018, is consistent, in all material respects, with the audited consolidated financial statements from which it has been derived.

PricewaterhouseCoopers LLP

November 7, 2019

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		Nine Months	
	Ended September	2018	Ended September	2018
Assets				
Deposits with banks	\$ 31,337	\$ 57,122	\$ 36,441	\$ 61,825
Collateralized agreements	33,475	16,787	30,848	12,691
Financial instruments owned	54,230	25,789	45,465	25,905
Loans receivable (excluding loans held for sale)	63,560	57,455	63,278	54,061
Other interest-earning assets	13,001	12,093	13,099	11,669
Total interest-earning assets	195,603	169,246	189,131	166,151
Cash and due from banks	281	226	281	220
Other non-interest-earning assets	13,539	9,418	11,655	10,447
Total assets	\$209,423	\$178,890	\$ 201,067	\$176,818
Liabilities				
Interest-bearing deposits	\$142,289	\$125,782	\$ 138,745	\$123,494
Collateralized financings	10,030	1,044	6,866	755
Financial instruments sold, but not yet purchased	2,047	1,784	2,457	2,643
Borrowings	8,111	7,058	7,939	7,340
Other interest-bearing liabilities	3,736	4,014	3,633	4,147
Total interest-bearing liabilities	166,213	139,682	159,640	138,379
Non-interest-bearing deposits	5,140	4,138	4,730	4,051
Other non-interest-bearing liabilities	9,323	8,338	8,385	8,164
Total liabilities	180,676	152,158	172,755	150,594
Shareholder's equity	28,747	26,732	28,312	26,224
Total liabilities and shareholder's equity	\$209,423	\$178,890	\$ 201,067	\$176,818

\$ in millions	Interest for the			
	Three Months		Nine Months	
	Ended September	2018	Ended September	2018
Assets				
Deposits with banks	\$ 170	\$ 285	\$ 633	\$ 809
Collateralized agreements	238	106	671	244
Financial instruments owned	380	219	1,001	641
Loans receivable (excluding loans held for sale)	859	747	2,566	2,000
Other interest-earning assets	373	129	861	391
Total interest-earning assets	\$ 2,020	\$ 1,486	\$ 5,732	\$ 4,085
Liabilities				
Interest-bearing deposits	\$ 943	\$ 640	\$ 2,636	\$ 1,671
Collateralized financings	84	18	198	46
Financial instruments sold, but not yet purchased	12	13	42	45
Borrowings	70	57	207	155
Other interest-bearing liabilities	214	99	496	189
Total interest-bearing liabilities	\$ 1,323	\$ 827	\$ 3,579	\$ 2,106
Net interest income	\$ 697	\$ 659	\$ 2,153	\$ 1,979

	Annualized Average Rate for the			
	Three Months		Nine Months	
	Ended September	2018	Ended September	2018
Assets				
Deposits with banks	2.11%	2.00%	2.32%	1.75%
Collateralized agreements	2.76%	2.53%	2.91%	2.57%
Financial instruments owned	2.72%	3.41%	2.94%	3.31%
Loans receivable (excluding loans held for sale)	5.25%	5.21%	5.42%	4.95%
Other interest-earning assets	N.M.	4.28%	N.M.	4.48%
Total interest-earning assets	4.01%	3.52%	4.05%	3.29%
Liabilities				
Interest-bearing deposits	2.57%	2.04%	2.54%	1.81%
Collateralized financings	3.25%	N.M.	3.86%	N.M.
Financial instruments sold, but not yet purchased	2.28%	2.92%	2.29%	2.28%
Borrowings	3.35%	3.24%	3.49%	2.82%
Other interest-bearing liabilities	N.M.	9.89%	N.M.	6.09%
Total interest-bearing liabilities	3.09%	2.37%	3.00%	2.03%
Net interest margin	1.38%	1.56%	1.52%	1.59%

Supplemental Financial Information

In the tables above:

- Deposits with banks primarily consist of deposits held at the Federal Reserve Bank of New York.
- 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 both the three and nine months ended September 2018 was not meaningful. See Note 10 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 8 to the consolidated financial statements and “Results of Operations” in Part II of this Quarterly Report for further information about financial instruments owned, and financial instruments sold, but not yet purchased and related interest.
- Loans receivable (excluding loans held for sale) consists of loans held for investment that are accounted for at amortized cost net of allowance for loan losses. Interest on loans receivable 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 receivable and related interest.
- Other interest-earning assets consists of customer and other receivables, loans held for sale that are accounted for at the lower of cost or fair value and held-to-maturity securities that are accounted for at amortized cost, net of other-than-temporary impairments. 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-earning assets and other interest-bearing liabilities for the three and nine months ended September 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 institutions, corporations, affiliates, clients of third-party broker-dealers, private bank clients and U.S. consumers. See Note 14 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 10 and 15 to the consolidated financial statements and “Balance Sheet Analysis and Metrics” in Part II of this Quarterly Report for further information about short-term and long-term borrowings and related interest.
- See Note 20 to the consolidated financial statements for further information about interest income and interest expense.

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 U.S. Bureau of Consumer Financial Protection (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.

When we use the terms “the Bank,” “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 The Goldman Sachs Group, Inc. (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, 2018. References to “the 2018 Annual Report” are to our Annual Report for the year ended December 31, 2018. All references to “this Quarterly Report,” of which this Management’s Discussion and Analysis forms a part, refers to the report dated November 7, 2019. See the 2018 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 September 2019, June 2019 and September 2018 refer to our periods ended, or the dates, as the context requires, September 30, 2019, June 30, 2019 and September 30, 2018, respectively. All references to December 2018 refer to the date December 31, 2018. Any reference to a future year refers to a year ending on December 31 of that year. Certain reclassifications have been made to previously reported amounts to conform to the current presentation.

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 wholly-owned subsidiary of 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.

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

Management's Discussion and Analysis

Executive Overview

Three Months Ended September 2019 versus September 2018. We generated net earnings of \$316 million for the third quarter of 2019, a decrease of 35% compared with \$484 million for the third quarter of 2018.

Net revenues were \$1.21 billion for the third quarter of 2019, a decrease of 4% compared with \$1.26 billion for the third quarter of 2018, primarily reflecting lower non-interest revenues, partially offset by higher net interest income.

