FEDERAL HOME LOAN BANKS

Combined Financial Report for the Quarterly Period Ended March 31, 2020

This Combined Financial Report provides financial information on the Federal Home Loan Banks. The Federal Home Loan Banks issue consolidated bonds and consolidated discount notes (collectively referred to as consolidated obligations). Consolidated obligations are joint and several obligations of all Federal Home Loan Banks, which means that each individual Federal Home Loan Bank is responsible for the payment of principal and interest on all consolidated obligations. Each Federal Home Loan Bank is a separately chartered entity with its own board of directors and management. There is no centralized, system-wide management or oversight by a single board of directors of the Federal Home Loan Banks.

Federal Home Loan Bank consolidated obligations are not obligations of the United States and are not guaranteed by the United States. No person other than the Federal Home Loan Banks will have any obligations or liability with respect to consolidated obligations.

The Securities Act of 1933, as amended, does not require the registration of consolidated obligations; therefore, no registration statement with respect to consolidated obligations has been filed with the U.S. Securities and Exchange Commission. Neither the U.S. Securities and Exchange Commission, nor the Federal Housing Finance Agency, nor any state securities commission has approved or disapproved of these consolidated obligations or determined if this report is truthful or complete.

Carefully consider the risk factors provided in this and other Combined Financial Reports of the Federal Home Loan Banks (collectively referred to as Combined Financial Reports). Neither the Combined Financial Reports nor any offering materials provided by, or on behalf of, the Federal Home Loan Banks describe all the risks of investing in consolidated obligations. Investors should consult with their financial and legal advisors about the risks of investing in consolidated obligations.

The financial information contained in this Combined Financial Report is for the quarterly period ended March 31, 2020. This Combined Financial Report should be read in conjunction with the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, issued on March 27, 2020. Combined Financial Reports are available on the Federal Home Loan Banks Office of Finance web site at fhlb-of.com. This web site address is provided as a matter of convenience only, and its contents are not made part of or incorporated by reference into this report.

Investors should direct questions about consolidated obligations or the Combined Financial Reports to the Federal Home Loan Banks Office of Finance at (703) 467-3600.

This Combined Financial Report was issued on May 15, 2020.

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EXPLANATORY STATEMENT ABOUT
FEDERAL HOME LOAN BANKS COMBINED FINANCIAL REPORT

The Federal Home Loan Banks (FHLBanks) are government-sponsored enterprises (GSEs), federally-chartered but privately capitalized and independently managed. The FHLBanks together with the Federal Home Loan Banks Office of Finance (Office of Finance) comprise the FHLBank System.

The Office of Finance is responsible for preparing the Combined Financial Reports of the FHLBanks. Each FHLBank is responsible for the financial information and underlying data it provides to the Office of Finance for inclusion in the Combined Financial Reports. The Office of Finance is responsible for combining the financial information it receives from each of the FHLBanks.

The Combined Financial Reports are intended to be used by investors in consolidated obligations (consolidated bonds and consolidated discount notes) of the FHLBanks as these are joint and several obligations of all FHLBanks. This Combined Financial Report is provided using combination accounting principles generally accepted in the United States of America. This combined presentation in no way indicates that these assets and liabilities are under joint management and control as each individual FHLBank manages its operations independently. Therefore, each FHLBank's business, risk profile, financial condition, and results of operations will vary from FHLBank to FHLBank.

Because of the FHLBank System's structure, the Office of Finance does not prepare consolidated financial statements. Consolidated financial statements are generally considered to be appropriate when a controlling financial interest rests directly or indirectly in one of the enterprises included in the consolidation, which is the case in a typical holding company structure where there is a parent corporation that owns, directly or indirectly, one or more subsidiaries. However, the FHLBanks do not have a parent company that controls each of the FHLBanks. Instead, each of the FHLBanks is owned by its respective members and certain former members.

Each FHLBank is a separately chartered cooperative with its own board of directors and management and is responsible for establishing its own accounting and financial reporting policies in accordance with accounting principles generally accepted in the United States of America (GAAP). Although the FHLBanks work together in an effort to achieve consistency on significant accounting policies, the FHLBanks' accounting and financial reporting policies and practices may vary because alternative policies and presentations are permitted under GAAP in certain circumstances. Statements in this report may be qualified by a term such as "generally," "primarily," "typically," or words of similar meaning to indicate that the statement is generally applicable, but may not be applicable to all FHLBanks or their transactions as a result of their different business practices and accounting and financial reporting policies under GAAP.

An investor may not be able to obtain easily a system-wide view of the FHLBanks' business, risk profile, and financial information because there is no centralized, system-wide management or centralized board of director oversight of the individual FHLBanks. This decentralized structure is not conducive to preparing disclosures from a system-wide view in the same manner as is generally expected of U.S. Securities and Exchange Commission (SEC) registrants. For example, a conventional Management's Discussion and Analysis is not provided in this Combined Financial Report; instead, this report includes a "Financial Discussion and Analysis" prepared by the Office of Finance using information provided by each FHLBank.

Each FHLBank is subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, and must file periodic reports and other information with the SEC. Each FHLBank prepares an annual financial report, filed on SEC Form 10-K, quarterly financial reports, filed on SEC Form 10-Q, and current reports, filed on SEC Form 8-K. Those reports contain additional information that is not contained in this Combined Financial Report. An investor should review those reports and other available information on individual FHLBanks to obtain additional detail on each FHLBank's business, risk profile, financial condition, results of operations, and accounting and financial reporting policies. Periodic reports and other information filed by each FHLBank with the SEC are made available on its web site and on the SEC's web site at sec.gov. References to web sites and to reports and other information filed by individual FHLBanks with the SEC are provided as a matter of convenience only, and their contents are not made part of or incorporated by reference into this report.

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF CONDITION
(Unaudited)

(dollars in millions, except par value)	March 31, 2020	December 31, 2019
Assets		
Cash and due from banks	$ 20,318	$ 4,960
Interest-bearing deposits *(Note 3)*	15,730	14,429
Securities purchased under agreements to resell *(Note 3)*	20,294	70,094
Federal funds sold *(Note 3)*	74,356	51,357
Investment securities *(Note 3)*		
Trading securities	60,028	54,854
Available-for-sale securities, net, amortized cost of $107,389 and $103,179	106,283	104,033
Held-to-maturity securities, net, fair value of $74,886 and $80,946	73,994	80,228
Total investment securities	240,305	239,115
Advances, includes $7,208 and $7,183 at fair value held under fair value option *(Note 4)*	806,944	641,519
Mortgage loans held for portfolio, net *(Note 5)*	74,562	72,492
Accrued interest receivable	1,874	1,971
Derivative assets, net *(Note 6)*	3,336	1,731
Other assets, net	1,384	1,445
Total assets	$ 1,259,103	$ 1,099,113
Liabilities		
Deposits *(Note 7)*	$ 15,053	$ 10,404
Consolidated obligations *(Note 8)*		
Discount notes, includes $41,205 and $32,539 at fair value held under fair value option	576,593	404,035
Bonds, includes $15,356 and $25,212 at fair value held under fair value option	599,817	622,161
Total consolidated obligations	1,176,410	1,026,196
Mandatorily redeemable capital stock	1,726	1,378
Accrued interest payable	1,596	1,791
Affordable Housing Program payable	1,080	1,088
Derivative liabilities, net *(Note 6)*	194	77
Other liabilities	3,120	2,752
Total liabilities	1,199,179	1,043,686
Commitments and contingencies *(Note 12)*		
Capital *(Note 9)*		
Capital stock		
Class B putable ($100 par value) issued and outstanding shares	40,589	34,047
Class A putable ($100 par value) issued and outstanding shares	448	448
Total capital stock	41,037	34,495
Retained earnings		
Unrestricted	15,701	15,686
Restricted	5,028	4,902
Total retained earnings	20,729	20,588
Accumulated other comprehensive income (loss) *(Note 10)*	(1,842)	344
Total capital	59,924	55,427
Total liabilities and capital	$ 1,259,103	$ 1,099,113

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

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF INCOME
(Unaudited)

(dollars in millions)	Three Months Ended March 31, 2020	2019
Interest income		
Advances	$ 2,892	$ 4,772
Interest-bearing deposits	66	84
Securities purchased under agreements to resell	177	285
Federal funds sold	227	459
Investment securities		
Trading securities	308	128
Available-for-sale securities	491	668
Held-to-maturity securities	465	664
Total investment securities	1,264	1,460
Mortgage loans held for portfolio	566	562
Other	1	2
Total interest income	5,193	7,624
Interest expense		
Consolidated obligations		
Discount notes	1,523	2,561
Bonds	2,710	3,733
Total consolidated obligations	4,233	6,294
Deposits	27	40
Mandatorily redeemable capital stock	18	16
Total interest expense	4,278	6,350
Net interest income	915	1,274
Provision (reversal) for credit losses	43	1
Net interest income after provision (reversal) for credit losses	872	1,273
Non-interest income		
Net gains (losses) on investment securities	1,174	105
Net gains (losses) on financial instruments held under fair value option	56	23
Net gains (losses) on derivatives and hedging activities	(1,121)	(108)
Other, net	83	43
Total non-interest income (loss)	192	63
Non-interest expense		
Compensation and benefits	212	180
Other operating expenses	112	107
Federal Housing Finance Agency	19	18
Office of Finance	17	15
Other	5	14
Total non-interest expense	365	334
Net income before assessments	699	1,002
Affordable Housing Program assessments	72	102
Net income	$ 627	$ 900

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

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF COMPREHENSIVE INCOME
(Unaudited)

	Three Months Ended March 31,	
(dollars in millions)	**2020**	**2019**
Net income	$ 627	$ 900
Other comprehensive income		
Net unrealized gains (losses) on available-for-sale securities	(1,918)	230
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	29	19
Net unrealized gains (losses) relating to hedging activities	(291)	(70)
Pension and postretirement benefits	(6)	6
Total other comprehensive income (loss)	(2,186)	185
Comprehensive income (loss)	$ (1,559)	$ 1,085

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

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF CAPITAL
THREE MONTHS ENDED MARCH 31, 2020 AND 2019
(Unaudited)

	Capital Stock - Putable			
	Class B		Class A	
(dollars and shares in millions)	Shares	Par Value	Shares	Par Value
Balance, December 31, 2019	340	$ 34,047	4	$ 448
Adjustment for cumulative effect of accounting change	—	—	—	—
Comprehensive income (loss)	—	—	—	—
Proceeds from issuance of capital stock	174	17,379	—	—
Repurchases/redemptions of capital stock	(100)	(10,109)	—	—
Net shares reclassified (to)/from mandatorily redeemable capital stock	(6)	(575)	(2)	(193)
Transfers between Class B and Class A shares	(2)	(193)	2	193
Dividends on capital stock				
Cash	—	—	—	—
Stock	—	40	—	—
Balance, March 31, 2020	406	$ 40,589	4	$ 448
Balance, December 31, 2018	383	$ 38,251	2	$ 247
Adjustment for cumulative effect of accounting changes	—	—	—	—
Comprehensive income (loss)	—	—	—	—
Proceeds from issuance of capital stock	89	8,893	—	—
Repurchases/redemptions of capital stock	(113)	(11,254)	(3)	(338)
Net shares reclassified (to)/from mandatorily redeemable capital stock	—	(39)	—	(18)
Transfers between Class B and Class A shares	(3)	(307)	3	307
Dividends on capital stock				
Cash	—	—	—	—
Stock	—	43	—	—
Balance, March 31, 2019	356	$ 35,587	2	$ 198

Capital Stock - Putable							
Total		Retained Earnings			Accumulated Other Comprehensive Income (Loss)	Total Capital
Shares	Par Value	Unrestricted	Restricted	Total		
344	$ 34,495	$ 15,686	$ 4,902	$ 20,588	$ 344	$ 55,427
—	—	(28)	—	(28)	—	(28)
—	—	501	126	627	(2,186)	(1,559)
174	17,379	—	—	—	—	17,379
(100)	(10,109)	—	—	—	—	(10,109)
(8)	(768)	—	—	—	—	(768)
—		—	—	—	—	—
—	—	(418)	—	(418)	—	(418)
—	40	(40)	—	(40)	—	—
410	$ 41,037	$ 15,701	$ 5,028	$ 20,729	$ (1,842)	$ 59,924
385	$ 38,498	$ 15,241	$ 4,263	$ 19,504	$ 342	$ 58,344
—	—	15	—	15	—	15
—	—	722	178	900	185	1,085
89	8,893	—	—	—	—	8,893
(116)	(11,592)	—	—	—	—	(11,592)
—	(57)	—	—	—	—	(57)
—	—	—	—	—	—	—
—	—	(527)	—	(527)	—	(527)
—	43	(43)	—	(43)	—	—
358	$ 35,785	$ 15,408	$ 4,441	$ 19,849	$ 527	$ 56,161

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

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF CASH FLOWS
(Unaudited)

	Three Months Ended March 31,	
(dollars in millions)	2020	2019
Operating activities		
Net income	$ 627	$ 900
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	(9)	52
Net change in derivatives and hedging activities	(7,124)	(1,684)
Net change in fair value adjustments on trading securities	(975)	(94)
Net change in fair value adjustments on financial instruments held under fair value option	(56)	(23)
Other adjustments, net	(102)	31
Net change in		
Trading securities	150	(602)
Accrued interest receivable	83	(239)
Other assets	40	76
Accrued interest payable	(201)	196
Other liabilities	(97)	(59)
Total adjustments	(8,291)	(2,346)
Net cash provided by (used in) operating activities	(7,664)	(1,446)
Investing activities		
Net change in		
Interest-bearing deposits	(6,304)	7,085
Securities purchased under agreements to resell	49,800	(6,330)
Federal funds sold	(22,999)	(21,141)
Trading securities		
Proceeds	10,162	12,218
Purchases	(14,264)	(24,512)
Available-for-sale securities		
Proceeds	5,250	6,182
Purchases	(4,197)	(7,848)
Held-to-maturity securities		
Proceeds	8,234	5,513
Purchases	(1,971)	(3,159)
Advances		
Repaid	1,922,264	2,423,023
Originated	(2,080,500)	(2,364,379)
Mortgage loans held for portfolio		
Principal collected	3,535	1,402
Purchases	(5,640)	(2,967)
Other investing activities, net	(11)	(9)
Net cash provided by (used in) investing activities	(136,641)	25,078

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF CASH FLOWS (continued)
(Unaudited)

	Three Months Ended March 31,	
(dollars in millions)	**2020**	**2019**
Financing activities		
Net change in deposits and pass-through reserves, and other financing activities	$ 4,637	$ 558
Net proceeds (payments) on derivative contracts with financing element	(326)	(74)
Net proceeds from issuance of consolidated obligations		
Discount notes	1,357,780	1,787,253
Bonds	183,335	129,520
Payments for maturing and retiring consolidated obligations		
Discount notes	(1,185,363)	(1,806,335)
Bonds	(206,829)	(131,225)
Proceeds from issuance of capital stock	17,379	8,893
Payments for repurchases/redemptions of capital stock	(10,109)	(11,592)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(423)	(86)
Cash dividends paid	(418)	(527)
Net cash provided by (used in) financing activities	159,663	(23,615)
Net increase (decrease) in cash and due from banks	15,358	17
Cash and due from banks at beginning of the period	4,960	522
Cash and due from banks at end of the period	$ 20,318	$ 539
Supplemental disclosures		
Interest paid	$ 4,515	$ 6,057
Affordable Housing Program payments, net	$ 80	$ 78
Transfer of held-to-maturity securities to available-for-sale securities with the adoption of the new hedge accounting guidance	$ —	$ 1,597

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

NOTES TO COMBINED FINANCIAL STATEMENTS (Unaudited)

Background Information

These financial statements present the combined financial position and combined results of operations of the Federal Home Loan Banks (FHLBanks). The FHLBanks are government-sponsored enterprises (GSEs) that were organized under the Federal Home Loan Bank Act of 1932, as amended (FHLBank Act), to serve the public by enhancing the availability of credit for residential mortgages and targeted community development. They are financial cooperatives that provide a readily available, competitively-priced source of funds to their member institutions. Each FHLBank operates as a separate entity with its own management, employees, and board of directors. The FHLBanks do not have any special purpose entities or any other type of off-balance sheet conduits.