Net interest income was \$697 million for the third quarter of 2019, an increase of 6% compared with \$659 million for the third quarter of 2018. This increase was primarily driven by higher interest income on other interest-earning assets, financial instruments owned and collateralized agreements, partially offset by increased interest expense on interest-bearing deposits.

Non-interest revenues were \$510 million for the third quarter of 2019, a decrease of 15% compared with \$597 million for the third quarter of 2018, primarily reflecting lower net gains from financial instruments.

Provision for credit losses was \$157 million for the third quarter of 2019, an increase of 18% compared with \$133 million for the third quarter of 2018, primarily reflecting higher provisions on corporate loans and lending commitments.

Operating expenses were \$634 million for the third quarter of 2019, an increase of 30% compared with \$488 million for the third quarter of 2018, primarily reflecting higher professional fees, service charges, communications and technology expenses, compensation and benefits and non-compensation expenses charged by affiliates pursuant to the Master Services Agreement.

As of September 2019, our Common Equity Tier 1 (CET1) capital ratio as calculated in accordance with the Standardized Capital Rules was 11.2% and as calculated in accordance with the Advanced Capital Rules was 18.1%. See Note 18 to the consolidated financial statements for further information about our capital ratios.

Nine Months Ended September 2019 versus September 2018. We generated net earnings of \$1.12 billion for the first nine months of 2019, a decrease of 27% compared with \$1.53 billion for the first nine months of 2018.

Net revenues were \$3.69 billion for the first nine months of 2019, a decrease of 3% compared with \$3.78 billion for the first nine months of 2018, primarily reflecting lower non-interest revenues, partially offset by higher net interest income.

Net interest income was \$2.15 billion for the first nine months of 2019, an increase of 9% compared with \$1.98 billion for the first nine months of 2018. This increase was primarily driven by higher interest income on loans receivable, other interest-earning assets and collateralized agreements, partially offset by increased interest expense on interest-bearing deposits and other interest-bearing liabilities.

Non-interest revenues were \$1.54 billion for the first nine months of 2019, a decrease of 15% compared with \$1.81 billion for the first nine months of 2018, primarily reflecting lower net gains from financial instruments.

Provision for credit losses was \$487 million for the first nine months of 2019, an increase of 68% compared with \$290 million for the first nine months of 2018, primarily reflecting higher provisions on corporate loans and lending commitments and higher provisions on consumer loans.

Operating expenses were \$1.73 billion for the first nine months of 2019, an increase of 15% compared with \$1.50 billion for the first nine months of 2018, primarily reflecting higher communications and technology expenses, professional fees, compensation and benefits and non-compensation expenses charged by affiliates pursuant to the Master Services Agreement.

As part of our strategic initiatives, we have continued to invest in the growth of our digital platform and our launches of our credit card and transaction banking activities. We expect operating expenses will continue to increase as we pursue our strategic initiatives. During the third quarter of 2019, we launched our credit card business and our transaction banking activities for affiliates.

Management's Discussion and Analysis

Business Environment

During the third quarter of 2019, global real gross domestic product (GDP) growth appeared to decrease compared with the second quarter of 2019, reflecting decreased growth in both emerging markets and advanced economies, including in the U.S. Continued concerns about future global growth and a mixed macroeconomic environment led to accommodative monetary policies by global central banks, including two cuts to the federal funds rate by the U.S. Federal Reserve during the quarter to a target range of 1.75% to 2.00%. The market sentiment in the third quarter was also impacted by continued geopolitical uncertainty, including ongoing trade concerns between the U.S. and China, the approaching deadline related to the U.K.'s decision to leave the E.U. (Brexit), turmoil in Argentina and a temporary spike in oil prices.

Critical Accounting Policies

Loans Receivable

Loans receivable in the consolidated statements of financial condition consists of:

- Loans held for investment which are accounted for at amortized cost net of allowance for loan losses.
- Loans held for sale which are accounted for at the lower of cost or fair value.

We assess our loans for impairment on an ongoing basis through our credit review process. A credit review is an independent analysis of the capacity and willingness of a borrower to meet its financial obligations, resulting in an internal credit rating. We also assign a regulatory risk rating to such loans based on the definitions provided by the U.S. federal bank regulatory agencies. We may also, where applicable, review certain key metrics, such as delinquency status, collateral values, Fair Isaac Corporation (FICO) credit scores and other risk factors. Such loans are determined to be impaired when it is probable that we will not be able to collect all principal and interest due under the contractual terms of the loan. At that time, loans are generally placed on nonaccrual status, 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.

Interest on loans receivable is recognized over the life of the loan and is recorded on an accrual basis.

Our allowance for loan losses consists of specific loan-level reserves and portfolio level reserves. Specific loan-level reserves are determined on loans that exhibit credit quality weakness and are therefore individually evaluated for impairment. Portfolio level reserves are determined on loans not evaluated for specific loan-level reserves by aggregating groups of loans with similar risk characteristics and estimating the probable loss inherent in the portfolio.

See Note 9 to the consolidated financial statements for further information about loans receivable.

Fair Value

Fair Value Hierarchy. Financial instruments owned and financial instruments sold, but not yet purchased (i.e., inventory), and certain other financial assets and financial liabilities, are included in our consolidated statements of financial condition at fair value (i.e., marked-to-market), with related gains or losses generally recognized in our consolidated statements of earnings.

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

The fair values for substantially all of our financial assets and 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 financial liabilities may require appropriate valuation adjustments that a market participant would require to arrive at fair value for factors, such as counterparty and our or our affiliates' credit quality, funding risk, transfer restrictions, liquidity and bid/offer spreads.

Management's Discussion and Analysis

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 1.0% as of September 2019, 1.0% as of June 2019 and 1.2% as of December 2018, of our total assets. See Notes 5 through 8 to the consolidated financial statements for further information about level 3 financial assets, including changes in level 3 financial assets and related fair value measurements. Absent evidence to the contrary, instruments classified in level 3 of the fair value hierarchy are initially valued at transaction price, which is considered to be the best initial estimate of fair value. Subsequent to the transaction date, we use other methodologies to determine fair value, which vary based on the type of instrument. Estimating the fair value of level 3 financial instruments requires judgments to be made. These judgments include:

- Determining the appropriate valuation methodology and/or model for each type of level 3 financial instrument;
- Determining model inputs based on an evaluation of all relevant empirical market data, including prices evidenced by market transactions, interest rates, credit spreads, volatilities and correlations; and
- Determining appropriate valuation adjustments, including those related to illiquidity or counterparty credit quality.

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

Controls Over Valuation of Financial Instruments

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, Markit, Bloomberg, IDC, TRACE). Data obtained from various sources is compared to ensure consistency and validity. When broker or dealer quotations or third-party pricing vendors are used for valuation or price verification, greater priority is generally given to executable quotations.
- **Calibration to Market Comparables.** Market-based transactions are used to corroborate the valuation of positions with similar characteristics, risks and components.
- **Relative Value Analyses.** Market-based transactions are analyzed to determine the similarity, measured in terms of risk, liquidity and return, of one instrument relative to another or, for a given instrument, of one maturity relative to another.
- **Collateral Analyses.** Margin calls on derivatives are analyzed to determine implied values, which are used to corroborate our valuations.
- **Execution of Trades.** Where appropriate, trading desks are instructed to execute trades in order to provide evidence of market-clearing levels.
- **Backtesting.** Valuations are corroborated by comparison to values realized upon sales.

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

Review of Net Revenues. Independent 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.

Management's Discussion and Analysis

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 2018 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.

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 2018 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		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Net revenues	\$ 1,207	\$ 1,256	\$ 3,689	\$ 3,784
Pre-tax earnings	\$ 416	\$ 635	\$ 1,473	\$ 1,997
Net earnings	\$ 316	\$ 484	\$ 1,116	\$ 1,530
Annualized net earnings to				
average total assets	0.6%	1.1%	0.7%	1.2%
Annualized return on average				
shareholder's equity	4.3%	7.2%	5.3%	7.8%
Average shareholder's equity				
to average total assets	13.7%	14.9%	14.1%	14.8%

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		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Interest income	\$ 2,020	\$ 1,486	\$ 5,732	\$ 4,085
Interest expense	1,323	827	3,579	2,106
Net interest income	697	659	2,153	1,979
Non-interest revenues	510	597	1,536	1,805
Net revenues	\$ 1,207	\$ 1,256	\$ 3,689	\$ 3,784
Net interest margin	1.38%	1.56%	1.52%	1.59%

In the table above:

- Interest income includes interest earned from our lending portfolio, consisting of corporate lending, private wealth management (PWM) lending, commercial real estate lending, residential real estate lending, consumer 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 financial instruments owned, collateralized agreements and collateral balances posted to counterparties.
- Interest expense includes interest related to deposit-taking activities. Interest expense also includes interest related to certain financial instruments sold, but not yet purchased, collateralized financings, unsecured borrowings and collateral balances received from counterparties. 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. 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 net gains and losses from financial instruments 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.
- Provision for credit losses, previously reported in non-interest revenues, is now reported as a separate line item in the consolidated statements of earnings. Previously reported amounts have been conformed to the current presentation.

Management's Discussion and Analysis

Three Months Ended September 2019 versus September 2018. Net revenues in the consolidated statements of earnings, including net interest income, were \$1.21 billion for the third quarter of 2019, a decrease of 4% compared with \$1.26 billion for the third quarter of 2018, primarily reflecting lower non-interest revenues, partially offset by higher net interest income.

Net Interest Income

Net interest income in the consolidated statements of earnings was \$697 million for the third quarter of 2019, 6% higher than the third quarter of 2018, primarily driven by higher interest income, partially offset by higher interest expense. Net interest income was 58% of net revenues in the third quarter of 2019, compared with 52% in the third quarter of 2018. See below for further information about interest income and interest expense.

Net Interest Margin

Net interest margin was 138 basis points for the third quarter of 2019, a decrease of 18 basis points compared with 156 basis points for the third quarter of 2018, primarily driven by increased interest expense from deposits due to higher interest rates and higher average balances, partially offset by increased interest income due to higher average balances and higher interest rates.

Non-Interest Revenues

Non-interest revenues were \$510 million for the third quarter of 2019, 15% lower than the third quarter of 2018, primarily reflecting lower net gains from financial instruments.

Nine Months Ended September 2019 versus September 2018. Net revenues in the consolidated statements of earnings, including net interest income, were \$3.69 billion for the first nine months of 2019, a decrease of 3% compared with \$3.78 billion for the first nine months of 2018, primarily reflecting lower non-interest revenues, partially offset by higher net interest income.

Net Interest Income

Net interest income in the consolidated statements of earnings was \$2.15 billion for the first nine months of 2019, 9% higher than the first nine months of 2018, primarily driven by higher interest income, partially offset by higher interest expense. Net interest income was 58% of net revenues in the first nine months of 2019, compared with 52% in the first nine months of 2018.

Net Interest Margin

Net interest margin was 152 basis points for the first nine months of 2019, a decrease of 7 basis points compared with 159 basis points for the first nine months of 2018, primarily driven by increased interest expense from deposits due to higher interest rates and higher average balances, partially offset by increased interest income due to higher average balances and higher interest rates.

Non-Interest Revenues

Non-interest revenues were \$1.54 billion for the first nine months of 2019, 15% lower than the first nine months of 2018, primarily reflecting lower net gains from financial instruments.

Interest Income

The table below presents our sources of interest income.

\$ in millions	Three Months		Nine Months	
	Ended September	2018	Ended September	2018
Loans receivable (excluding loans held for sale)	\$ 859	\$ 747	\$ 2,566	\$ 2,000
Financial instruments owned	380	219	1,001	641
Collateralized agreements	238	106	671	244
Deposits with banks	170	285	633	809
Other	373	129	861	391
Total interest income	\$ 2,020	\$ 1,486	\$ 5,732	\$ 4,085

Three Months Ended September 2019 versus September 2018.

Interest income in the consolidated statements of earnings was \$2.02 billion for the third quarter of 2019, 36% higher than the third quarter of 2018. 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 receivable (excluding loans held for sale) was \$859 million for the third quarter of 2019, 15% higher than the third quarter of 2018, primarily due to higher average balances. See Note 9 to the consolidated financial statements for further information about loans receivable.

Interest income from financial instruments owned was \$380 million for the third quarter of 2019, 74% higher than the third quarter of 2018, primarily due to higher average balances. See Note 4 to the consolidated financial statements for further information about financial instruments owned. Interest income from financial instruments owned also includes interest income from our loans and securities accounted for at fair value. See Notes 6 and 8 to the consolidated financial statements for further information about loans and securities accounted for at fair value.