The Federal Housing Finance Agency (FHFA) is the independent Federal regulator of the FHLBanks, Federal Home Loan Mortgage Corporation (Freddie Mac), and Federal National Mortgage Association (Fannie Mae). The FHFA's stated mission is to ensure that the housing GSEs operate in a safe and sound manner so that they serve as a reliable source of liquidity and funding for housing finance and community investment.

The Office of Finance is a joint office of the FHLBanks established to facilitate the issuance and servicing of the debt instruments of the FHLBanks, known as consolidated obligations (consolidated bonds and consolidated discount notes), and to prepare the quarterly and annual combined financial reports of the FHLBanks. As provided by the FHLBank Act, and applicable regulations, consolidated obligations are backed only by the financial resources of the FHLBanks. Consolidated obligations are the primary source of funds for the FHLBanks in addition to deposits, other borrowings, and capital stock issued to members. The FHLBanks primarily use these funds to provide advances to members. Certain FHLBanks also use these funds to acquire mortgage loans from members (acquired member assets) through their respective FHLBank's Mortgage Purchase Program (MPP) or the Mortgage Partnership Finance® (MPF®) Program. "Mortgage Partnership Finance," "MPF," and "MPF Xtra" are registered trademarks of the FHLBank of Chicago. In addition, some FHLBanks offer correspondent services to their member institutions, including wire transfer, security safekeeping, and settlement services.

Unless otherwise stated, dollar amounts disclosed in this Combined Financial Report represent values rounded to the nearest million. Dollar amounts rounding to less than one million are not reflected in this Combined Financial Report.

Note 1 - Summary of Significant Accounting Policies

These unaudited quarterly combined financial statements do not include all disclosures associated with annual combined financial statements, and therefore should be read in conjunction with the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019. In addition, the results of operations for interim periods are not necessarily indicative of the results to be expected for the year ending December 31, 2020.

Basis of Presentation

These combined financial statements include the financial statements and records of the FHLBanks that are prepared in accordance with generally accepted accounting principles in the United States of America (GAAP). The information contained in these combined financial statements is not audited. Each FHLBank's financial statements, in the opinion of its management, contain all the necessary adjustments for a fair statement of its interim financial information.

Principles of Combination. Transactions between the FHLBanks have been eliminated in accordance with combination accounting principles similar to consolidation under GAAP. (See the *Condensed Combining Schedules* for the combining adjustments, consisting of interbank eliminations and rounding adjustments, made to the combined financial statements.)

Segment Reporting. FHFA regulations consider each FHLBank to be a segment. However, there is no single chief operating decision maker because there is no centralized, system-wide management or centralized board of director oversight of the individual FHLBanks. (See the *Condensed Combining Schedules* for segment information.)

Reclassifications to Prior Period Amounts. Cash flow amounts in the Combined Statement of Cash Flows for the prior period were reclassified to reflect short-term investment security purchases and proceeds on a gross, rather than net, basis. These reclassifications, made to conform to the financial statement presentation for the three months ended March 31, 2020, were not material.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires each FHLBank's management to make subjective assumptions and estimates that may affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of income and expense. The most significant of these estimates include those used in conjunction with fair value estimates and derivatives and hedging activities. Actual results could differ from these estimates significantly.

Financial Instruments Meeting Netting Requirements

The FHLBanks present certain financial instruments on a net basis when they have a legal right of offset and all other requirements for netting are met (collectively referred to as the netting requirements). For these financial instruments, each of the affected FHLBanks has elected to offset its asset and liability positions, as well as cash collateral received or pledged, when it has met the netting requirements.

The net exposure for these financial instruments can change on a daily basis; therefore, there may be a delay between the time this exposure change is identified and additional collateral is requested, and the time when this collateral is received or pledged. Likewise, there may be a delay for excess collateral to be returned. For derivative instruments that meet the netting requirements, any excess cash collateral received or pledged is recognized as a derivative liability or derivative asset. (See *Note 6 - Derivatives and Hedging Activities* for additional information regarding these agreements.)

Securities purchased under agreements to resell are also subject to netting requirements. Based on the fair value of the related collateral held, securities purchased under agreements to resell were fully collateralized for the periods presented. There were no offsetting liabilities related to these securities at March 31, 2020 or December 31, 2019.

Update to Significant Accounting Policies

Beginning January 1, 2020, the FHLBanks adopted new accounting guidance pertaining to the measurement of credit losses on financial instruments that requires a financial asset or group of financial assets measured at amortized cost to be presented at the net amount expected to be collected. The new guidance also requires credit losses relating to these financial instruments as well as available-for-sale securities to be recorded through an allowance for credit losses. Key changes as compared to prior accounting guidance are detailed below. Consistent with the modified retrospective method of adoption, the prior period has not been revised to conform to the new basis of accounting. (See *Note 1 - Summary of Significant Accounting Policies* on pages F-12 to F-22 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for information on the prior accounting treatment.)

Interest-Bearing Deposits, Securities Purchased under Agreements to Resell, and Federal Funds Sold

The FHLBanks invest in interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold. These investments provide short-term liquidity and are carried at amortized cost. Accrued interest receivable is recorded separately on the Combined Statement of Condition.

These investments are evaluated quarterly for expected credit losses. If applicable, an allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. The FHLBanks use the collateral maintenance provision practical expedient, which allows expected credit losses to be measured based on the difference between the fair value of the collateral and the investment's amortized cost, for securities purchased under agreements to resell. Consequently, a credit loss would be recognized if there is a collateral shortfall which the FHLBanks do not believe the counterparty will replenish in accordance with its contractual terms. The credit loss would be limited to the difference between the fair value of the collateral and the investment’s amortized cost.

See *Note 3 - Investments* for details on the allowance methodologies relating to these investments.

Investment Securities

Available-for-Sale. For securities classified as available-for-sale (AFS), each FHLBank evaluates an individual security for impairment on a quarterly basis by comparing the security's fair value to its amortized cost. Accrued interest receivable is recorded separately on the Combined Statement of Condition. Impairment exists when the fair value of the investment is less than its amortized cost (i.e., in an unrealized loss position). In assessing whether a credit loss exists on an impaired security, an FHLBank considers whether there would be a shortfall in receiving all cash flows contractually due. When a shortfall is considered possible, an FHLBank compares the present value of cash flows to be collected from the security with the amortized cost basis of the security. If the present value of cash flows is less than amortized cost, an allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. The allowance is limited by the amount of the unrealized loss. The allowance for credit losses excludes uncollectible accrued interest receivable, which is measured separately.

If management intends to sell an impaired security classified as AFS, or more likely than not will be required to sell the security before expected recovery of its amortized cost basis, any allowance for credit losses is written off and the amortized cost basis is written down to the security's fair value at the reporting date with any incremental impairment reported in earnings as net gains (losses) on investment securities. If management does not intend to sell an impaired security classified as AFS and it is not more likely than not that management will be required to sell the debt security, then the credit portion of the difference is recognized as an allowance for credit losses and any remaining difference between the security's fair value and amortized cost is recorded as net unrealized gains (losses) on AFS securities within other comprehensive income (loss) (OCI).

Prior to January 1, 2020, credit losses were recorded as a direct write-down of the AFS security's carrying value. For improvements in cash flows of AFS securities, interest income follows the recognition pattern pursuant to the impairment guidance in effect prior to January 1, 2020 and recoveries of amounts previously written off are recorded when received. AFS securities with an other-than-temporary impairment (OTTI) recognized pursuant to the impairment guidance in effect prior to January 1, 2020 continue to follow the prior accounting until maturity or disposition. For improvements in impaired AFS securities with an allowance for credit losses recognized after the adoption of the new guidance, the allowance for credit losses associated with recoveries may be derecognized up to its full amount. Effective January 1, 2020, the net non-credit portion of OTTI gains (losses) on AFS securities was reclassified to net unrealized gains (losses) on AFS securities within OCI.

Held-to-Maturity. Securities that the FHLBanks have both the ability and intent to hold to maturity are classified as held-to-maturity (HTM) and are carried at amortized cost, which is original cost net of periodic principal repayments and amortization of premiums and accretion of discounts, adjusted for OTTI losses recorded prior to January 1, 2020. Accrued interest receivable is recorded separately on the Combined Statement of Condition.

HTM securities are evaluated quarterly for expected credit losses on a pool basis unless an individual assessment is deemed necessary because the securities do not possess similar risk characteristics. An allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. The allowance for credit losses excludes uncollectible accrued interest receivable, which is measured separately. Prior to January 1, 2020, credit losses were recorded as a direct write-down of the HTM security's carrying value.

For improvements in HTM securities impaired prior to January 1, 2020, interest income continues to follow the recognition pattern pursuant to the impairment guidance in effect prior to January 1, 2020 and recoveries of amounts previously written off are recorded when received. For improvements in impaired HTM securities with an allowance for credit losses recognized after the adoption of the new guidance, the allowance for credit losses associated with recoveries may be derecognized up to its full amount.

See *Note 3 - Investments* for details on the allowance methodologies relating to AFS and HTM securities.

Advances

Advances are reported either at amortized cost or at fair value when the fair value option has been elected. Advances recorded at amortized cost are reported net of premiums, discounts (including discounts related to the Affordable Housing Program (AHP)), unearned commitment fees, and hedging adjustments. Accrued interest receivable is recorded separately on the Combined Statement of Condition. The advances carried at amortized cost are evaluated quarterly for expected credit losses. If deemed necessary, an allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. (See *Note 4 - Advances* for details on the allowance methodology relating to advances.)

Mortgage Loans Held for Portfolio

Mortgage loans held for portfolio are reported at amortized cost, net of premiums, discounts, deferred loan fees or costs, hedging adjustments, and charge-offs. Accrued interest receivable is recorded separately on the Combined Statement of Condition. Each FHLBank performs a quarterly assessment of its mortgage loans held for portfolio to estimate expected credit losses. An allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses.

Each FHLBank measures expected credit losses on mortgage loans on a collective basis, pooling loans with similar risk characteristics. If a mortgage loan no longer shares risk characteristics with other loans, it is removed from the pool and evaluated for expected credit losses on an individual basis.

When developing the allowance for credit losses, an FHLBank measures the expected loss over the estimated remaining life of a mortgage loan, which also considers how the FHLBank's credit enhancements mitigate credit losses. If a loan is purchased at a discount, the discount does not offset the allowance for credit losses. The allowance excludes uncollectible accrued interest receivable, as the FHLBanks write off accrued interest receivable by reversing interest income if a mortgage loan is placed on nonaccrual status.

The FHLBanks do not purchase mortgage loans with credit deterioration present at the time of purchase. The FHLBanks include estimates of expected recoveries within the allowance for credit losses. (See *Note 5 - Mortgage Loans* for details on the allowance methodologies relating to mortgage loans.)

Off-Balance Sheet Credit Exposures

The FHLBanks evaluate their off-balance sheet credit exposures on a quarterly basis for expected credit losses. If deemed necessary, an allowance for expected credit losses on these off-balance sheet exposures is recorded in other liabilities with a corresponding adjustment to the provision (reversal) for credit losses. (See *Note 12 - Commitments and Contingencies* for details on the allowance methodologies relating to off-balance sheet credit exposures.)

Note 2 - Recently Issued and Adopted Accounting Guidance

The following tables provide a summary of recently issued and adopted accounting standards which may have an effect on the combined financial statements.

Recently Issued Accounting Guidance, Not Yet Adopted:

Accounting Standards Update (ASU)	Description	Effective Date	Effect on the Combined Financial Statements or Other Significant Matters
Facilitation of the Effects of Reference Rate Reform on Financial Reporting (ASU 2020-04)	This guidance provides temporary optional guidance to ease the potential burden in accounting for reference rate reform. The new guidance provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include: • contract modifications, • hedging relationships, and • sale or transfer of debt securities classified as HTM.	This guidance is effective immediately for the FHLBanks, and they may elect to apply the amendments prospectively through December 31, 2022.	The FHLBanks are in the process of evaluating the guidance, and its effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows has not yet been determined.
Changes to the Disclosure Requirements for Defined Benefit Plans (ASU 2018-14)	This guidance eliminates certain disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans to improve disclosure effectiveness, particularly for those requirements that are no longer considered cost beneficial. In addition, the guidance adds certain requirements identified as relevant, and clarifies specific requirements of certain disclosures.	This guidance becomes effective for the FHLBanks for the annual period ending December 31, 2020, and the annual periods thereafter. Early adoption is permitted.	The FHLBanks will adopt this guidance for the year ending December 31, 2020. The adoption of this guidance may affect the FHLBanks' disclosures but it will not have any effect on the FHLBanks' combined financial condition, combined results of operations, or combined cash flows.

Recently Adopted Accounting Guidance:

ASU	Description	Effective Date	Effect on the Combined Financial Statements or Other Significant Matters
Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract (ASU 2018-15)	This guidance aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license).	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2020.	The FHLBanks adopted this guidance as of January 1, 2020. The adoption of this guidance did not have a material effect on the FHLBanks' combined financial condition, combined results of operations, or combined cash flows.
Changes to the Disclosure Requirements for Fair Value Measurement (ASU 2018-13)	The objective of this guidance is to improve the effectiveness of disclosures in the fair value note. This guidance removes certain disclosure requirements for level 1, level 2, and level 3 of the fair value hierarchy, modifies other guidance, and adds new requirements.	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2020.	The FHLBanks adopted this guidance as of January 1, 2020. The adoption of this guidance affected the FHLBanks' disclosures. However, it did not have any effect on the FHLBanks' combined financial condition, combined results of operations, or combined cash flows.
Measurement of Credit Losses on Financial Instruments, as amended (ASU 2016-13)	The guidance replaces the current incurred loss impairment model and requires entities to measure expected credit losses based on consideration of a broad range of relevant information, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. The guidance also requires, among other things, credit losses relating to available-for-sale debt securities to be recorded through an allowance for credit losses and expands disclosure requirements.	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2020.	The FHLBanks adopted this guidance as of January 1, 2020. The adoption of this guidance had no effect on advances, U.S. obligations, or GSE investments, and an immaterial effect on the FHLBanks' remaining financial instruments given the specific terms, issuer guarantees, and collateralized/securitized nature of these instruments. As a result, the adoption of this guidance did not have a material effect on the FHLBanks' combined financial condition, combined results of operations, or combined cash flows.

Note 3 - Investments

The FHLBanks make short-term investments in interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold and may make other investments in debt securities, which are classified as either trading, AFS, or HTM.

Interest-Bearing Deposits, Securities Purchased under Agreements to Resell, and Federal Funds Sold

The FHLBanks invest in interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold to provide short-term liquidity. These investments are generally transacted with counterparties that have received a credit rating of triple-B or greater (investment grade) by a nationally recognized statistical rating organization. At March 31, 2020, none of these investments were with counterparties rated below triple-B and 8.5% of these investments, based on amortized cost, were with counterparties that are unrated. These may differ from any internal ratings of the investments by an FHLBank, if applicable.

Federal funds sold are unsecured loans that are generally transacted on an overnight term. FHFA regulations include a limit on the amount of unsecured credit an individual FHLBank may extend to a counterparty. At March 31, 2020 and December 31, 2019, all investments in interest-bearing deposits and federal funds sold were repaid or expected to be repaid according to the contractual terms. No allowance for credit losses was recorded for these assets at March 31, 2020 and December 31, 2019. The carrying values of interest-bearing deposits and federal funds sold exclude accrued interest receivable of $5 million and $3 million as of March 31, 2020, and $10 million and $12 million as of December 31, 2019.