Interest income from collateralized agreements was \$238 million for the third quarter of 2019, 125% higher than the third quarter of 2018, primarily due to higher average balances.

Interest income from deposits with banks was \$170 million for the third quarter of 2019, 40% lower than the third quarter of 2018, primarily due to lower average balances. See Note 3 to the consolidated financial statements for further information about our cash.

Management's Discussion and Analysis

Other interest income was \$373 million for the third quarter of 2019, 189% higher than the third quarter of 2018, primarily due to higher interest rates. Other interest income primarily includes interest income from loans accounted for as held for sale, collateral balances posted to counterparties, foreign currency funding facilities and held-to-maturity securities.

Nine Months Ended September 2019 versus September 2018. Interest income in the consolidated statements of earnings was \$5.73 billion for the first nine months of 2019, 40% higher than the first nine months of 2018. 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 receivable (excluding loans held for sale) was \$2.57 billion for the first nine months of 2019, 28% higher than the first nine months of 2018, primarily due to higher average balances and higher rates.

Interest income from financial instruments owned was \$1.00 billion for the first nine months of 2019, 56% higher than the first nine months of 2018, primarily due to higher average balances, partially offset by lower rates.

Interest income from collateralized agreements was \$671 million for the first nine months of 2019, 175% higher than the first nine months of 2018, primarily due to higher average balances.

Interest income from deposits with banks was \$633 million for the first nine months of 2019, 22% lower than the first nine months of 2018, primarily due to lower average balances, partially offset by higher interest rates.

Other interest income was \$861 million for the first nine months of 2019, 120% higher than the first nine months of 2018, primarily due to higher interest rates and higher average balances. Other interest income primarily includes interest income from loans accounted for as held for sale, collateral balances posted to counterparties, foreign currency funding facilities and held-to-maturity securities.

Interest Expense

The table below presents our sources of interest expense.

<i>\$ in millions</i>	Three Months		Nine Months	
	Ended September	2018	Ended September	2018
Deposits	\$ 943	\$ 640	\$ 2,636	\$ 1,671
Borrowings	70	57	207	155
Collateralized financings	84	18	198	46
Financial instruments sold, but not yet purchased	12	13	42	45
Other	214	99	496	189
Total interest expense	\$ 1,323	\$ 827	\$ 3,579	\$ 2,106

Three Months Ended September 2019 versus September 2018. Interest expense in the consolidated statements of earnings was \$1.32 billion for the third quarter of 2019, 60% higher than the third quarter of 2018. 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 \$943 million for the third quarter of 2019, 47% higher than the third quarter of 2018, primarily due to higher interest rates and higher average balances.

Interest expense from borrowings was \$70 million for the third quarter of 2019, 23% higher than the third quarter of 2018, primarily due to higher average balances.

Interest expense from collateralized financings was \$84 million for the third quarter of 2019, 367% higher than the third quarter of 2018, primarily due to higher average balances.

Interest expense from financial instruments sold, but not yet purchased was \$12 million for the third quarter of 2019, 8% lower than the third quarter of 2018, primarily due to lower rates.

Other interest expense was \$214 million for the third quarter of 2019, 116% higher than the third quarter of 2018, primarily due to higher interest rates. Other interest expense primarily includes interest expense on collateral balances received from counterparties and interest expense on foreign currency funding facilities.

Nine Months Ended September 2019 versus September 2018. Interest expense in the consolidated statements of earnings was \$3.58 billion for the first nine months of 2019, 70% higher than the first nine months of 2018. 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 \$2.64 billion for the first nine months of 2019, 58% higher than the first nine months of 2018, primarily due to higher interest rates and higher average balances.

Interest expense from borrowings was \$207 million for the first nine months of 2019, 34% higher than the first nine months of 2018, primarily due to higher interest rates and higher average balances.

Interest expense from collateralized financings was \$198 million for the first nine months of 2019, 330% higher than the first nine months of 2018, primarily due to higher average balances.

Management's Discussion and Analysis

Interest expense from financial instruments sold, but not yet purchased was \$42 million for the first nine months of 2019, 7% lower than the first nine months of 2018, primarily due to lower average balances.

Other interest expense was \$496 million for the first nine months of 2019, 162% higher than the first nine months of 2018, primarily due to higher interest rates, partially offset by lower 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 receivable and lending commitments held for investment. 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 September		Nine Months Ended September	
	2019	2018	2019	2018
Provision for credit losses	\$ 157	\$ 133	\$ 487	\$ 290

Three Months Ended September 2019 versus September 2018. Provision for credit losses was \$157 million for the third quarter of 2019, 18% higher than the third quarter of 2018, primarily reflecting higher provisions on corporate loans and lending commitments.

Nine Months Ended September 2019 versus September 2018. Provision for credit losses was \$487 million for the first nine months of 2019, 68% higher than the first nine months of 2018, primarily reflecting higher provisions on corporate loans and lending commitments and higher provisions on consumer loans.

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 September		Nine Months Ended September	
	2019	2018	2019	2018
Compensation and benefits	\$ 122	\$ 99	\$ 442	\$ 401
Service charges	136	110	355	331
Professional fees	77	37	156	103
Market development	54	55	155	170
Communications and technology	43	19	116	53
Brokerage, clearing, exchange and distribution fees	31	23	81	75
Other expenses	171	145	424	364
Total operating expenses	\$ 634	\$ 488	\$ 1,729	\$ 1,497
Headcount at period-end	2,127	1,703		

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 regulatory and agency fees, certain expenses related to loan securitizations and non-compensation expenses charged by affiliates to us pursuant to the Master Services Agreement. Expenses related to communication and technology were previously reported in Other expenses. Reclassifications have been made to previously reported amounts to conform to the current presentation.
- Headcount consists of our employees, and excludes consultants and temporary staff previously reported as part of total staff. As a result, expenses related to these consultants and temporary staff are now reported in professional fees. Previously such amounts were reported in compensation and benefits. Reclassifications have been made to previously reported amounts to conform to the current presentation.

Three Months Ended September 2019 versus September 2018. Operating expenses in the consolidated statements of earnings were \$634 million for the third quarter of 2019, 30% higher than the third quarter of 2018.

Compensation and benefits expenses in the consolidated statements of earnings were \$122 million for the third quarter of 2019, 23% higher than the third quarter of 2018, primarily related to increased headcount, partially offset by a decline in operating performance.

Management's Discussion and Analysis

Service charges in the consolidated statements of earnings were \$136 million for the third quarter of 2019, 24% higher than the third quarter of 2018, reflecting an increase in compensation expenses charged by affiliates pursuant to the Master Services Agreement.

Professional fees in the consolidated statements of earnings were \$77 million for the third quarter of 2019, 108% higher than the third quarter of 2018, primarily due to higher expenses related to our credit card activities.

Market development expenses in the consolidated statements of earnings was \$54 million for the third quarter of 2019, essentially unchanged compared with the third quarter of 2018.

Communications and technology expenses in the consolidated statements of earnings were \$43 million for the third quarter of 2019, 126% higher than the third quarter of 2018, primarily due to new business initiatives.

Brokerage, clearing, exchange and distribution fees in the consolidated statements of earnings were \$31 million for the third quarter of 2019, 35% higher than the third quarter of 2018, primarily due to an increase in activity levels.

Other expenses in the consolidated statements of earnings were \$171 million for the third quarter of 2019, 18% higher than the third quarter of 2018, primarily due to an increase in non-compensation expenses charged by affiliates pursuant to the Master Services Agreement and lending related expenses, partially offset by a decrease in regulatory and agency fees.

Nine Months Ended September 2019 versus September 2018. Operating expenses in the consolidated statements of earnings were \$1.73 billion for the first nine months of 2019, 15% higher than the first nine months of 2018.

Compensation and benefits expenses in the consolidated statements of earnings were \$442 million for the first nine months of 2019, 10% higher than the first nine months of 2018, primarily related to increased headcount, partially offset by a decline in operating performance.

Service charges in the consolidated statements of earnings were \$355 million for the first nine months of 2019, 7% higher than the first nine months of 2018, reflecting an increase in compensation expenses charged by affiliates pursuant to the Master Services Agreement.

Professional fees in the consolidated statements of earnings were \$156 million for the first nine months of 2019, 51% higher than the first nine months of 2018, primarily due to higher expenses related to our credit card activities.

Market development expenses in the consolidated statements of earnings were \$155 million for the first nine months of 2019, 9% lower than the first nine months of 2018, primarily due to lower advertising expenses.

Communications and technology expenses in the consolidated statements of earnings were \$116 million for the first nine months of 2019, 119% higher than the first nine months of 2018, primarily due to new business initiatives.

Brokerage, clearing, exchange and distribution fees in the consolidated statements of earnings were \$81 million for the first nine months of 2019, 8% higher than the first nine months of 2018, primarily due to an increase in activity levels.

Other expenses in the consolidated statements of earnings were \$424 million for the first nine months of 2019, 16% higher than the first nine months of 2018, primarily due to an increase in non-compensation expenses charged by affiliates pursuant to the Master Services Agreement and lending related expenses, partially offset by a decrease in regulatory and agency fees.

Provision for Taxes

The effective income tax rate for the first nine months of 2019 was 24.2%, up from the full year tax rate of 21.6% for 2018, which included a \$22 million income tax benefit in 2018 related to the finalization of the impact of the Tax Cuts and Jobs Act (Tax Legislation). The effective income tax rate was essentially unchanged compared with 24.3% for the first half of 2019.

Tax Legislation reduced the U.S. corporate tax rate to 21%, eliminated tax deductions for certain expenses and enacted two new taxes, Base Erosion and Anti-Abuse Tax (BEAT) and Global Intangible Low Taxed Income (GILTI). BEAT is an alternative minimum tax that applies to banks that pay more than 2% of total deductible expenses to certain foreign subsidiaries. GILTI is effectively a 10.5% tax, before allowable credits for foreign taxes paid, on the annual taxable income of certain foreign subsidiaries.

In June 2019, the U.S. Internal Revenue Service (IRS) and the U.S. Department of the Treasury (U.S. Treasury) released final, temporary and proposed regulations relating to the implementation of GILTI. In 2018, the IRS and U.S. Treasury issued proposed regulations relating to BEAT and GILTI. During both the nine months ended September 2019 and the year ended December 2018, we were not subject to BEAT and GILTI based on our current interpretation of these rules.

Management's Discussion and Analysis

Balance Sheet and Funding Sources

See “Balance Sheet and Funding Sources” in Part II of the 2018 Annual Report for further information about our balance sheet management process and our funding sources.

Balance Sheet Analysis and Metrics

As of September 2019, total assets in our consolidated statements of financial condition were \$211.83 billion, an increase of \$20.34 billion from December 2018, primarily reflecting an increase in financial instruments owned of \$20.72 billion.

As of September 2019, total liabilities in our consolidated statements of financial condition were \$182.95 billion, an increase of \$19.18 billion from December 2018, primarily reflecting increases in deposits of \$12.28 billion and securities sold under agreements to repurchase (repurchase agreements) of \$6.40 billion.

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			
	September 2019		December 2018	
Deposits	\$ 150,035	76%	\$ 137,752	78%
Collateralized financings	10,926	5%	4,475	2%
Unsecured borrowings	7,410	4%	6,947	4%
Total shareholder's equity	28,880	15%	27,718	16%
Total funding sources	\$ 197,251	100%	\$ 176,892	100%

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. A growing portion of our deposit base consists of consumer deposits. Deposits are primarily used to finance lending activity, other inventory and a portion of our global core liquid assets (GCLA). We accept deposits, including savings, demand and time deposits. Our depositors include institutions, corporations, affiliates, clients of third-party broker-dealers, private bank clients and U.S. consumers. We also accept deposits from Funding IHC and Group Inc. to address our funding needs.

The average annualized interest rate on our interest-bearing deposits was 2.57% for the third quarter of 2019 and 2.04% for the third quarter of 2018, and 2.54% for the first nine months of 2019 and 1.81% for the first nine months of 2018.

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

	Three Months		Nine Months	
	Ended September		Ended September	
	2019	2018	2019	2018
Savings and demand	2.21%	2.02%	2.32%	1.67%
Time	3.19%	2.06%	2.93%	2.01%

See “Supplemental Financial Information — Distributions of Assets, Liabilities, and Shareholder's Equity” and Note 14 to the consolidated financial statements for further information about deposits.