Securities purchased under agreements to resell are short-term collateralized loans and are structured such that they are evaluated regularly to determine if the market value of the underlying securities decreases below the market value required as collateral (i.e., subject to collateral maintenance provisions). If so, the counterparty must place an equivalent amount of additional securities as collateral or remit an equivalent amount of cash, generally by the next business day. Based upon the collateral held as security and collateral maintenance provisions with their counterparties, each FHLBank determined that no allowance for credit losses was needed for its securities purchased under agreements to resell at March 31, 2020 and December 31, 2019. The carrying value of securities purchased under agreements to resell excludes accrued interest receivable of less than $1 million and $8 million as of March 31, 2020 and December 31, 2019.

Debt Securities

The FHLBanks invest in debt securities, which are classified as trading, AFS, or HTM. Within these investments, the FHLBanks are primarily subject to credit risk related to private-label mortgage-backed securities (private-label MBS or PLMBS) that are supported by underlying mortgage or asset-backed loans. The FHLBanks are prohibited by FHFA regulations from purchasing certain higher-risk securities, such as equity securities and debt instruments that are not investment quality, other than certain investments targeted at low-income persons or communities and instruments that experienced credit deterioration after their purchase by the FHLBanks.

Trading Securities

Table 3.1 - Trading Securities by Major Security Type
(dollars in millions)

Fair Value	March 31, 2020	December 31, 2019
Non-mortgage-backed securities		
Certificates of deposit	$ 275	$ —
U.S. Treasury obligations	55,213	50,478
Other U.S. obligations	140	150
GSE and Tennessee Valley Authority obligations	2,824	2,653
Other	271	268
Total non-mortgage-backed securities	58,723	53,549
Mortgage-backed securities		
U.S. obligations single-family MBS	8	9
GSE single-family MBS	55	60
GSE multifamily MBS	1,242	1,236
Total mortgage-backed securities	1,305	1,305
Total	$ 60,028	$ 54,854

Table 3.2 - Net Gains (Losses) on Trading Securities
(dollars in millions)

	Three Months Ended March 31,	
	2020	2019
Net unrealized gains (losses) on trading securities held at period-end	$ 1,025	$ 93
Net unrealized and realized gains (losses) on trading securities sold/matured during the period	22	12
Net gains (losses) on trading securities	$ 1,047	$ 105

Available-for-Sale Securities

Table 3.3 - Available-for-Sale (AFS) Securities by Major Security Type
(dollars in millions)

	March 31, 2020				
	Amortized Cost(1)	Allowance for Credit Losses(2)	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Non-mortgage-backed securities					
U.S. Treasury obligations	$ 9,699	$ —	$ 8	$ (1)	$ 9,706
Other U.S. obligations	3,613	—	38	(33)	3,618
GSE and Tennessee Valley Authority obligations	13,265	—	97	(112)	13,250
State or local housing agency obligations	1,082	—	11	(5)	1,088
Federal Family Education Loan Program ABS	3,139	—	9	(67)	3,081
Other	796	—	2	(20)	778
Total non-mortgage-backed securities	31,594	—	165	(238)	31,521
Mortgage-backed securities					
U.S. obligations single-family MBS	5,065	—	17	(33)	5,049
U.S. obligations multifamily MBS	248	—	1	—	249
GSE single-family MBS	7,358	—	55	(34)	7,379
GSE multifamily MBS	60,603	—	233	(1,287)	59,549
Private-label MBS	2,521	(42)	126	(69)	2,536
Total mortgage-backed securities	75,795	(42)	432	(1,423)	74,762
Total	$ 107,389	$ (42)	$ 597	$ (1,661)	$ 106,283

	December 31, 2019				
	Amortized Cost(1)	OTTI Recognized in AOCI(2)	Gross Unrealized Gains(3)	Gross Unrealized Losses(3)	Fair Value
Non-mortgage-backed securities					
Certificates of deposit	$ 1,410	$ —	$ —	$ —	$ 1,410
U.S. Treasury obligations	9,539	—	11	—	9,550
Other U.S. obligations	3,234	—	42	(2)	3,274
GSE and Tennessee Valley Authority obligations	12,598	—	199	(36)	12,761
State or local housing agency obligations	1,083	—	10	(10)	1,083
Federal Family Education Loan Program ABS	3,219	—	140	(7)	3,352
Other	750	—	10	(13)	747
Total non-mortgage-backed securities	31,833	—	412	(68)	32,177
Mortgage-backed securities					
U.S. obligations single-family MBS	5,271	—	30	(5)	5,296
U.S. obligations multifamily MBS	284	—	—	(1)	283
GSE single-family MBS	7,654	—	22	(22)	7,654
GSE multifamily MBS	54,863	—	310	(192)	54,981
Private-label MBS	3,274	(10)	378	—	3,642
Total mortgage-backed securities	71,346	(10)	740	(220)	71,856
Total	$ 103,179	$ (10)	$ 1,152	$ (288)	$ 104,033

(1) Includes adjustments made to the cost basis of an investment for accretion, amortization, net charge-offs, and/or fair value hedge accounting adjustments, and excludes accrued interest receivable of $259 million and $296 million at March 31, 2020 and December 31, 2019.

(2) With the adoption of changes to accounting standards on credit impairment on January 1, 2020, the FHLBanks are required to record an allowance for credit losses on AFS securities. Prior to January 1, 2020, credit losses were recorded as a direct write-down to the AFS security's carrying value. (See *Note 1 - Summary of Significant Accounting Policies* and *Note 2 - Recently Issued and Adopted Accounting Guidance* for further information). Excludes subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at December 31, 2019, which is included in net non-credit portion of OTTI losses on AFS securities. (See *Note 10 - Accumulated Other Comprehensive Income (Loss)* for further information).

(3) Includes $372 million in subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at December 31, 2019. (See *Note 10 - Accumulated Other Comprehensive Income (Loss)* for further information).

Table 3.4 presents the AFS securities with unrealized losses by major security type and length of time that individual securities have been in a continuous unrealized loss position.

Table 3.4 - AFS Securities in a Continuous Unrealized Loss Position
(dollars in millions)

	March 31, 2020					
	Less than 12 Months		12 months or more		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Non-mortgage-backed securities						
U.S. Treasury obligations	$ 1,342	$ —	$ 324	$ (1)	$ 1,666	$ (1)
Other U.S. obligations	1,829	(21)	821	(12)	2,650	(33)
GSE and Tennessee Valley Authority obligations	2,577	(33)	517	(79)	3,094	(112)
State or local housing agency obligations	223	(1)	359	(4)	582	(5)
Federal Family Education Loan Program ABS	1,069	(35)	473	(32)	1,542	(67)
Other	128	(1)	438	(19)	566	(20)
Total non-mortgage-backed securities	7,168	(91)	2,932	(147)	10,100	(238)
Mortgage-backed securities						
U.S. obligations single-family MBS	3,619	(25)	677	(8)	4,296	(33)
GSE single-family MBS	3,425	(27)	762	(7)	4,187	(34)
GSE multifamily MBS	37,441	(879)	13,102	(408)	50,543	(1,287)
Private-label MBS	891	(39)	180	(30)	1,071	(69)
Total mortgage-backed securities	45,376	(970)	14,721	(453)	60,097	(1,423)
Total	$ 52,544	$ (1,061)	$ 17,653	$ (600)	$ 70,197	$ (1,661)

	December 31, 2019(1)					
	Less than 12 Months		12 months or more		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Non-mortgage-backed securities						
Other U.S. obligations	$ 239	$ —	$ 709	$ (2)	$ 948	$ (2)
GSE and Tennessee Valley Authority obligations	17	—	571	(36)	588	(36)
State or local housing agency obligations	70	(2)	396	(8)	466	(10)
Federal Family Education Loan Program ABS	512	(7)	—	—	512	(7)
Other	—	—	416	(13)	416	(13)
Total non-mortgage-backed securities	838	(9)	2,092	(59)	2,930	(68)
Mortgage-backed securities						
U.S. obligations single-family MBS	673	(1)	656	(4)	1,329	(5)
U.S. obligations multifamily MBS	—	—	283	(1)	283	(1)
GSE single-family MBS	2,820	(7)	1,749	(15)	4,569	(22)
GSE multifamily MBS	14,675	(72)	12,433	(120)	27,108	(192)
Private-label MBS	93	—	212	(10)	305	(10)
Total mortgage-backed securities	18,261	(80)	15,333	(150)	33,594	(230)
Total	$ 19,099	$ (89)	$ 17,425	$ (209)	$ 36,524	$ (298)

(1) Total unrealized losses in Table 3.4 will not agree to total gross unrealized losses in Table 3.3. Total unrealized losses in Table 3.4 includes non-credit-related OTTI recognized in AOCI.

Table 3.5 - AFS Securities by Contractual Maturity
(dollars in millions)

Year of Maturity	March 31, 2020 Amortized Cost	March 31, 2020 Fair Value	December 31, 2019 Amortized Cost	December 31, 2019 Fair Value
Non-mortgage-backed securities				
Due in one year or less	$ 6,367	$ 6,376	$ 5,441	$ 5,445
Due after one year through five years	12,440	12,473	14,363	14,439
Due after five years through ten years	7,071	7,077	6,497	6,595
Due after ten years	2,577	2,514	2,313	2,346
Federal Family Education Loan Program ABS(1)	3,139	3,081	3,219	3,352
Total non-mortgage-backed securities	31,594	31,521	31,833	32,177
Mortgage-backed securities(1)	75,795	74,762	71,346	71,856
Total	$ 107,389	$ 106,283	$ 103,179	$ 104,033

(1) MBS and Federal Family Education Loan Program ABS are not presented by contractual maturity because their expected maturities will likely differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment fees.

Table 3.6 - Proceeds from Sale and Gross Gains and Losses on AFS Securities
(dollars in millions)

	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Proceeds from sale of AFS securities	$ 1,741	$ 411
Gross gains on sale of AFS securities	$ 83	$ —
Gross losses on sale of AFS securities	—	—
Net realized gains (losses) from sale of AFS securities	$ 83	$ —

Held-to-Maturity Securities

Table 3.7 - HTM Securities by Major Security Type
(dollars in millions)

March 31, 2020	Amortized Cost(1)	Allowance for Credit Losses(2)	OTTI Recognized in AOCI(2)	Net Carrying Value	Gross Unrecognized Holding Gains(3)	Gross Unrecognized Holding Losses(3)	Fair Value
Non-mortgage-backed securities							
U.S. Treasury obligations	$ 34	$ —	$ —	$ 34	$ —	$ —	$ 34
Other U.S. obligations	605	—	—	605	26	—	631
GSE and Tennessee Valley Authority obligations	3,958	—	—	3,958	103	(1)	4,060
State or local housing agency obligations	1,704	—	—	1,704	3	(36)	1,671
Total non-mortgage-backed securities	6,301	—	—	6,301	132	(37)	6,396
Mortgage-backed securities							
U.S. obligations single-family MBS	5,431	—	—	5,431	77	(29)	5,479
U.S. obligations multifamily MBS	1	—	—	1	—	—	1
GSE single-family MBS	25,470	—	—	25,470	334	(129)	25,675
GSE multifamily MBS	35,659	—	—	35,659	587	(224)	36,022
Private-label MBS	1,287	(5)	(150)	1,132	228	(47)	1,313
Total mortgage-backed securities	67,848	(5)	(150)	67,693	1,226	(429)	68,490
Total	$ 74,149	$ (5)	$ (150)	$ 73,994	$ 1,358	$ (466)	$ 74,886

	December 31, 2019					
	Amortized Cost(1)	OTTI Recognized in AOCI(2)	Carrying Value	Gross Unrecognized Holding Gains(3)	Gross Unrecognized Holding Losses(3)	Fair Value
Non-mortgage-backed securities						
U.S. Treasury obligations	$ 35	$ —	$ 35	$ —	$ —	$ 35
Other U.S. obligations	1,135	—	1,135	17	(1)	1,151
GSE and Tennessee Valley Authority obligations	4,881	—	4,881	78	—	4,959
State or local housing agency obligations	1,722	—	1,722	2	(34)	1,690
Total non-mortgage-backed securities	7,773	—	7,773	97	(35)	7,835
Mortgage-backed securities						
U.S. obligations single-family MBS	5,821	—	5,821	30	(14)	5,837
U.S. obligations multifamily MBS	1	—	1	—	—	1
GSE single-family MBS	26,609	—	26,609	180	(87)	26,702
GSE multifamily MBS	38,527	—	38,527	263	(99)	38,691
Private-label MBS	1,676	(179)	1,497	391	(8)	1,880
Total mortgage-backed securities	72,634	(179)	72,455	864	(208)	73,111
Total	$ 80,407	$ (179)	$ 80,228	$ 961	$ (243)	$ 80,946

(1) Amortized cost of HTM securities includes adjustments made to the cost basis of an investment for accretion, amortization, and/or net charge-offs and excludes accrued interest receivable of $122 million and $130 million as of March 31, 2020 and December 31, 2019.
(2) With the adoption of changes to accounting standards on credit impairment on January 1, 2020, the OTTI approach was replaced with an allowance for credit losses; however, OTTI remains for those securities that had credit impairment prior to the adoption date. (See *Note 1 - Summary of Significant Accounting Policies* and *Note 2 - Recently Issued and Adopted Accounting Guidance* for further information).
(3) Gross unrecognized holding gains (losses) represent the difference between fair value and net carrying value.

Table 3.8 - HTM Securities by Contractual Maturity
(dollars in millions)

	March 31, 2020			December 31, 2019		
Year of Maturity	Amortized Cost	Net Carrying Value(1)	Fair Value	Amortized Cost	Carrying Value(1)	Fair Value
Non-mortgage-backed securities						
Due in one year or less	$ 1,053	$ 1,053	$ 1,054	$ 1,861	$ 1,861	$ 1,862
Due after one year through five years	2,455	2,455	2,459	3,091	3,091	3,094
Due after five years through ten years	793	793	842	767	767	803
Due after ten years	2,000	2,000	2,041	2,054	2,054	2,076
Total non-mortgage-backed securities	6,301	6,301	6,396	7,773	7,773	7,835
Mortgage-backed securities(2)	67,848	67,693	68,490	72,634	72,455	73,111
Total	$ 74,149	$ 73,994	$ 74,886	$ 80,407	$ 80,228	$ 80,946

(1) The March 31, 2020 and December 31, 2019 carrying values of HTM securities represent amortized cost and include adjustments for non-credit-related losses recognized in AOCI. The March 31, 2020 net carrying value also includes the allowance for credit losses.
(2) MBS are not presented by contractual maturity because their expected maturities will likely differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment fees.

Certain FHLBanks sold securities out of their respective HTM portfolio that were near enough to their maturity date (for example, within three months of maturity) that changes in market interest rates would not have a significant effect on the security's fair value or had less than 15% of the acquired principal outstanding at the time of the sale. These sales are considered maturities for purposes of security classification.

Table 3.9 - Proceeds from Sale and Gains and Losses on HTM Securities
(dollars in millions)

	Three Months Ended March 31,	
	2020	2019
Proceeds from sale of HTM securities	$ 356	$ —
Carrying value of HTM securities sold	312	—
Net realized gains (losses) from sale of HTM securities	$ 44	$ —

Allowance for Credit Losses on AFS and HTM Securities

The FHLBanks evaluate AFS and HTM securities for credit losses on a quarterly basis. The FHLBanks adopted new accounting guidance for the measurement of credit losses on financial instruments on January 1, 2020. (See *Note 1- Summary of Significant Accounting Policies* and *Note 2 - Recently Issued and Adopted Accounting Guidance* for additional information.)

During the three months ended March 31, 2020, the FHLBanks recognized a provision for credit losses on AFS and HTM securities of $40 million, due primarily to a decline in the fair value of AFS PLMBS securities. Under the previous accounting methodology for securities impairment, the FHLBanks recognized OTTI, net of $2 million during the three months ended March 31, 2019. (See *Note 1 - Summary of Significant Accounting Policies* on pages F-15 to F-16 and *Note 7 - Other-than-Temporary Impairment Analysis* on pages F-30 to F-31 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for information on the prior methodology for evaluating credit losses.)

To evaluate investment securities for credit losses at March 31, 2020, the FHLBanks employed the following methodologies, based on the type of security:

AFS and HTM Securities (Excluding PLMBS)

The FHLBanks' AFS and HTM securities are principally certificates of deposit, U.S. Treasury and other U.S. obligations, GSE and Tennessee Valley Authority obligations, state or local housing agency obligations, and MBS issued by Ginnie Mae, Freddie Mac, and Fannie Mae that are backed by single-family or multifamily mortgage loans. The FHLBanks only purchase securities that are considered investment quality. Excluding PLMBS investments, at March 31, 2020, 99.7% of AFS and HTM securities, based on amortized cost, were rated single-A or above by a nationally recognized statistical rating organization, based on the lowest long-term credit rating for each security used by each individual FHLBank. These may differ from any internal ratings of the securities by an FHLBank, if applicable.

Each FHLBank evaluates its individual AFS securities for impairment by comparing the security's fair value to its amortized cost. Impairment may exist when the fair value of the investment is less than its amortized cost (i.e., in an unrealized loss position). At March 31, 2020, certain of the FHLBanks' AFS securities were in an unrealized loss position. These losses are considered temporary as each FHLBank expects to recover the entire amortized cost basis on these AFS securities and neither intends to sell these securities nor considers it more likely than not that it will be required to sell these securities before its anticipated recovery of each security's remaining amortized cost basis. Furthermore, the FHLBanks have not experienced any payment defaults on these securities at March 31, 2020; and substantially all of these securities carry an implicit or explicit government guarantee. As a result, no allowance for credit losses was recorded on these AFS securities at March 31, 2020.

Each FHLBank evaluates its HTM securities for impairment on a collective or pooled basis unless an individual assessment is deemed necessary because the securities do not possess similar risk characteristics. At March 31, 2020, the FHLBanks had not established an allowance for credit losses on any of their HTM securities because the securities: (1) were all highly-rated and/or had short remaining terms to maturity, (2) had not experienced, nor did the FHLBanks expect, any payment default on these securities, and (3) in the case of U.S. Treasury, GSE, or other agency obligations, carry an implicit or explicit government guarantee such that the FHLBanks consider the risk of nonpayment to be zero.

Private-label MBS

The FHLBanks also hold investments in private-label MBS. No FHLBank has purchased private-label MBS since 2008. Although the FHLBanks invested in private-label MBS that at the date of purchase were substantially all rated triple-A, many of these securities have subsequently experienced significant credit deterioration. As of March 31, 2020, 8.5% of private-label MBS, based on amortized cost, were rated single-A, or above, by a nationally recognized statistical rating organization; and the remaining securities were either rated less than single-A, or were unrated. To determine whether an allowance for credit losses is necessary on these securities, the FHLBanks perform cash flow analyses. For certain private-label MBS where underlying collateral data is not available, alternative procedures as determined by each FHLBank are used to assess these securities for credit loss measurement.

Each FHLBank's evaluation includes estimating the projected cash flows that the FHLBank is likely to collect based on an assessment of available information, including the structure of the applicable security and certain assumptions such as:

- the remaining payment terms for the security;
- prepayment speeds based on underlying loan-level borrower and loan characteristics;
- expected default rates based on underlying loan-level borrower and loan characteristics;
- loss severity on the collateral supporting each FHLBank's security based on underlying loan-level borrower and loan characteristics;
- expected housing price changes; and
- expected interest-rate assumptions.

Each FHLBank performed a cash flow analysis using third-party models to assess whether the entire amortized cost basis of its private-label MBS will be recovered. The projected cash flows are based on a number of assumptions and expectations, and the results of these models can vary significantly with changes in assumptions and expectations. The projected cash flows, determined based on the model approach, reflect a best estimate scenario and include a base case housing price forecast and a base case housing price recovery path. At March 31, 2020, the allowance for credit losses on AFS and HTM PLMBS was $42 million and $5 million.

Note 4 - Advances

The FHLBanks offer a wide range of fixed- and variable-rate advance products with different maturities, interest rates, payment characteristics, and optionality. Fixed-rate advances generally have maturities ranging from one day to 30 years. Variable-rate advances generally have maturities ranging from less than 30 days to 20 years, where the interest rates reset periodically at a fixed spread to the London Interbank Offered Rate (LIBOR), the Secured Overnight Financing Rate (SOFR) or other specified indices, or to consolidated obligation yields.

Table 4.1 - Advances by Redemption Term
(dollars in millions)

	March 31, 2020		December 31, 2019	
Redemption Term	Amount(1)	Weighted-Average Interest Rate	Amount(1)	Weighted-Average Interest Rate
Overdrawn demand and overnight deposit accounts	$ 10	0.99%	$ 6	2.05%
Due in 1 year or less	436,187	1.02%	353,979	1.91%
Due after 1 year through 2 years	128,852	1.66%	105,773	2.18%
Due after 2 years through 3 years	55,326	1.98%	43,257	2.30%
Due after 3 years through 4 years	40,129	2.13%	32,480	2.44%
Due after 4 years through 5 years	47,377	1.73%	34,039	2.12%
Thereafter	89,285	1.81%	69,389	2.16%
Total principal amount	797,166	1.38%	638,923	2.05%
Commitment fees	(1)		(1)	
Discounts on AHP advances	(27)		(27)	
Premiums	33		34	
Discounts	(54)		(52)	
Hedging adjustments	9,553		2,519	
Fair value option valuation adjustments	274		123	
Total	$ 806,944		$ 641,519	

(1) Carrying amounts exclude accrued interest receivable of $856 million and $958 million as of March 31, 2020 and December 31, 2019.

The FHLBanks offer advances to members and housing associates that provide the right, based upon predetermined option exercise dates, to call the advance prior to maturity without incurring prepayment or termination fees (callable advances). The FHLBanks also offer certain floating-rate and/or amortizing advances that may be contractually prepaid by the borrower on specified dates without incurring prepayment or termination fees (prepayable advances). Other advances may only be prepaid by paying a fee to the FHLBank (prepayment fee) that makes the FHLBank financially indifferent to the prepayment of the advance.

Some advances contain embedded options allowing an FHLBank to offer putable and convertible advances. A member either can sell an embedded option to an FHLBank or can purchase an embedded option from an FHLBank. With a putable advance to a member, an FHLBank effectively purchases a put option from the member that allows that FHLBank to put or extinguish the fixed-rate advance to the member on predetermined exercise dates. Generally, these put options are exercised when interest rates increase relative to contractual rates.

Convertible advances allow an FHLBank to convert an advance from one interest-payment term structure to another. Fixed-rate to variable-rate convertible advances have a defined lockout period after which they convert to the current market rate or another structure. A convertible advance generally carries a lower initial interest rate than a comparable-maturity fixed-rate advance without the conversion feature. Variable- to fixed-rate convertible advances have a defined lockout period during which the interest rates adjust based on a spread to LIBOR, SOFR or other specified indices, or consolidated obligation yields. At the end of the lockout period, these advances may convert to fixed-rate advances. The fixed rates on the converted advances are determined at origination.

Table 4.2 - Advances by Redemption Term or Next Call Date and Next Put or Convert Date
(dollars in millions)

	Redemption Term or Next Call Date(1)		Redemption Term or Next Put or Convert Date	
	March 31, 2020	December 31, 2019	March 31, 2020	December 31, 2019
Overdrawn demand and overnight deposit accounts	$ 10	$ 6	$ 10	$ 6
Due in 1 year or less	535,090	435,307	468,619	377,778
Due after 1 year through 2 years	87,554	71,894	135,971	112,205
Due after 2 years through 3 years	46,193	36,938	58,487	46,336
Due after 3 years through 4 years	29,752	22,338	38,586	31,792
Due after 4 years through 5 years	36,663	23,096	44,800	30,967
Thereafter	61,904	49,344	50,693	39,839
Total principal amount	$ 797,166	$ 638,923	$ 797,166	$ 638,923

(1) Also includes certain floating-rate and/or amortizing advances that may be contractually prepaid by the borrower on specified dates without incurring prepayment or termination fees.

Table 4.3 - Advances by Current Interest Rate Terms
(dollars in millions)

Redemption Term	March 31, 2020	December 31, 2019
Total fixed-rate	$ 517,354	$ 408,692
Total variable-rate	279,812	230,231
Total principal amount	$ 797,166	$ 638,923

Credit Risk Exposure and Security Terms

The FHLBanks' advances are primarily made to member financial institutions, including commercial banks and insurance companies. Each FHLBank manages its credit exposure to advances through an integrated approach that includes establishing a credit limit for each borrower. This approach includes an ongoing review of each borrower's financial condition, in conjunction with the FHLBank's collateral and lending policies to limit risk of loss, while balancing borrowers' needs for a reliable source of funding.

In addition, each FHLBank lends to eligible borrowers in accordance with federal law and FHFA regulations. Specifically, each FHLBank is required to obtain sufficient collateral to fully secure credit products up to the counterparty's total credit limit. Collateral eligible to secure new or renewed advances includes:

- one-to-four family and multifamily mortgage loans (delinquent for no more than 90 days) and securities representing such mortgages;
- loans and securities issued, insured, or guaranteed by the U.S. government or any U.S. government agency (for example, mortgage-backed securities issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae);
- cash or deposits in the FHLBank;
- certain other real estate-related collateral, such as commercial real estate loans, provided that the collateral has a readily ascertainable value and that the FHLBank can perfect a security interest in it; and
- certain qualifying securities representing undivided equity interests in eligible advance collateral.

Residential mortgage loans are the principal form of collateral for advances. The estimated value of the collateral required to secure each member's credit products is calculated by applying collateral discounts, or haircuts, to the market value or unpaid principal balance of the collateral, as applicable. In addition, community financial institutions are eligible to use expanded statutory collateral provisions for small business, agriculture loans, and community development loans. The FHLBank capital stock owned by each borrower is also pledged as collateral. Collateral arrangements may vary depending upon borrower credit quality, financial condition, and performance; borrowing capacity; and overall credit exposure to the borrower. Each FHLBank can also require additional or substitute collateral to protect its security interest. The FHLBanks also have policies and procedures for validating the reasonableness of their collateral valuations. In addition, collateral verifications and on-site reviews are performed by the FHLBanks based on the risk profile of the borrower. Management of each FHLBank believes that these policies effectively manage that FHLBank's respective credit risk from advances.

An FHLBank either allows a borrower to retain physical possession of the collateral assigned to it, or requires the borrower to specifically assign or place physical possession of the collateral with the FHLBank or its safekeeping agent. Each FHLBank perfects its security interest in all pledged collateral. The FHLBank Act states that any security interest granted to an FHLBank by a borrower will have priority over the claims or rights of any other party, except for claims or rights of a third party that would be entitled to priority under otherwise applicable law and are held by a bona fide purchaser for value or by a secured party holding a prior perfected security interest.

Using a risk-based approach and taking into consideration each borrower's financial strength, the FHLBanks consider the types and level of collateral to be the primary indicator of credit quality on their advances. At March 31, 2020 and December 31, 2019, each FHLBank had rights to collateral on a borrower-by-borrower basis with an estimated value equal to, or greater than, its outstanding advances.

Each FHLBank continues to evaluate and make changes to its collateral guidelines, as necessary, based on current market conditions. At March 31, 2020 and December 31, 2019, none of the FHLBanks had any advances that were past due, on non-accrual status, or considered impaired. In addition, there were no troubled debt restructurings related to advances at any FHLBank during the three months ended March 31, 2020 or March 31, 2019.

Based on the collateral held as security, each FHLBank management's credit extension and collateral policies, and repayment history on advances, no allowance for credit losses on advances was recorded at March 31, 2020, and December 31, 2019.

Note 5 - Mortgage Loans

Mortgage Loans Held for Portfolio

Mortgage loans held for portfolio consist of loans obtained through the MPP and MPF Program and are either conventional mortgage loans or government-guaranteed or -insured mortgage loans. Under the MPP and MPF Program, the FHLBanks purchase single-family mortgage loans that are originated or acquired by participating financial institutions. These mortgage loans are credit-enhanced by participating financial institutions or are guaranteed or insured by Federal agencies.

Table 5.1 - Mortgage Loans Held for Portfolio
(dollars in millions)

	March 31, 2020	December 31, 2019
Fixed-rate, long-term single-family mortgage loans	$ 67,354	$ 65,541
Fixed-rate, medium-term(1) single-family mortgage loans	5,881	5,648
Total unpaid principal balance	73,235	71,189
Premiums	1,308	1,293
Discounts	(31)	(33)
Hedging adjustments	79	59
Total mortgage loans held for portfolio(2)	74,591	72,508
Allowance for credit losses on mortgage loans	(29)	(16)
Mortgage loans held for portfolio, net	$ 74,562	$ 72,492

(1) Medium-term is defined as a term of 15 years or less.
(2) Excludes accrued interest receivable of $353 million and $345 million at March 31, 2020 and December 31, 2019.

Table 5.2 - Mortgage Loans Held for Portfolio by Collateral/Guarantee Type
(dollars in millions)

	March 31, 2020	December 31, 2019
Conventional MPF/MPP mortgage loans	$ 69,990	$ 67,887
Government-guaranteed or -insured mortgage loans	3,245	3,302
Total unpaid principal balance	$ 73,235	$ 71,189

Credit Enhancements. An FHLBank's allowance for credit losses considers the credit enhancements associated with conventional mortgage loans under the MPF Program and MPP. Credit enhancements may include primary mortgage insurance, supplemental mortgage insurance, the credit enhancement amount plus any recoverable performance-based credit enhancement fees (for certain MPF loans), and Lender Risk Account (for MPP loans). The credit risk analysis of all conventional loans is performed at the individual master commitment level to determine the credit enhancements available to recover losses on loans under each individual master commitment.

Mortgage Partnership Finance Program. Participating financial institutions are paid a credit enhancement fee for assuming credit risk, and in some instances all or a portion of the credit enhancement fee may be performance-based. An FHLBank records credit enhancement fees paid to the participating financial institutions as a reduction to mortgage interest income. A participating financial institution may obtain supplemental mortgage insurance that it intends to use to cover a portion of its credit loss obligation under a master commitment.

Conventional MPF loans are evaluated for credit enhancement by use of third-party models. Each FHLBank participating in the MPF program (MPF FHLBank) and its participating financial institution share the risk of credit losses on conventional MPF loan products held for portfolio, by structuring potential losses into layers with respect to each master commitment. Credit losses in a master commitment are first absorbed by an FHLBank, up to a specified amount referred to as the First Loss Account. For each master commitment, the FHLBank may withhold a participating financial institution's scheduled performance credit enhancement fee in order to reimburse the FHLBank for a portion of credit losses allocated to the First Loss Account.

The First Loss Account represents the first layer or portion of credit losses that each MPF FHLBank absorbs with respect to its MPF loans after considering the borrower's equity, primary mortgage insurance, and recoverable credit enhancement fees. The participating financial institution is required to cover the next layer of losses up to an agreed-upon credit enhancement obligation amount, which may consist of a direct liability of the participating financial institution to pay credit losses up to a specified amount, a contractual obligation of a participating financial institution to provide supplemental mortgage insurance, or a combination of both. Any remaining unallocated losses are absorbed by the MPF FHLBank.

Unlike conventional MPF products held for portfolio, under the MPF Xtra, MPF Direct, MPF Government, and MPF Government MBS products, participating financial institutions are not required to provide credit enhancement and do not receive credit enhancement fees. Loans sold to the FHLBank of Chicago under the MPF Xtra and MPF Direct products are concurrently sold to third-party investors, and are not recorded on the FHLBank's statement of condition. (See *Note 12 - Commitments and Contingencies* for additional information.)