Collateralized Financings. We fund certain of our inventory on a secured basis by entering into collateralized financing agreements, such as repurchase agreements. We are also a member of the Federal Home Loan Bank of New York (FHLB). Outstanding borrowings from the FHLB were \$503 million as of September 2019 and \$528 million as of December 2018. See Note 10 to the consolidated financial statements for further information about collateralized financings.

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

Management's Discussion and Analysis

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 15 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 Note 19 to 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 2018 Annual Report for further information about our equity capital management processes and regulatory capital requirement.

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). During both the nine months ended September 2019 and the year ended 2018, we did not pay a dividend to Group Inc. Under the FRB regulations referenced above, we could have declared dividends up to \$4.66 billion as of September 2019, and \$5.00 billion as of December 2018, to Group Inc.

Stress Testing

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 to submit the results of our annual stress test in 2019.

Regulatory Matters and Other Developments

Regulatory Matters

See "Business — Regulation" in Part I of the 2018 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 18 to the consolidated financial statements for information about our risk-based capital ratios and leverage ratios.

Resolution Plan. We are required by the FDIC to submit periodic plans that describe our strategy for a rapid and orderly resolution in the event of material financial distress or failure (resolution plan). We submitted our most recent resolution plan in June 2018. In August 2018, the FDIC extended the next resolution plan filing deadline to no sooner than July 1, 2020. In April 2019, the FDIC released an advanced notice of proposed rulemaking about potential changes to its resolution planning requirements for insured depository institutions (IDIs), including us, and delayed the next round of IDI resolution plan submissions until the rulemaking process is complete. See "Business — Regulation" in Part I of the 2018 Annual Report for further information about our resolution plan.

Other Developments

Brexit. In March 2017, the U.K. government commenced the formal proceedings to withdraw from the E.U. This triggered a period of two years during which the terms of the U.K.'s exit from the E.U. were required to be negotiated and the process to be concluded.

Management's Discussion and Analysis

The E.U. and the U.K. have agreed to a withdrawal agreement (the Withdrawal Agreement) which requires ratification by both the U.K. and the E.U. Parliaments. The U.K. Parliament has not yet approved the Withdrawal Agreement. In October 2019, the U.K. government requested a further extension to the negotiating period. The E.U. has agreed to an extension until January 31, 2020 to allow the U.K. Parliament time to either ratify the Withdrawal Agreement or to hold other democratic processes, such as a general election. On October 29, 2019, the U.K. Parliament agreed to hold a general election on December 12, 2019. If the Withdrawal Agreement is ratified ahead of January 31, 2020, the terms of the extension will allow the U.K. to leave the E.U. at an earlier date. Notwithstanding this, without a successful conclusion to the process by January 31, 2020, there is a possibility that the U.K. will leave the E.U. without a clear framework for its relationship with the E.U. or any transitional arrangements in place, in which case firms based in the U.K. will lose their existing access arrangements to the E.U. markets. Such a scenario is referred to as a “hard” Brexit.

GS Group is monitoring the ongoing developments related to Brexit and continues to prepare for anticipated outcomes, including a hard Brexit, with the goal of ensuring that GS Group maintains access to E.U. markets and is able to continue to provide products and services to its E.U. clients. See “Regulatory Matters and Other Developments — Other Developments” in Part II of the 2018 Annual Report for further information about GS Group’s plan, which includes our activities, to manage a hard Brexit scenario.

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 U.K. Financial Conduct Authority, which regulates LIBOR, has announced that it will not compel panel banks to contribute to LIBOR after 2021. The E.U. Benchmarks Regulation imposed conditions under which only compliant benchmarks may be used in new contracts after 2021. 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. In addition, during 2019, we issued debt and deposits linked to the Secured Overnight Funding Rate. See “Regulatory Matters and Other Developments — Other Developments” in Part II of the 2018 Annual Report for further information about the transition program.

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 17 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 21 to the consolidated financial statements for further information about our unrecognized tax benefits.

The table below presents our contractual obligations by type.

<i>\$ in millions</i>	As of	
	September 2019	December 2018
Time deposits	\$ 30,276	\$ 26,522
Secured long-term financings	\$ 68	\$ 632
Unsecured long-term borrowings	\$ 6,205	\$ 6,755
Interest payments	\$ 2,473	\$ 2,292

The table below presents our contractual obligations by expiration.

<i>\$ in millions</i>	As of September 2019			
	Remainder of 2019	2020 - 2021	2022 - 2023	2024 - Thereafter
Time deposits	\$ -	\$ 9,355	\$ 13,454	\$ 7,467
Secured long-term financings	\$ -	\$ -	\$ -	\$ 68
Unsecured long-term borrowings	\$ -	\$ 1,000	\$ 955	\$ 4,250
Interest payments	\$ 171	\$ 1,320	\$ 735	\$ 247

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 10 and 15 to the consolidated financial statements for further information about our short-term borrowings.
- Obligations that are repayable prior to maturity at our option are reflected at their contractual maturity dates and obligations that are redeemable prior to maturity at the option of the holders are reflected at the earliest dates such options become exercisable.
- Interest payments represents estimated future contractual interest payments related to unsecured long-term borrowings and time deposits based on applicable interest rates as of September 2019.

Management's Discussion and Analysis

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 areas of risk and our risk management processes, see "Risk Factors," "Overview and Structure of Risk Management," "Liquidity Risk Management," "Market Risk Management," "Credit Risk Management," "Operational Risk Management" and "Model Risk Management" in Parts I and II of the 2018 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 2018 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 September 2019 and December 2018 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.

	Average for the Three Months Ended	
	September 2019	June 2019
<i>\$ in millions</i>		
Overnight cash deposits	\$ 30,495	\$ 34,005
U.S. government obligations	50,020	40,889
U.S. agency obligations	6,245	7,653
Non-U.S. government obligations	251	216
Total	\$ 87,011	\$ 82,763

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 September 2019, 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 September 2019		
	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.

Management's Discussion and Analysis

Market Risk Management

Overview

Market risk is the risk of loss in the value of our positions, as well as certain other financial assets and financial liabilities, due to changes in market conditions. We hold positions primarily for market making for our clients and for our lending activities. Our positions, therefore, change based on client demands and our lending opportunities.