Mortgage Purchase Program. The conventional mortgage loans under the MPP are supported by a Lender Risk Account, and may also be supported by primary or supplemental mortgage insurance, in addition to the associated property as collateral. The Lender Risk Account is funded by an FHLBank participating in the MPP (MPP FHLBank) either upfront as a portion of the purchase proceeds or through a portion of the net interest remitted monthly by the borrower in an amount sufficient to cover expected losses on the pool of mortgages. The Lender Risk Account is recorded in other liabilities on the Combined Statement of Condition. To the extent available, Lender Risk Account funds are used to offset any losses that occur. Typically after five years, excess funds over required balances are returned to the participating financial institution in accordance with a step-down schedule that is established upon execution of a master commitment contract. The Lender Risk Account is released in accordance with the terms of the master commitment. At March 31, 2020 and December 31, 2019, the amount of the Lender Risk Account remaining to cover future potential losses under the MPP were $434 million and $421 million.

Payment Status of Mortgage Loans. Payment status is the key credit quality indicator for conventional mortgage loans and allows the FHLBanks to monitor the migration of past due loans. Past due loans are those where the borrower has failed to make timely payments of principal and/or interest in accordance with the terms of the loan. Other delinquency statistics include, non-accrual loans and loans in process of foreclosure. Tables 5.3 and 5.4 present the payment status for conventional mortgage loans and other delinquency statistics for all of the FHLBanks' mortgage loans at March 31, 2020 and December 31, 2019.

Table 5.3 - Credit Quality Indicator for Conventional Mortgage Loans
(dollars in millions)

	March 31, 2020		
	Conventional MPF/MPP		
	Origination Year		
Payment Status at Amortized Cost(1)	**Prior to 2016**	**2016 to 2020**	**Total**
Past due 30-59 days	$ 204	$ 196	$ 400
Past due 60-89 days	34	55	89
Past due 90 days or more	38	93	131
Total past due mortgage loans	276	344	620
Total current mortgage loans	51,961	18,712	70,673
Total conventional MPF/MPP loans	$ 52,237	$ 19,056	$ 71,293

	December 31, 2019
Payment Status at Recorded Investment(1)	**Conventional MPF/MPP**
Past due 30-59 days	$ 435
Past due 60-89 days	82
Past due 90 days or more	132
Total past due mortgage loans	649
Total current mortgage loans	68,832
Total conventional MPF/MPP loans	$ 69,481

(1) The recorded investment at December 31, 2019 includes accrued interest receivable whereas the amortized cost at March 31, 2020 excludes accrued interest receivable.

Table 5.4 - Other Delinquency Statistics
(dollars in millions)

	March 31, 2020		
Amortized Cost	**Conventional MPF/MPP**	**Government-Guaranteed or -Insured**	**Total**
In process of foreclosure(1)	$ 45	$ 14	$ 59
Serious delinquency rate(2)	0.19%	1.64%	0.25%
Past due 90 days or more and still accruing interest	$ 29	$ 54	$ 83
Loans on non-accrual status(3)	$ 129	$ —	$ 129

	December 31, 2019		
Recorded Investment	**Conventional MPF/MPP**	**Government-Guaranteed or -Insured**	**Total**
In process of foreclosure(1)	$ 44	$ 16	$ 60
Serious delinquency rate(2)	0.19%	1.60%	0.26%
Past due 90 days or more and still accruing interest	$ 26	$ 54	$ 80
Loans on non-accrual status	$ 131	$ —	$ 131

(1) Includes loans where the decision of foreclosure or a similar alternative, such as pursuit of deed-in-lieu, has been reported.
(2) Represents seriously delinquent loans as a percentage of total mortgage loans. Seriously delinquent loans are comprised of all loans past due 90 days or more and loans that are in the process of foreclosure.
(3) As of March 31, 2020, $72 million of these conventional mortgage loans on non-accrual status did not have an associated allowance for credit losses.

Allowance for Credit Losses

See *Note 10 - Allowance for Credit Losses* on pages F-34 to F-39 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for information on the prior methodology for evaluating credit losses, as well as a discussion on classes of financing receivables, the FHLBanks' policies for impairing financing receivables, placing them on non-accrual status, and charging them off when necessary.

Conventional MPF and Conventional MPP Mortgage Loans. Conventional loans are evaluated collectively when similar risk characteristics exists. Conventional loans that do not share risk characteristics with other pools are evaluated for expected credit losses on an individual basis. Each FHLBank determines its allowances for credit losses on conventional loans through analyses that include consideration of various loan portfolio and collateral-related characteristics, such as past performance, current conditions, and reasonable and supportable forecasts of expected economic conditions. The FHLBanks use models that employ a variety of methods, such as projected cash flows, to estimate expected credit losses over the life of the loans. These models rely on a number of inputs, such as both current and forecasted property values and interest rates as well as historical borrower behavior experience. The range of short-term forecasts of housing prices at March 31, 2020 varied, but those FHLBanks not using third-party model inputs were generally forecasting for 1 to 5 years before transitioning to historical trends. Each FHLBank also incorporates associated credit enhancements, if any, to determine its estimate of expected credit losses.

Certain conventional loans may be evaluated for credit losses by an FHLBank using the practical expedient for collateral dependent assets. A mortgage loan is considered collateral dependent if repayment is expected to be provided by the sale of the underlying property, that is, if it is considered likely that the borrower will default. An FHLBank may estimate the fair value of this collateral by applying an appropriate loss severity rate or using third party estimates or property valuation model(s). The expected credit loss of a collateral dependent mortgage loan is equal to the difference between the amortized cost of the loan and the estimated fair value of the collateral, less estimated selling costs. The FHLBanks will either reserve for these estimated losses or record a direct charge-off of the loan balance, if certain triggering criteria are met. Expected recoveries of prior charge-offs, if any, are included in the allowance for credit losses.

Each FHLBank established an allowance for credit losses on its conventional mortgage loans held for portfolio. Table 5.5 presents a rollforward of the allowance for credit losses on mortgage loans for the three months ended March 31, 2020 and 2019.

Table 5.5 - Allowance for Credit Losses on Conventional MPF/MPP Mortgage Loans
(dollars in millions)

	Three Months Ended March 31,	
	2020	2019
Balance, at beginning of period	$ 16	$ 15
Adjustment for cumulative effect of accounting change	11	—
Charge-offs, net of recoveries	(1)	(1)
Provision (reversal) for credit losses	3	1
Balance, at end of period	$ 29	$ 15

Government-Guaranteed or -Insured Mortgage Loans. An FHLBank may invest in fixed-rate mortgage loans that are insured or guaranteed by the Federal Housing Administration, the Department of Veterans Affairs, the Rural Housing Service of the Department of Agriculture, and/or the Department of Housing and Urban Development. The servicer provides and maintains insurance or a guarantee from the applicable government agency. The servicer is responsible for compliance with all government agency requirements and for obtaining the benefit of the applicable guarantee or insurance with respect to defaulted government-guaranteed or -insured mortgage loans. Any losses incurred on these loans that are not recovered from the issuer or the guarantor are absorbed by the servicer. Therefore, each FHLBank only has credit risk for these loans if the servicer fails to pay for losses not covered by the guarantee or insurance. Based on each FHLBank's assessment of its servicers and the collateral backing the loans, the risk of loss was immaterial and, consequently, no FHLBank recorded an allowance for credit losses for government-guaranteed or -insured mortgage loans at March 31, 2020 and December 31, 2019. Furthermore, none of these mortgage loans has been placed on non-accrual status because of the U.S. government guarantee or insurance on these loans and the contractual obligation of the loan servicer to repurchase the loans when certain criteria are met.

Note 6 - Derivatives and Hedging Activities

Nature of Business Activity

The FHLBanks are exposed to interest-rate risk primarily from the effect of interest rate changes on their interest-earning assets and their interest-bearing liabilities that finance these assets. The goal of each FHLBank's interest-rate risk management strategy is not to eliminate interest-rate risk, but to manage it within appropriate limits. To mitigate the risk of loss, each FHLBank has established policies and procedures, which include guidelines on the amount of exposure to interest rate changes it is willing to accept. In addition, each FHLBank monitors the risk to its interest income, net interest margin, and average maturity of interest-earning assets and interest-bearing liabilities. (See *Note 11 - Derivatives and Hedging Activities* on pages F-39 to F-48 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for a description of the application of derivatives and the types of derivatives and hedged items.)

Each FHLBank reevaluates its hedging strategies periodically and may change the hedging techniques it uses or may adopt new strategies. Each FHLBank transacts most of its derivatives with large banks and major broker-dealers. Some of these banks and broker-dealers, or their affiliates, buy, sell, and distribute consolidated obligations. Derivative transactions may be either executed with a counterparty (uncleared derivatives) or cleared through a Futures Commission Merchant (i.e., clearing agent) with a Derivative Clearing Organization (cleared derivatives). Once a derivative transaction has been accepted for clearing by a Derivative Clearing Organization (Clearinghouse), the executing counterparty is replaced with the Clearinghouse. The FHLBanks are not derivative dealers and do not trade derivatives for short-term profit.

Financial Statement Effect and Additional Financial Information

Derivative Notional Amounts. The notional amount of derivatives serves as a factor in determining periodic interest payments or cash flows received and paid. However, the notional amount of derivatives reflects the FHLBanks' involvement in the various classes of financial instruments and represents neither the actual amounts exchanged nor the overall exposure of the FHLBanks to credit and market risk; the overall risk is much smaller. The risks of derivatives can be measured meaningfully on a portfolio basis that takes into account the counterparties, the types of derivatives, the items being hedged, and any offsets between the derivatives and the items being hedged.

Table 6.1 presents the notional amount, fair value of derivative instruments, and total derivative assets and liabilities. Total derivative assets and liabilities include the effect of netting adjustments and cash collateral. For purposes of this disclosure, the derivative values include the fair value of derivatives and the related accrued interest.

Table 6.1 - Fair Value of Derivative Instruments
(dollars in millions)

	March 31, 2020			December 31, 2019		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as hedging instruments						
Interest-rate swaps	$ 473,364	$ 1,043	$ 6,643	$ 409,519	$ 792	$ 2,196
Derivatives not designated as hedging instruments						
Interest-rate swaps	239,873	444	679	204,262	331	376
Interest-rate swaptions	3,906	14	—	6,995	13	—
Interest-rate caps or floors	13,165	4	1	13,575	3	—
Interest-rate futures or forwards	2,274	2	29	1,141	2	1
Mortgage delivery commitments	8,176	57	34	2,537	6	1
Other	1,476	34	9	1,259	14	5
Total derivatives not designated as hedging instruments	268,870	555	752	229,769	369	383
Total derivatives before netting and collateral adjustments	$ 742,234	1,598	7,395	$ 639,288	1,161	2,579
Netting adjustments and cash collateral(1)		1,738	(7,201)		570	(2,502)
Total derivative assets and total derivative liabilities		$ 3,336	$ 194		$ 1,731	$ 77

(1) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, and also cash collateral and related accrued interest held or placed by that FHLBank with the same clearing agent and/or counterparty. Cash collateral posted and related accrued interest was $8,503 million and $2,946 million at March 31, 2020 and December 31, 2019. Cash collateral received and related accrued interest was $650 million and $347 million at March 31, 2020 and December 31, 2019.

Table 6.2 presents the net gains (losses) on qualifying and discontinued fair value and cash flow hedging relationships.

Table 6.2 - Net Gains (Losses) on Fair Value and Cash Flow Hedging Relationships
(dollars in millions)

	Three Months Ended March 31, 2020				
	Interest Income/Expense				Other Comprehensive Income
	Advances	Available-for-Sale Securities	Consolidated Discount Notes	Consolidated Bonds	
Total interest income (expense) presented on the Combined Statement of Income	$ 2,892	$ 491	$ (1,523)	$ (2,710)	
Gains (losses) on fair value hedging relationships					
Interest rate contracts					
Derivatives(1)	$ (7,113)	$ (5,205)	$ 57	$ 1,238	
Hedged items(2)	6,953	5,014	(52)	(1,155)	
Net gains (losses) on fair value hedging relationships	$ (160)	$ (191)	$ 5	$ 83	
Gains (losses) on cash flow hedging relationships(3)					
Interest rate contracts					
Reclassified from AOCI into interest income (expense)	$ —	$ —	$ (5)	$ (2)	
Recognized in OCI					$ (298)

	Three Months Ended March 31, 2019				
	Interest Income/Expense				Other Comprehensive Income
	Advances	Available-for-Sale Securities	Consolidated Discount Notes	Consolidated Bonds	
Total interest income (expense) presented on the Combined Statement of Income	$ 4,772	$ 668	$ (2,561)	$ (3,733)	
Net fair value hedge ineffectiveness					
Interest rate contracts					
Derivatives(1)	$ (944)	$ (939)	$ —	$ 508	
Hedged items(2)	1,183	926	—	(723)	
Net gains (losses) on fair value hedging relationships	$ 239	$ (13)	$ —	$ (215)	
Gains (losses) on cash flow hedging relationships(3)					
Interest rate contracts					
Reclassified from AOCI into interest income (expense)	$ —	$ —	$ (10)	$ (1)	
Recognized in OCI					$ (81)

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(1) Includes changes in fair value and net interest settlements and excludes the interest income (expense) of the respective hedged item.
(2) Includes changes in fair value and amortization and accretion of basis adjustments on active and discontinued hedge relationships.
(3) Includes changes in fair value, net interest settlements and amortization and accretion of basis adjustments on active and discontinued hedge relationships. Excludes the interest income (expense) of the respective hedged item.

For the three months ended March 31, 2020 and 2019, no material amounts were reclassified from AOCI into earnings as a result of discontinued cash flow hedges because the original forecasted transactions occurred by the end of the originally specified time period or within a two-month period thereafter. At March 31, 2020, $24 million of deferred net losses on derivative instruments in AOCI is expected to be reclassified to earnings during the next twelve months. At March 31, 2020, the maximum length of time over which an FHLBank is hedging its exposure to the variability in future cash flows for forecasted transactions is twelve years, excluding those forecasted transactions related to the payment of variable interest on existing financial instruments.

Table 6.3 presents the cumulative basis adjustments on hedged items designated in fair value hedging relationships and the related amortized cost of the hedged items at March 31, 2020 and December 31, 2019.

Table 6.3 - Cumulative Basis Adjustments for Fair Value Hedges
(dollars in millions)

	March 31, 2020			
Line item in statement of condition of hedged item	Amortized Cost of Hedged Asset or Liability(1)	Basis Adjustments for Active Hedging Relationships Included in Amortized Cost	Basis Adjustments for Discontinued Hedging Relationships Included in Amortized Cost	Cumulative Amount of Fair Value Hedging Basis Adjustments
Advances	$ 247,013	$ 9,490	$ 61	$ 9,551
Available-for-sale securities	75,866	7,082	50	7,132
Mortgage loans	655	—	12	12
Consolidated bonds	112,435	1,803	139	1,942
Consolidated discount notes	53,846	51	—	51

	December 31, 2019			
Line item in statement of condition of hedged item	Amortized Cost of Hedged Asset or Liability(1)	Basis Adjustments for Active Hedging Relationships Included in Amortized Cost	Basis Adjustments for Discontinued Hedging Relationships Included in Amortized Cost	Cumulative Amount of Fair Value Hedging Basis Adjustments
Advances	$ 182,870	$ 2,481	$ 38	$ 2,519
Available-for-sale securities	68,583	2,118	—	2,118
Mortgage loans	691	—	12	12
Consolidated bonds	142,266	648	133	781
Consolidated discount notes	22,620	—	—	—

(1) Includes only the portion of amortized cost representing the hedged items in active or discontinued fair value hedging relationships.

Table 6.4 presents net gains (losses) related to derivatives and hedging activities recorded in non-interest income.

Table 6.4 - Net Gains (Losses) on Derivatives and Hedging Activities Recorded in Non-interest Income
(dollars in millions)

	Three Months Ended March 31,	
	2020	2019
Derivatives not designated as hedging instruments		
Economic hedges		
Interest-rate swaps	$ (1,177)	$ (90)
Interest-rate swaptions	99	(11)
Interest-rate caps or floors	1	(4)
Interest-rate futures or forwards	(48)	(5)
Net interest settlements	(39)	(10)
Other	(8)	—
Mortgage delivery commitments	45	11
Total net gains (losses) related to derivatives not designated as hedging instruments	(1,127)	(109)
Price alignment amount(1)	6	1
Net gains (losses) on derivatives and hedging activities	$ (1,121)	$ (108)

(1) This amount is for derivatives for which variation margin is characterized as a daily settled contract.

Managing Credit Risk on Derivatives

Each FHLBank is subject to credit risk due to the risk of non-performance by counterparties to its derivative transactions, and manages credit risk through credit analysis, collateral requirements, and adherence to the requirements set forth in its policies, U.S. Commodity Futures Trading Commission regulations, and FHFA regulations.

Uncleared Derivatives. For uncleared derivatives, the degree of credit risk depends on the extent to which master netting arrangements are included in these contracts to mitigate the risk. Each FHLBank requires collateral agreements on its uncleared derivatives. Additionally, collateral related to derivatives with member institutions includes collateral assigned to an FHLBank, as evidenced by a written security agreement and held by the member institution for the benefit of that FHLBank.

Certain of the FHLBanks' uncleared derivative instruments contain provisions that require an FHLBank to post additional collateral with its counterparties if there is deterioration in that FHLBank's credit rating. If an FHLBank's credit rating is lowered by a nationally recognized statistical rating organization, that FHLBank may be required to deliver additional collateral on uncleared derivative instruments in net liability positions, unless the collateral delivery threshold is set to zero. The aggregate fair value of all uncleared derivative instruments with credit-risk-related contingent features that require an FHLBank to deliver additional collateral due to a credit downgrade and were in a net liability position (before cash collateral and related accrued interest) at March 31, 2020, was $2,226 million, for which the FHLBanks have posted collateral with a fair value of $2,206 million in the normal course of business. If each FHLBank's credit rating had been lowered from its current rating to the next lower rating that would have triggered additional collateral to be delivered, the FHLBanks would have been required to deliver an additional $17 million of collateral at fair value to their uncleared derivatives counterparties at March 31, 2020.

Cleared Derivatives. For cleared derivatives, a Derivative Clearing Organization (Clearinghouse) is an FHLBank's counterparty. The Clearinghouse notifies the clearing agent of the required initial and variation margin and the clearing agent in turn notifies the FHLBank. Each FHLBank utilizes one or two Clearinghouses for all cleared derivative transactions, LCH Ltd. and/or CME Clearing. At both Clearinghouses, variation margin is characterized as daily settlement payments and initial margin is considered collateral. The requirement that an FHLBank post initial and variation margin, through the clearing agent to the Clearinghouse, exposes an FHLBank to credit risk if the clearing agent or the Clearinghouse fails to meet its obligations. The use of cleared derivatives is intended to mitigate credit risk exposure because a central counterparty is substituted for individual counterparties and collateral/payments for changes in the fair value of cleared derivatives is posted daily through a clearing agent.

The Clearinghouse determines initial margin requirements and generally credit ratings are not factored into the initial margin. However, clearing agents may require additional initial margin to be posted based on credit considerations, including, but not limited to, credit rating downgrades. None of the FHLBanks were required to post additional initial margin by its clearing agents, based on credit considerations, at March 31, 2020.

Offsetting of Derivative Assets and Derivative Liabilities

An FHLBank presents derivative instruments, related cash collateral received or pledged, and associated accrued interest, on a net basis by clearing agent and/or by counterparty when it has met the netting requirements.

Each FHLBank has analyzed the enforceability of offsetting rights incorporated in its cleared derivative transactions and determined that the exercise of those offsetting rights by a non-defaulting party under these transactions should be upheld under applicable law upon an event of default including a bankruptcy, insolvency, or similar proceeding involving the Clearinghouse or that FHLBank's clearing agent, or both. Based on this analysis, each FHLBank presents a net derivative receivable or payable for all of its transactions through a particular clearing agent with a particular Clearinghouse.

Table 6.5 presents separately the fair value of derivative instruments meeting or not meeting netting requirements, with and without the legal right of offset, including the related collateral.

Table 6.5 - Offsetting of Derivative Assets and Derivative Liabilities
(dollars in millions)

	March 31, 2020						
	Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Not Offset		
	Gross Recognized Amount	Gross Amounts of Netting Adjustments and Cash Collateral	Derivative Instruments Not Meeting Netting Requirements(1)	Total Derivative Assets and Total Derivative Liabilities	Can Be Sold or Repledged	Cannot Be Sold or Repledged	Net Amount(2)
Derivative Assets							
Uncleared	$ 689	$ (329)	$ 59	$ 419	$ —	$ 161	$ 258
Cleared	850	2,067	—	2,917	(643)	—	3,560
Total				$ 3,336			$ 3,818
Derivative Liabilities							
Uncleared	$ 6,662	$ (6,524)	$ 56	$ 194	$ —	$ 29	$ 165
Cleared	677	(677)	—	—	—	—	—
Total				$ 194			$ 165

	December 31, 2019						
	Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Not Offset		
	Gross Recognized Amount	Gross Amounts of Netting Adjustments and Cash Collateral	Derivative Instruments Not Meeting Netting Requirements(1)	Total Derivative Assets and Total Derivative Liabilities	Can Be Sold or Repledged	Cannot Be Sold or Repledged	Net Amount(2)
Derivative Assets							
Uncleared	$ 623	$ (409)	$ 6	$ 220	$ —	$ 125	$ 95
Cleared	532	979	—	1,511	(381)	—	1,892
Total				$ 1,731			$ 1,987
Derivative Liabilities							
Uncleared	$ 2,142	$ (2,078)	$ 1	$ 65	$ —	$ 9	$ 56
Cleared	436	(424)	—	12	—	12	—
Total				$ 77			$ 56

(1) Represents derivatives that are not subject to an enforceable netting agreement (e.g., mortgage delivery commitments and certain interest-rate futures or forwards).
(2) Any overcollateralization at an FHLBank's individual clearing agent and/or counterparty level is not included in the determination of the net amount. At March 31, 2020 and December 31, 2019, the FHLBanks had additional net credit exposure of $1,724 million and $1,515 million due to instances where an FHLBank's non-cash collateral to a counterparty exceeded the FHLBank's net derivative position.

Note 7 - Deposits

The FHLBanks offer demand and overnight deposit programs to members and to qualifying non-members. In addition, certain FHLBanks offer short-term interest-bearing deposit programs to members and, in certain cases, to qualifying non-members. A member that services mortgage loans may deposit in its FHLBank funds collected in connection with the mortgage loans, pending disbursement of these funds to the owners of the mortgage loans. The FHLBanks classify these funds as other deposits. Deposits classified as demand, overnight, or other pay interest based on a daily interest rate. Term deposits pay interest based on a fixed rate determined at the issuance of the deposit.

Table 7.1 - Deposits
(dollars in millions)

	March 31, 2020	December 31, 2019
Interest-bearing		
Demand and overnight	$ 13,544	$ 9,371
Term	489	266
Other	12	11
Total interest-bearing	14,045	9,648
Non-interest-bearing		
Demand and overnight	299	213
Other	709	543
Total non-interest-bearing	1,008	756
Total deposits	$ 15,053	$ 10,404

Note 8 - Consolidated Obligations

Consolidated obligations consist of consolidated bonds and consolidated discount notes, which are joint and several obligations of all FHLBanks. The FHLBanks issue consolidated obligations through the Office of Finance as their agent. In connection with each debt issuance, an FHLBank specifies the amount of debt it wants issued on its behalf. The Office of Finance tracks the amount of debt issued on behalf of each FHLBank. In addition, each FHLBank records as a liability its specific portion of consolidated obligations for which it is the primary obligor.

The FHFA and the Secretary of the Treasury oversee the issuance of FHLBank debt through the Office of Finance. Consolidated bonds may be issued to raise short-, intermediate-, or long-term funds for the FHLBanks and are not subject to any statutory or regulatory limits on their maturity. Consolidated discount notes are issued primarily to raise short-term funds and have original maturities of up to one year. These notes generally sell below their face value and are redeemed at face value when they mature.

Although each FHLBank is primarily liable for its portion of consolidated obligations, each FHLBank is also jointly and severally liable with the other FHLBanks for the payment of principal and interest on all consolidated obligations of the FHLBanks. The principal amount of the FHLBanks' outstanding consolidated obligations, including consolidated obligations held by other FHLBanks, was $1,174.7 billion and $1,025.9 billion at March 31, 2020 and December 31, 2019.

Table 8.1 - Consolidated Discount Notes Outstanding
(dollars in millions)

	Book Value	Principal Amount	Weighted-Average Interest Rate(1)
March 31, 2020	$ 576,593	$ 577,310	0.88%
December 31, 2019	$ 404,035	$ 404,953	1.60%

(1) Represents yield to maturity excluding concession fees.

Table 8.2 - Consolidated Bonds Outstanding by Contractual Maturity
(dollars in millions)

	March 31, 2020		December 31, 2019	
Year of Contractual Maturity	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
Due in 1 year or less	$ 395,583	0.92%	$ 410,476	1.77%
Due after 1 year through 2 years	83,451	1.41%	92,588	1.90%
Due after 2 years through 3 years	34,063	2.12%	29,935	2.27%
Due after 3 years through 4 years	16,806	2.50%	18,287	2.49%
Due after 4 years through 5 years	23,143	2.26%	22,786	2.41%
Thereafter	44,198	2.93%	46,758	3.02%
Total principal amount	597,244	1.30%	620,830	1.95%
Net premiums	510		434	
Hedging adjustments	1,942		781	
Fair value option valuation adjustments	121		116	
Total	$ 599,817		$ 622,161	

Consolidated bonds outstanding were issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms that are indexed to LIBOR, SOFR, or other specified indices. To meet the specific needs of certain investors in consolidated obligations, both fixed-rate consolidated bonds and variable-rate consolidated bonds may contain features that result in complex coupon payment terms and call options. When these consolidated bonds are issued, an FHLBank may enter into derivatives containing features that offset the terms and embedded options, if any, of the consolidated bond obligations.

Table 8.3 - Consolidated Bonds Outstanding by Call Features
(dollars in millions)

Principal Amount of Consolidated Bonds	March 31, 2020	December 31, 2019
Non-callable/non-putable	$ 527,829	$ 526,854
Callable	69,415	93,976
Total principal amount	$ 597,244	$ 620,830

Table 8.4 - Consolidated Bonds Outstanding by Contractual Maturity or Next Call Date
(dollars in millions)

Year of Contractual Maturity or Next Call Date	March 31, 2020	December 31, 2019
Due in 1 year or less	$ 450,149	$ 473,631
Due after 1 year through 2 years	81,563	83,110
Due after 2 years through 3 years	24,487	22,035
Due after 3 years through 4 years	13,139	13,407
Due after 4 years through 5 years	9,796	10,562
Thereafter	18,110	18,085
Total principal amount	$ 597,244	$ 620,830

Note 9 - Capital

Each FHLBank is subject to three capital requirements under its capital plan and the FHFA rules and regulations. Regulatory capital does not include AOCI, but does include mandatorily redeemable capital stock.

1. *Risk-based capital.* Each FHLBank must maintain at all times permanent capital, defined as Class B stock and retained earnings, in an amount at least equal to the sum of its credit risk, market risk, and operations risk capital requirements, all of which are calculated in accordance with the rules and regulations of the FHFA.

2. *Total regulatory capital.* Each FHLBank must maintain at all times a total capital-to-assets ratio of at least four percent. Total regulatory capital is the sum of permanent capital, Class A stock, any general loss allowance, if consistent with GAAP and not established for specific assets, and other amounts from sources determined by the FHFA as available to absorb losses.

3. *Leverage capital.* Each FHLBank must maintain at all times a leverage capital-to-assets ratio of at least five percent. Leverage capital is defined as the sum of permanent capital weighted 1.5 times and all other capital without a weighting factor.

The FHFA may require an FHLBank to maintain greater minimum capital levels than are required based on FHFA rules and regulation. At March 31, 2020, each FHLBank was in compliance with FHFA regulatory capital requirements.

Table 9.1 - Risk-Based Capital Requirements at March 31, 2020
(dollars in millions)

	Risk-Based Capital	
FHLBank	Minimum Requirement	Actual
Boston	$ 479	$ 3,746
New York	1,044	9,132
Pittsburgh	648	5,239
Atlanta	1,663	8,838
Cincinnati	571	6,464
Indianapolis	533	3,545
Chicago	1,297	6,104
Des Moines	673	6,948
Dallas	925	3,974
Topeka	408	2,335
San Francisco	1,411	6,718

Table 9.2 - Regulatory Capital Requirements at March 31, 2020
(dollars in millions)

	Regulatory Capital Ratio		Regulatory Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	4.0%	5.4%	$ 2,756	$ 3,746
New York	4.0%	5.0%	7,309	9,132
Pittsburgh	4.0%	4.5%	4,626	5,239
Atlanta	4.0%	4.7%	7,576	8,838
Cincinnati	4.0%	5.3%	4,900	6,464
Indianapolis	4.0%	4.5%	3,147	3,545
Chicago	4.0%	5.9%	4,138	6,104
Des Moines	4.0%	5.5%	5,043	6,948
Dallas	4.0%	4.7%	3,352	3,974
Topeka	4.0%	4.4%	2,528	2,785
San Francisco	4.0%	5.4%	4,995	6,718

Table 9.3 - Leverage Capital Requirements at March 31, 2020
(dollars in millions)

	Leverage Capital Ratio		Leverage Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	5.0%	8.2%	$ 3,445	$ 5,618
New York	5.0%	7.5%	9,137	13,698
Pittsburgh	5.0%	6.8%	5,783	7,859
Atlanta	5.0%	7.0%	9,470	13,256
Cincinnati	5.0%	7.9%	6,125	9,695
Indianapolis	5.0%	6.8%	3,933	5,318
Chicago	5.0%	8.9%	5,172	9,155
Des Moines	5.0%	8.3%	6,303	10,421
Dallas	5.0%	7.1%	4,190	5,961
Topeka	5.0%	6.3%	3,159	3,953
San Francisco	5.0%	8.1%	6,244	10,078

Each FHLBank is a cooperative whose member financial institutions own most of the FHLBank's capital stock. Former members (including certain non-members that own FHLBank capital stock as a result of merger or acquisition, relocation, charter termination, voluntary termination, or involuntary termination of an FHLBank member) own the remaining capital stock to support business transactions still carried on an FHLBank's statement of condition. Shares of capital stock cannot be purchased or sold except between an FHLBank and its members at its $100 per share par value, as mandated by each FHLBank's capital plan. Members can redeem Class A stock by giving six-months written notice, and members can redeem Class B stock by giving five-years written notice, subject to certain restrictions. An FHLBank's board of directors may declare and pay dividends in either cash or capital stock, assuming the FHLBank is in compliance with FHFA rules.

Restricted Retained Earnings

The Joint Capital Enhancement Agreement, as amended (Capital Agreement), is intended to enhance the capital position of each FHLBank. The Capital Agreement provides that each FHLBank will allocate 20% of its net income each quarter to a separate restricted retained earnings account until the balance of that account equals at least one percent of that FHLBank's average balance of outstanding consolidated obligations for the previous quarter. These restricted retained earnings are not available to pay dividends.

Mandatorily Redeemable Capital Stock

An FHLBank generally reclassifies capital stock subject to redemption from capital to the mandatorily redeemable capital stock liability upon expiration of a grace period, if applicable, after a member exercises a written redemption right, or gives notice of intent to withdraw from membership, or attains non-member status by merger or acquisition, relocation, charter termination, or involuntary termination from membership. Shares of capital stock meeting these definitions are reclassified to mandatorily redeemable capital stock at fair value. Dividends related to capital stock classified as mandatorily redeemable capital stock are accrued at the expected dividend rate and reported as interest expense on the Combined Statement of Income. For the three months ended March 31, 2020 and 2019, dividends on mandatorily redeemable capital stock of $18 million and $16 million were recorded as interest expense.

A member may cancel or revoke its written notice of redemption or its notice of withdrawal from membership prior to the end of the applicable redemption period. Each FHLBank's capital plan provides the terms for cancellation fees that may be incurred by the member upon cancellation.