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 2018 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 by risk category.

\$ in millions	Three Months Ended			Nine Months Ended September	
	September	June	September	2019	2018
	2019	2019	2018		
Interest rates	\$ 31	\$ 25	\$ 17	\$ 26	\$ 19
Currency rates	6	4	3	4	4
Diversification effect	(6)	(4)	(3)	(4)	(4)
Total	\$ 31	\$ 25	\$ 17	\$ 26	\$ 19

Our average daily VaR increased to \$31 million for the third quarter of 2019 from \$25 million for the second quarter of 2019, due to increases in the interest rates category. The overall increase was primarily due to higher levels of volatility.

Our average daily VaR increased to \$31 million for the third quarter of 2019 from \$17 million for the third quarter of 2018, due to increases in the interest rates category. The overall increase was primarily due to higher levels of volatility.

Our average daily VaR increased to \$26 million for the nine months ended September 2019 from \$19 million for the nine months ended September 2018, due to increases in the interest rates category. The overall increase was due to higher levels of volatility.

The table below presents our period-end VaR by risk category.

\$ in millions	As of		
	September 2019	June 2019	September 2018
Interest rates	\$ 34	\$ 28	\$ 23
Currency rates	3	4	3
Diversification effect	(6)	(4)	(4)
Total	\$ 31	\$ 28	\$ 22

Our period-end VaR increased to \$31 million as of September 2019 from \$28 million as of June 2019, due to increases in the interest rates category. The overall increase was primarily due to higher levels of volatility.

Our period-end VaR increased to \$31 million as of September 2019 from \$22 million as of September 2018, due to increases in the interest rates category. The overall increase was primarily due to higher levels of volatility and increased exposures.

During the third quarter of 2019, our total VaR risk limit was not exceeded, raised or reduced.

The table below presents our high and low VaR.

\$ in millions	Three Months Ended					
	September 2019		June 2019		September 2018	
	High	Low	High	Low	High	Low
Categories						
Interest rates	\$ 46	\$ 25	\$ 36	\$ 21	\$ 25	\$ 15
Currency rates	\$ 25	\$ 2	\$ 6	\$ 3	\$ 4	\$ 2
Bank						
VaR	\$ 45	\$ 24	\$ 37	\$ 21	\$ 24	\$ 14

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		
	September 2019	June 2019	September 2018
Debt	\$ 854	\$ 832	\$ 739
Equity	6	7	40
Total	\$ 860	\$ 839	\$ 779

Management's Discussion and Analysis

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 statements of financial condition in financial instruments owned. See Note 6 to the consolidated financial statements for further information about cash instruments.
- These measures do not reflect the diversification effect across asset categories or across other market risk measures.

Interest Rate Sensitivity. The carrying value of loans receivable that are held for investment, net of allowance for loan losses was \$63.10 billion as of September 2019 and \$61.73 billion as of December 2018, substantially all of which had floating interest rates. The estimated sensitivity to a 100 basis point increase in interest rates on such loans was \$500 million as of September 2019 and \$481 million as of December 2018, of additional interest income over a twelve-month period, which does not take into account the potential impact of an increase in costs to fund such loans. See Note 9 to the consolidated financial statements for further information about loans receivable that are held for investment.

Other Market Risk Considerations

As of both September 2019 and December 2018, 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 17 to the consolidated financial statements for further information about such lending commitments.

In addition, we make investments in securities that are accounted for as available-for-sale and included in financial instruments owned in the consolidated statements of financial condition. See Note 6 to the consolidated financial statements for further information.

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 (i.e., securities purchased under agreements to resell (resale agreements) and repurchase agreements) and customer and other receivables. See "Credit Risk Management" in Part II of the 2018 Annual Report for further information about our credit risk management process.

Credit Exposures

As of September 2019, our aggregate credit exposure increased as compared with December 2018, 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 2018, primarily reflecting an increase in non-investment-grade loans and lending commitments. Our credit exposure to counterparties that defaulted during the nine months ended September 2019 was higher as compared with our credit exposure to counterparties that defaulted during the same prior year period, and substantially all of such exposure was related to loans and lending commitments. Our credit exposure to counterparties that defaulted during the nine months ended September 2019 remained low, representing less than 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.

Management's Discussion and Analysis

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.

\$ in millions	As of	
	September 2019	December 2018
OTC derivative assets	\$ 9,668	\$ 7,265
Collateral (not netted under U.S. GAAP)	(2,576)	(1,420)
Net credit exposure	\$ 7,092	\$ 5,845
Industry		
Consumer, Retail & Healthcare	3%	2%
Diversified Industrials	7%	6%
Financial Institutions	12%	17%
Funds	8%	14%
Municipalities & Nonprofit	29%	26%
Natural Resources & Utilities	15%	7%
Sovereign	8%	10%
Technology, Media & Telecommunications	12%	11%
Other (including Special Purpose Vehicles)	6%	7%
Total	100%	100%
Region		
Americas	71%	71%
Europe, Middle East and Africa	27%	27%
Asia	2%	2%
Total	100%	100%

In the table above:

- OTC derivative assets, included in the consolidated statements of financial condition, 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, which management considers when determining credit risk, but such collateral is not eligible for netting under U.S. GAAP.

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

\$ in millions	Investment-Grade	Non-Investment-Grade / Unrated	Total
As of September 2019			
Less than 1 year	\$ 5,615	\$ 313	\$ 5,928
1 - 5 years	11,474	879	12,353
Greater than 5 years	28,670	1,900	30,570
Total	45,759	3,092	48,851
Netting	(41,204)	(555)	(41,759)
Net credit exposure	\$ 4,555	\$ 2,537	\$ 7,092
As of December 2018			
Less than 1 year	\$ 3,732	\$ 416	\$ 4,148
1 - 5 years	8,286	357	8,643
Greater than 5 years	22,210	900	23,110
Total	34,228	1,673	35,901
Netting	(29,809)	(247)	(30,056)
Net credit exposure	\$ 4,419	\$ 1,426	\$ 5,845

In the table above:

- Tenor is based on remaining contractual maturity.
- Netting includes counterparty netting across tenor categories and cash and securities collateral that management considers 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 September 2019					
Less than 1 year	\$ 122	\$ 530	\$ 3,205	\$ 1,758	\$ 5,615
1 - 5 years	33	746	6,873	3,822	11,474
Greater than 5 years	576	3,332	17,086	7,676	28,670
Total	731	4,608	27,164	13,256	45,759
Netting	(301)	(3,521)	(25,249)	(12,133)	(41,204)
Net credit exposure	\$ 430	\$ 1,087	\$ 1,915	\$ 1,123	\$ 4,555
As of December 2018					
Less than 1 year	\$ 560	\$ 717	\$ 1,924	\$ 531	\$ 3,732
1 - 5 years	97	713	4,953	2,523	8,286
Greater than 5 years	444	1,788	14,674	5,304	22,210
Total	1,101	3,218	21,551	8,358	34,228
Netting	(304)	(2,077)	(19,545)	(7,883)	(29,809)
Net credit exposure	\$ 797	\$ 1,141	\$ 2,006	\$ 475	\$ 4,419

Management's Discussion and Analysis

\$ in millions	Non-Investment-Grade / Unrated		
	BB or lower	Unrated	Total
As of September 2019			
Less than 1 year	\$ 230	\$ 83	\$ 313
1 - 5 years	875	4	879
Greater than 5 years	1,864	36	1,900
Total	2,969	123	3,092
Netting	(527)	(28)	(555)
Net credit exposure	\$ 2,442	\$ 95	\$ 2,537
As of December 2018			
Less than 1 year	\$ 391	\$ 25	\$ 416
1 - 5 years	354	3	357
Greater than 5 years	891	9	900
Total	1,636	37	1,673
Netting	(246)	(1)	(247)
Net credit exposure	\$ 1,390	\$ 36	\$ 1,426

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.

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	
	September 2019	December 2018
Loans and Lending Commitments	\$ 162,254	\$ 157,297
Industry		
Consumer, Retail & Healthcare	20%	17%
Diversified Industrials	14%	15%
Financial Institutions	7%	9%
Funds	4%	4%
Natural Resources & Utilities	16%	15%
Real Estate	11%	9%
Technology, Media & Telecommunications	15%	18%
Other (including Special Purpose Vehicles)	13%	13%
Total	100%	100%
Region		
Americas	84%	84%
Europe, Middle East and Africa	14%	14%
Asia	2%	2%
Total	100%	100%
Credit Quality (Credit Rating Equivalent)		
AAA	1%	1%
AA	5%	6%
A	15%	16%
BBB	33%	34%
BB or lower	46%	43%
Total	100%	100%

- **PWM, Residential Real Estate and Other Lending.** PWM loans and lending commitments are extended by the private bank, 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 unsecured consumer loans and commitments to purchase such loans and securities.

Management's Discussion and Analysis

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

<i>\$ in millions</i>	PWM	Residential Real Estate and Other
As of September 2019		
Credit Exposure	\$ 25,385	\$ 4,802
Americas	99%	100%
Europe, Middle East and Africa	1%	–
Total	100%	100%
As of December 2018		
Credit Exposure	\$ 24,662	\$ 4,282
Americas	99%	100%
Europe, Middle East and Africa	1%	–
Total	100%	100%

- **Consumer Lending.** We originate unsecured consumer loans.

The table below presents our credit exposure from originated unsecured consumer loans and the concentration by the five most concentrated U.S. states.

<i>\$ in millions</i>	Consumer
As of September 2019	
Credit Exposure	\$ 5,525
California	13%
Texas	9%
New York	7%
Florida	7%
Illinois	4%
Other	60%
Total	100%
As of December 2018	
Credit Exposure	\$ 4,536
California	12%
Texas	9%
New York	7%
Florida	7%
Illinois	4%
Other	61%
Total	100%

See Note 9 to the consolidated financial statements for further information about the credit quality indicators of consumer 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 \$835 million as of September 2019 and \$1.07 billion as of December 2018, reflecting both netting agreements and collateral that management considers when determining credit risk.

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	
	September 2019	December 2018
Other Credit Exposures	\$ 4,204	\$ 4,929
Industry		
Financial Institutions	88%	96%
Funds	5%	2%
Sovereign	3%	–
Other (including Special Purpose Vehicles)	4%	2%
Total	100%	100%
Region		
Americas	14%	5%
Europe, Middle East and Africa	83%	94%
Asia	3%	1%
Total	100%	100%
Credit Quality (Credit Rating Equivalent)		
AAA	3%	1%
AA	84%	94%
A	8%	3%
BBB	3%	1%
BB or lower	2%	1%
Total	100%	100%

The table above reflects collateral that management considers when determining credit risk.

Management's Discussion and Analysis

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 2018 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 financial liabilities, to monitor and manage our risk, and to measure and monitor our regulatory capital. See "Model Risk Management" in Part II of the 2018 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 mortgage-related contingencies as set forth in both Notes 17 and 23 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 U.S. or non-U.S. banking and financial regulation, (vi) the estimated impact of new accounting standards, including the CECL model, (vii) GS Group's preparations following Brexit, including its plan to manage a hard Brexit scenario, (viii) the replacement of LIBOR and other IBORs and the objectives of our program related to the transition from IBORs to alternative risk-free reference rates, (ix) the adequacy of our allowance for credit losses, (x) our engagement in transaction banking and credit card activities and (xi) expenses we may incur, including those associated with investing in our consumer 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 and financial condition may differ, possibly materially, from the anticipated results and financial condition indicated in these forward-looking statements. Important factors that could cause our actual results and financial condition to differ from those indicated in these statements include, among others, those described below and in "Risk Factors" and "Cautionary Statement Regarding Forward-Looking Statements" in Part I of the 2018 Annual Report.

Statements about the estimated impact of CECL are subject to the risk that the actual impact may differ, possibly materially, from that currently expected due to, among other things, additional guidance from accounting or regulatory agencies, management judgments, changes in the economic environment or the size and type of loan portfolios we hold when we adopt CECL, or changes to our credit loss models in connection with validating data inputs and developing the policies, systems and controls required to implement CECL.

Statements about the timing, costs and benefits of our strategic initiatives and activities are subject to the risk that the actual timing, costs, benefits and effects may differ, possibly materially, from what is currently anticipated due to, among other things, changes in our ability to execute these initiatives. Credit cards and transaction banking are new activities and are subject to the risks associated with new activities, including the ability to develop new and competitive systems and processes, and hire and retain the necessary personnel.