Table 9.4 presents capital stock subject to mandatory redemption. Payment is contingent on, among other things, each FHLBank's waiting period and the FHLBank's ability to meet its minimum regulatory capital requirements. These amounts have been classified as a liability on the Combined Statement of Condition.

Table 9.4 - Mandatorily Redeemable Capital Stock Rollforward
(dollars in millions)

	Three Months Ended March 31,	
	2020	2019
Balance, beginning of year	$ 1,378	$ 1,062
Capital stock subject to mandatory redemption reclassified from capital	768	57
Redemption/repurchase of mandatorily redeemable capital stock	(423)	(86)
Other(1)	3	2
Balance, end of year	$ 1,726	$ 1,035

(1) Represents a direct purchase of mandatorily redeemable capital stock by a member and rounding adjustments.

Table 9.5 presents the amount of mandatorily redeemable capital stock by contractual year of redemption. The year of redemption in the table is the end of the appropriate redemption period applicable to each FHLBank's capital plan. An FHLBank is not required to redeem membership stock until either five years or six months, depending on the type of capital stock issuable under its capital plan, after the membership is terminated or the FHLBank receives notice of withdrawal. However, for certain membership terminations such as mergers, consolidations, terminations related to insolvency, or out-of-district relocations, the FHLBank may recalculate the former member's stock requirement following that termination and the stock may be deemed excess stock subject to repurchase at the FHLBank's discretion. An FHLBank is not required to redeem activity-based stock until the later of the expiration of the notice of redemption or until the activity to which the capital stock relates no longer remains outstanding. If activity-based stock becomes excess stock as a result of an activity no longer remaining outstanding, an FHLBank may repurchase those shares, at its sole discretion, subject to the statutory and regulatory restrictions on excess capital stock redemption.

Table 9.5 - Mandatorily Redeemable Capital Stock by Contractual Year of Redemption
(dollars in millions)

	March 31, 2020	December 31, 2019
Year 1	$ 86	$ 140
Year 2	28	18
Year 3	8	18
Year 4	65	63
Year 5	988	481
Thereafter(1)	511	618
Past contractual redemption date due to remaining activity(2)	40	40
Total	$ 1,726	$ 1,378

(1) Represents mandatorily redeemable capital stock resulting from an FHFA rule effective February 19, 2016, that made captive insurance companies ineligible for FHLBank membership. Captive insurance company members that were admitted as FHLBank members prior to September 12, 2014, will have their memberships terminated no later than February 19, 2021. The related mandatorily redeemable capital stock is not required to be redeemed until five years after the member's termination.
(2) Represents mandatorily redeemable capital stock that is past the end of the contractual redemption period because there is activity outstanding to which the mandatorily redeemable capital stock relates.

Excess Capital Stock

Excess capital stock is defined as the amount of stock held by a member (or former member) in excess of that institution's minimum stock ownership requirement. FHFA rules limit the ability of an FHLBank to create member excess capital stock under certain circumstances. An FHLBank may not pay dividends in the form of capital stock or issue new excess capital stock to members if that FHLBank's excess capital stock exceeds one percent of its total assets or if the issuance of excess capital stock would cause that FHLBank's excess capital stock to exceed one percent of its total assets. At March 31, 2020, the FHLBank of Cincinnati had excess capital stock outstanding totaling more than one percent of its total assets.

Capital Classification Determination

The FHFA determines each FHLBank's capital classification on at least a quarterly basis. If an FHLBank is determined to be other than adequately capitalized, that FHLBank becomes subject to additional supervisory authority by the FHFA. Before implementing a reclassification, the Director of the FHFA is required to provide that FHLBank with written notice of the proposed action and an opportunity to submit a response. Each FHLBank was classified by the FHFA as adequately capitalized as of the date of the FHFA's most recent notification to each FHLBank.

Note 10 - Accumulated Other Comprehensive Income (Loss)

Table 10.1 presents a summary of changes in accumulated other comprehensive income (loss) for the three months ended March 31, 2020 and 2019.

Table 10.1 - Accumulated Other Comprehensive Income (Loss)
(dollars in millions)

	Net Unrealized Gains (Losses) on AFS Securities (Note 3)	Net Non-Credit Portion of OTTI Gains (Losses) on AFS Securities (Note 3)	Net Non-Credit Portion of OTTI Gains (Losses) on HTM Securities (Note 3)	Net Unrealized Gains (Losses) Relating to Hedging Activities (Note 6)	Pension and Postretirement Benefits	Total Accumulated Other Comprehensive Income (Loss)
Balance, December 31, 2018	$ 318	$ 425	$ (268)	$ (25)	$ (108)	$ 342
Other comprehensive income before reclassifications						
Unrealized gains (losses)	230	—	—	(81)	—	149
Non-credit OTTI losses	—	(1)	—	—	—	(1)
Change in fair value of other-than-temporarily impaired securities	—	5	—	—	—	5
Accretion of non-credit loss	—	—	14	—	—	14
Reclassifications from accumulated other comprehensive income (loss) to net income						
Non-credit OTTI to credit OTTI	—	1	—	—	—	1
Amortization on hedging activities	—	—	—	11	—	11
Amortization - pension and postretirement	—	—	—	—	6	6
Net current period other comprehensive income (loss)	230	5	14	(70)	6	185
Balance, March 31, 2019	$ 548	$ 430	$ (254)	$ (95)	$ (102)	$ 527
Balance, December 31, 2019	$ 492	$ 362	$ (179)	$ (199)	$ (132)	$ 344
Other comprehensive income before reclassifications						
Unrealized gains (losses)	(1,835)	—	—	(298)	—	(2,133)
Non-credit losses included in basis of securities sold	—	—	20	—	—	20
Accretion of non-credit loss	—	—	9	—	—	9
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	(83)	—	—	—	—	(83)
Amortization on hedging activities	—	—	—	7	—	7
Amortization - pension and postretirement	—	—	—	—	(6)	(6)
Net current period other comprehensive income (loss)	(1,918)	—	29	(291)	(6)	(2,186)
Adjustment for the Adoption of ASU 2016-13, as amended(1)	362	(362)	—	—	—	—
Balance, March 31, 2020	$ (1,064)	$ —	$ (150)	$ (490)	$ (138)	$ (1,842)

(1) With the adoption of changes to accounting standards on measurement of credit losses for financial instruments on January 1, 2020, OTTI assessment was replaced with an allowance for credit losses (See *Note 1 - Summary of Significant Accounting Policies* and *Note 2 - Recently Issued and Adopted Accounting Guidance* for further information).

Note 11 - Fair Value

The fair value amounts recorded on the Combined Statement of Condition and presented in the note disclosures for the periods presented have been determined by the FHLBanks using available market and other pertinent information and reflect each FHLBank's best judgment of appropriate valuation methods. GAAP defines fair value as the price 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 (i.e., an exit price). Although each FHLBank uses its best judgment in estimating the fair value of its financial instruments, there are inherent limitations in any valuation technique. Therefore, the fair values may not be indicative of the amounts that would have been realized in market transactions at March 31, 2020 and December 31, 2019. Additionally, these values do not represent an estimate of the overall market value of the FHLBanks as going concerns, which would take into account future business opportunities and the net profitability of assets and liabilities.

Fair Value Hierarchy

GAAP establishes a fair value hierarchy and requires an entity to maximize the use of significant observable inputs and minimize the use of significant unobservable inputs when measuring fair value. The inputs are evaluated and an overall level for the fair value measurement is determined. This overall level is an indication of market observability of the fair value measurement for the asset or liability. An entity must disclose the level within the fair value hierarchy in which the measurements are classified.

The fair value hierarchy prioritizes the inputs used to measure fair value into three broad levels:

- Level 1 Inputs. Quoted prices (unadjusted) for identical assets or liabilities in an active market that the reporting entity can access on the measurement date. An active market for the asset or liability is a market in which the transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis.

- Level 2 Inputs. Inputs other than quoted prices within Level 1, that are observable inputs for the asset or liability, either directly or indirectly. If the asset or liability has a specified or contractual term, a Level 2 input must be observable for substantially the full term of the asset or liability. Level 2 inputs include the following: (1) quoted prices for similar assets or liabilities in active markets; (2) quoted prices for identical or similar assets or liabilities in markets that are not active; (3) inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates and yield curves that are observable at commonly quoted intervals, and implied volatilities); and (4) inputs that are derived principally from or corroborated by observable market data by correlation or other means.

- Level 3 Inputs. Unobservable inputs for the asset or liability.

Each FHLBank reviews its fair value hierarchy classifications on a quarterly basis. Changes in the observability of the valuation inputs may result in a reclassification of certain assets or liabilities. The FHLBanks had no transfers of assets or liabilities into or out of Level 3 of the fair value hierarchy during the three months ended March 31, 2020 and 2019.

Table 11.1 presents the net carrying value/carrying value, fair value, and fair value hierarchy of financial assets and liabilities of the FHLBanks at March 31, 2020 and December 31, 2019. The FHLBanks record trading securities, available-for-sale securities, derivative assets, derivative liabilities, certain advances, certain consolidated obligations, and certain other assets at fair value on a recurring basis, and on occasion certain private-label MBS, certain mortgage loans held for portfolio, and certain other assets at fair value on a non-recurring basis. The FHLBanks record all other financial assets and liabilities at amortized cost. Refer to Table 11.2 for further details about the financial assets and liabilities held at fair value on either a recurring or non-recurring basis.

Table 11.1 - Fair Value Summary
(dollars in millions)

	March 31, 2020					
		Fair Value				
Financial Instruments	**Net Carrying Value**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Netting Adjustment and Cash Collateral(1)**
Assets						
Cash and due from banks	$ 20,318	$ 20,318	$ 20,318	$ —	$ —	$ —
Interest-bearing deposits	15,730	15,730	7,745	7,985	—	—
Securities purchased under agreements to resell	20,294	20,294	—	20,294	—	—
Federal funds sold	74,356	74,355	—	74,355	—	—
Trading securities	60,028	60,028	13,971	46,057	—	—
Available-for-sale securities	106,283	106,283	—	103,682	2,601	—
Held-to-maturity securities	73,994	74,886	—	72,319	2,567	—
Advances(2)	806,944	807,421	—	807,421	—	—
Mortgage loans held for portfolio	74,562	77,532	—	77,428	104	—
Mortgage loans held for sale(3)	92	92	—	92	—	—
Accrued interest receivable	1,874	1,874	—	1,874	—	—
Derivative assets, net	3,336	3,336	—	1,598	—	1,738
Other assets	276	278	226	52	—	—
Liabilities						
Deposits	15,053	15,053	—	15,053	—	—
Consolidated obligations						
Discount notes(4)	576,593	577,097	—	577,097	—	—
Bonds(5)	599,817	605,152	—	605,152	—	—
Total consolidated obligations	1,176,410	1,182,249	—	1,182,249	—	—
Mandatorily redeemable capital stock	1,726	1,732	1,732	—	—	—
Accrued interest payable	1,596	1,590	—	1,590	—	—
Derivative liabilities, net	194	194	—	7,395	—	(7,201)
Other liabilities	73	75	38	37	—	—

Financial Instruments	December 31, 2019 Carrying Value	Fair Value Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Assets						
Cash and due from banks	$ 4,960	$ 4,960	$ 4,960	$ —	$ —	$ —
Interest-bearing deposits	14,429	14,429	7,484	6,945	—	—
Securities purchased under agreements to resell	70,094	70,094	—	70,094	—	—
Federal funds sold	51,357	51,357	—	51,357	—	—
Trading securities	54,854	54,854	15,316	39,538	—	—
Available-for-sale securities	104,033	104,033	—	100,326	3,707	—
Held-to-maturity securities	80,228	80,946	—	77,802	3,144	—
Advances(2)	641,519	642,430	—	642,430	—	—
Mortgage loans held for portfolio	72,492	73,971	—	73,868	103	—
Mortgage loans held for sale(3)	83	83	—	83	—	—
Accrued interest receivable	1,971	1,971	—	1,971	—	—
Derivative assets, net	1,731	1,731	2	1,159	—	570
Other assets	303	303	250	53	—	—
Liabilities						
Deposits	10,404	10,404	—	10,404	—	—
Consolidated obligations						
Discount notes(4)	404,035	404,049	—	404,049	—	—
Bonds(5)	622,161	624,671	—	624,671	—	—
Total consolidated obligations	1,026,196	1,028,720	—	1,028,720	—	—
Mandatorily redeemable capital stock	1,378	1,384	1,384	—	—	—
Accrued interest payable	1,791	1,784	—	1,784	—	—
Derivative liabilities, net	77	77	—	2,579	—	(2,502)
Other liabilities	80	80	45	35	—	—

(1) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, and also cash collateral and related accrued interest held or placed by that FHLBank with the same clearing agent and/or counterparty.
(2) Includes $7,208 million and $7,183 million of advances recorded under fair value option at March 31, 2020 and December 31, 2019.
(3) Represents mortgage loans held for sale recorded under fair value option, included in other assets, net on the Combined Statement of Condition.
(4) Includes $41,205 million and $32,539 million of consolidated discount notes recorded under fair value option at March 31, 2020 and December 31, 2019.
(5) Includes $15,356 million and $25,212 million of consolidated bonds recorded under fair value option at March 31, 2020 and December 31, 2019.

Summary of Valuation Methodologies and Primary Inputs

A description of the valuation methodologies and primary inputs is disclosed in Note 18 - Fair Value, pages F-62 to F-64, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019. There were no significant changes in these valuation methodologies and primary inputs during the three months ended March 31, 2020.

Fair Value Measurements

Table 11.2 presents the fair value of assets and liabilities that are recorded on a recurring or non-recurring basis at March 31, 2020 and December 31, 2019, by level within the fair value hierarchy. The FHLBanks measure certain held-to-maturity securities and mortgage loans at fair value on a non-recurring basis due to the recognition of a credit loss. Real estate owned is measured using fair value when the asset's fair value less costs to sell is lower than its carrying amount.

Table 11.2 - Fair Value Measurements
(dollars in millions)

	March 31, 2020				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Recurring fair value measurements - Assets					
Trading securities					
Certificates of deposit	$ 275	$ —	$ 275	$ —	$ —
U.S. Treasury obligations	55,213	13,971	41,242	—	—
Other U.S. obligations	140	—	140	—	—
GSE and Tennessee Valley Authority obligations	2,824	—	2,824	—	—
Other non-MBS	271	—	271	—	—
U.S. obligations single-family MBS	8	—	8	—	—
GSE single-family MBS	55	—	55	—	—
GSE multifamily MBS	1,242	—	1,242	—	—
Total trading securities	60,028	13,971	46,057	—	—
Available-for-sale securities					
U.S. Treasury obligations	9,706	—	9,706	—	—
Other U.S. obligations	3,618	—	3,618	—	—
GSE and Tennessee Valley Authority obligations	13,250	—	13,250	—	—
State or local housing agency obligations	1,088	—	1,023	65	—
Federal Family Education Loan Program ABS	3,081	—	3,081	—	—
Other non-MBS	778	—	778	—	—
U.S. obligations single-family MBS	5,049	—	5,049	—	—
U.S. obligations multifamily MBS	249	—	249	—	—
GSE single-family MBS	7,379	—	7,379	—	—
GSE multifamily MBS	59,549	—	59,549	—	—
Private-label MBS	2,536	—	—	2,536	—
Total available-for-sale securities	106,283	—	103,682	2,601	—
Advances(2)	7,208	—	7,208	—	—
Mortgage loans held for sale(2)	92	—	92	—	—
Derivative assets, net					
Interest-rate related	3,279	—	1,541	—	1,738
Mortgage delivery commitments	57	—	57	—	—
Total derivative assets, net	3,336	—	1,598	—	1,738
Other assets	241	226	15	—	—
Total recurring assets at fair value	$ 177,188	$ 14,197	$ 158,652	$ 2,601	$ 1,738
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(2)	$ 41,205	$ —	$ 41,205	$ —	$ —
Bonds(2)	15,356	—	15,356	—	—
Total consolidated obligations	56,561	—	56,561	—	—
Derivative liabilities, net					
Interest-rate related	160	—	7,361	—	(7,201)
Mortgage delivery commitments	34	—	34	—	—
Total derivative liabilities, net	194	—	7,395	—	(7,201)
Total recurring liabilities at fair value	$ 56,755	$ —	$ 63,956	$ —	$ (7,201)
Non-recurring fair value measurements - Assets(3)					
Mortgage loans held for portfolio	$ 13	$ —	$ —	$ 13	
Real estate owned	1	—	—	1	
Total non-recurring assets at fair value	$ 14	$ —	$ —	$ 14	

	December 31, 2019				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Recurring fair value measurements - Assets					
Trading securities					
U.S. Treasury obligations	$ 50,478	$ 15,316	$ 35,162	$ —	$ —
Other U.S. obligations	150	—	150	—	—
GSE and Tennessee Valley Authority obligations	2,653	—	2,653	—	—
Other non-MBS	268	—	268	—	—
U.S. obligations single-family MBS	9	—	9	—	—
GSE single-family MBS	60	—	60	—	—
GSE multifamily MBS	1,236	—	1,236	—	—
Total trading securities	54,854	15,316	39,538	—	—
Available-for-sale securities					
Certificates of deposit	1,410	—	1,410	—	—
U.S. Treasury obligations	9,550	—	9,550	—	—
Other U.S. obligations	3,274	—	3,274	—	—
GSE and Tennessee Valley Authority obligations	12,761	—	12,761	—	—
State or local housing agency obligations	1,083	—	1,018	65	—
Federal Family Education Loan Program ABS	3,352	—	3,352	—	—
Other non-MBS	747	—	747	—	—
U.S. obligations single-family MBS	5,296	—	5,296	—	—
U.S. obligations multifamily MBS	283	—	283	—	—
GSE single-family MBS	7,654	—	7,654	—	—
GSE multifamily MBS	54,981	—	54,981	—	—
Private-label MBS	3,642	—	—	3,642	—
Total available-for-sale securities	104,033	—	100,326	3,707	—
Advances(2)	7,183	—	7,183	—	—
Mortgage loans held for sale(2)	83	—	83	—	—
Derivative assets, net					
Interest-rate related	1,725	2	1,153	—	570
Mortgage delivery commitments	6	—	6	—	—
Total derivative assets, net	1,731	2	1,159	—	570
Other assets	268	250	18	—	—
Total recurring assets at fair value	$ 168,152	$ 15,568	$ 148,307	$ 3,707	$ 570
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(2)	$ 32,539	$ —	$ 32,539	$ —	$ —
Bonds(2)	25,212	—	25,212	—	—
Total consolidated obligations	57,751	—	57,751	—	—
Derivative liabilities, net					
Interest-rate related	76	—	2,578	—	(2,502)
Mortgage delivery commitments	1	—	1	—	—
Total derivative liabilities, net	77	—	2,579	—	(2,502)
Total recurring liabilities at fair value	$ 57,828	$ —	$ 60,330	$ —	$ (2,502)
Non-recurring fair value measurements - Assets(3)					
Held-to-maturity securities					
Private-label MBS	$ 7	$ —	$ —	$ 7	
Mortgage loans held for portfolio	21	—	—	21	
Real estate owned	4	—	—	4	
Total non-recurring assets at fair value	$ 32	$ —	$ —	$ 32	

(1) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, and also cash collateral and related accrued interest held or placed by that FHLBank with the same clearing agent and/or counterparty.
(2) Represents financial instruments recorded under fair value option at March 31, 2020 and December 31, 2019.
(3) The fair value information presented is as of the date the fair value adjustment was recorded during the period.

Level 3 Disclosures for All Assets and Liabilities that are Measured at Fair Value on a Recurring Basis

Table 11.3 presents a rollforward of assets and liabilities measured at fair value on a recurring basis and classified as Level 3 during the three months ended March 31, 2020 and 2019.

Table 11.3 - Rollforward of Level 3 Assets and Liabilities
(dollars in millions)

	Three Months Ended March 31, 2020		Three Months Ended March 31, 2019	
	State and Local Housing Agency Obligations	Private-Label MBS	State and Local Housing Agency Obligations	Private-Label MBS
Balance, at beginning of period	$ 65	$ 3,642	$ 50	$ 4,473
Total gains (losses) included in earnings				
Net gains (losses) on sale of available-for-sale securities	—	81	—	—
Interest income	—	25	—	36
Net other-than-temporary impairment losses	—	—	—	(1)
Provision for credit losses on available-for-sale securities	—	(42)	—	—
Total gains (losses) included in other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	—	(274)	—	—
Net change in fair value of other-than-temporarily impaired securities	—	(30)	—	4
Purchases, issuances, sales, and settlements				
Sales	—	(726)	—	—
Settlements	—	(141)	—	(200)
Transfers from held-to-maturity to available-for-sale securities	—	1	—	—
Balance, at end of period	$ 65	$ 2,536	$ 50	$ 4,312
Total amount of unrealized gains (losses) for the period included in OCI relating to assets held at the end of the period	$ —	$ (261)		
Total amount of gains (losses) for the period included in earnings attributable to the change in unrealized gains/losses relating to assets held at the end of the period	$ —	$ 47	$ —	$ 20

Fair Value Option

The fair value option provides an irrevocable option to elect fair value as an alternative measurement for selected financial assets, financial liabilities, unrecognized firm commitments, and written loan commitments not previously carried at fair value. It requires entities to display the fair value of those assets and liabilities for which the entity has chosen to use fair value on the face of the statement of condition. Fair value is used for both the initial and subsequent measurement of the designated assets, liabilities and commitments, with the changes in fair value recognized in net income. Interest income and interest expense on advances and consolidated obligations at fair value are recognized solely on the contractual amount of interest due or unpaid. Any transaction fees or costs are immediately recognized into non-interest income or non-interest expense.

The FHLBanks of New York, Cincinnati, Chicago, and San Francisco (Electing FHLBanks) have each elected the fair value option for certain financial instruments when a hedge relationship does not qualify for hedge accounting or may be at risk for not meeting hedge effectiveness requirements. These fair value elections were made primarily in an effort to mitigate the potential income statement volatility that can arise when an economic derivative is adjusted for changes in fair value, but the related hedged item is not.

Table 11.4 presents net gains (losses) recognized in earnings related to financial assets and liabilities for which the fair value option was elected during the three months ended March 31, 2020 and 2019.

Table 11.4 - Fair Value Option - Financial Assets and Liabilities
(dollars in millions)

	Three Months Ended March 31,	
Net Gains (Losses) from Changes in Fair Value Recognized in Earnings	**2020**	**2019**
Advances	$ 151	$ 55
Mortgage loans held for sale(1)	2	—
Consolidated discount notes	(46)	—
Consolidated bonds	(51)	(32)
Total net gains (losses)	$ 56	$ 23

(1) Included in other assets, net on the Combined Statement of Condition.

For instruments for which the fair value option has been elected, the related contractual interest income, contractual interest expense, and the discount amortization on fair value option discount notes are recorded as part of net interest income on the Combined Statement of Income. The remaining changes in fair value for instruments for which the fair value option has been elected are recorded as net gains (losses) on financial instruments held under fair value option on the Combined Statement of Income, except for changes in fair value related to instrument specific credit risk, which are recorded in AOCI on the Combined Statement of Condition. Each of the Electing FHLBanks determined that none of the remaining changes in fair value were related to instrument specific credit risk during the three months ended March 31, 2020 and 2019. In determining that there has been no change in instrument specific credit risk period to period, the Electing FHLBanks primarily considered the following factors:

- The FHLBanks are federally chartered GSEs, and as a result of this status, the FHLBanks' consolidated obligations have historically received the same credit ratings as the government bond credit rating of the United States, even though they are not obligations of the United States and are not guaranteed by the United States.

- Each FHLBank is jointly and severally liable with the other FHLBanks for the payment of principal and interest on all consolidated obligations of each of the FHLBanks.

Table 11.5 presents the difference between the aggregate fair value and the aggregate unpaid principal balance outstanding for advances, mortgage loans held for sale, and consolidated obligations for which the fair value option has been elected as of March 31, 2020 and December 31, 2019.

Table 11.5 - Aggregate Fair Value and Aggregate Unpaid Balance
(dollars in millions)

	March 31, 2020			December 31, 2019		
	Aggregate Fair Value	**Aggregate Unpaid Principal Balance**	**Aggregate Fair Value Over/ (Under) Aggregate Unpaid Principal Balance**	**Aggregate Fair Value**	**Aggregate Unpaid Principal Balance**	**Aggregate Fair Value Over/ (Under) Aggregate Unpaid Principal Balance**
Advances(1)	$ 7,208	$ 6,934	$ 274	$ 7,183	$ 7,060	$ 123
Mortgage loans held for sale(2)	92	88	4	83	81	2
Consolidated discount notes	41,205	41,171	34	32,539	32,583	(44)
Consolidated bonds	15,356	15,235	121	25,212	25,096	116

(1) At March 31, 2020 and December 31, 2019, none of the advances were 90 days or more past due or had been placed on non-accrual status.
(2) Included in other assets, net on the Combined Statement of Condition.

Note 12 - Commitments and Contingencies

Off-Balance Sheet Commitments

Table 12.1 presents off-balance sheet commitments at March 31, 2020 and December 31, 2019. Each FHLBank has deemed it unnecessary to record any liability for credit losses on these commitments at March 31, 2020 and December 31, 2019.

Table 12.1 - Off-Balance Sheet Commitments
(dollars in millions)

	March 31, 2020			December 31, 2019
Notional amount	**Expire Within One Year**	**Expire After One Year**	**Total**	**Total**
Standby letters of credit notional amount(1)	$ 139,661	$ 38,566	$ 178,227	$ 178,373
Unsettled consolidated bonds, principal amount	6,274	—	6,274	758
Commitments to purchase mortgage loans	5,852	—	5,852	2,218
Commitments for standby bond purchases	294	2,471	2,765	2,522
Unsettled consolidated discount notes, principal amount	2,682	—	2,682	6,629
Unused lines of credit - advances	2,331	—	2,331	2,326
Commitments to fund additional advances	1,997	126	2,123	1,462
Other	3	—	3	1

(1) Excludes unconditional commitments to issue standby letters of credit of $77 million and $87 million at March 31, 2020 and December 31, 2019.

Standby Letters of Credit. An FHLBank issues standby letters of credit on behalf of its members to support certain obligations of the members (or member's customers) to third-party beneficiaries. These standby letters of credit are subject to the same collateralization and borrowing limits that are applicable to advances. Standby letters of credit may be offered to assist members in facilitating residential housing finance, community lending, and asset-liability management, and to provide liquidity. In particular, members often use standby letters of credit as collateral for deposits from federal, state, and local government agencies. Standby letters of credit are executed for members for a fee. If an FHLBank is required to make payment for a beneficiary's draw, the member either reimburses the FHLBank for the amount drawn or, subject to the applicable FHLBank's discretion, the amount drawn may be converted into a collateralized advance to the member. However, standby letters of credit usually expire without being drawn upon. At March 31, 2020, standby letters of credit have original expiration periods of up to 20 years, expiring no later than 2039. The carrying value of guarantees related to standby letters of credit are recorded in other liabilities and were $159 million and $173 million at March 31, 2020 and December 31, 2019.

Each FHLBank monitors the creditworthiness of its members that have standby letters of credit. In addition, standby letters of credit are subject to the same collateralization and borrowing limits that apply to advances and are fully collateralized at the time of issuance.

Standby Bond-Purchase Agreements. Certain FHLBanks have entered into standby bond-purchase agreements with state housing authorities within their district whereby these FHLBanks agree to provide liquidity for a fee. If required, the affected FHLBanks will purchase and hold the state housing authority's bonds until the designated marketing agent can find a suitable investor or the state housing authority repurchases the bond according to a schedule established by the standby bond-purchase agreement. Each standby bond-purchase agreement dictates the specific terms that would require the affected FHLBank to purchase the bond and typically allows the FHLBank to terminate the agreement upon the occurrence of a default event of the issuer. The standby bond-purchase commitments entered into by these FHLBanks have original expiration periods of up to seven years, currently expiring no later than 2026, although some are renewable at the option of the affected FHLBank. At both March 31, 2020 and December 31, 2019, the FHLBanks had standby bond-purchase commitments with 13 state housing authorities. During the three months ended March 31, 2020, the FHLBanks were required to purchase one bond for $122 million under these agreements. During the three months ended March 31, 2019, the FHLBanks were not required to purchase any bonds under these agreements.

Pledged Collateral

Certain FHLBanks pledged securities, as collateral, related to derivatives. (See *Note 6 - Derivatives and Hedging Activities* for additional information about the FHLBanks' pledged collateral and other credit-risk-related contingent features.)

Legal Proceedings

The FHLBanks are subject to legal proceedings arising in the normal course of business. The FHLBanks would record an accrual for a loss contingency when it is probable that a loss has been incurred and the amount can be reasonably estimated. After consultation with legal counsel, management of each FHLBank does not anticipate that the ultimate liability, if any, arising out of these matters will have a material effect on its FHLBank's financial condition, results of operations, or cash flows.

Note 13 - Subsequent Events

Subsequent events have been evaluated from April 1, 2020, through the time of this Combined Financial Report publication. No significant subsequent events were identified, except for the declaration of dividends or repurchase or redemption of excess capital stock, which generally occur in the normal course of business unless there are regulatory or self-imposed restrictions.

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CONDITION
MARCH 31, 2020
(Unaudited)

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 20,318	$ —	$ 807	$ 38
Investments, net	350,685	(132)	18,072	42,332
Advances	806,944	—	45,076	136,151
Mortgage loans held for portfolio, net	74,562	1	4,528	3,210
Other assets, net	6,594	(4)	418	1,002
Total assets	$ 1,259,103	$ (135)	$ 68,901	$ 182,733
Liabilities				
Deposits	$ 15,053	$ (19)	$ 860	$ 1,703
Consolidated obligations				
Discount notes	576,593	—	39,692	90,250
Bonds	599,817	(118)	24,577	81,089
Total consolidated obligations	1,176,410	(118)	64,269	171,339
Mandatorily redeemable capital stock	1,726	—	6	5
Other liabilities	5,990	(1)	275	684
Total liabilities	1,199,179	(138)	65,410	173,731
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	40,589	(1)	2,266	7,313
Class A putable ($100 par value) issued and outstanding	448	—	—	—
Total capital stock	41,037	(1)	2,266	7,313
Retained earnings				
Unrestricted	15,701	2	1,116	1,108
Restricted	5,028	—	357	706
Total retained earnings	20,729	2	1,473	1,814
Accumulated other comprehensive income (loss)	(1,842)	2	(248)	(125)
Total capital	59,924	3	3,491	9,002
Total liabilities and capital	$ 1,259,103	$ (135)	$ 68,901	$ 182,733

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 3,947	$ 4,247	$ 3,924	$ 4,685	$ 62	$ 611	$ 1,217	$ 452	$ 328
27,900	46,429	25,665	23,888	37,249	35,634	31,035	19,597	43,016
78,093	137,037	80,425	38,927	55,005	79,757	46,923	31,678	77,872
5,238	281	11,923	10,649	10,647	9,546	4,282	11,018	3,239
480	1,398	573	517	480	520	350	445	415
$ 115,658	$ 189,392	$ 122,510	$ 78,666	$ 103,443	$ 126,068	$ 83,807	$ 63,190	$ 124,870
$ 812	$ 1,766	$ 1,186	$ 2,822	$ 1,231	$ 1,267	$ 1,729	$ 975	$ 721
52,063	96,490	79,660	29,653	47,095	33,071	43,953	25,564	39,102
56,954	81,856	34,668	42,079	48,593	84,266	34,186	33,730	77,937
109,017	178,346	114,328	71,732	95,688	117,337	78,139	59,294	117,039
303	1	572	323	328	96	7	2	83
567	461	549	648	1,131	635	216	205	620
110,699	180,574	116,635	75,525	98,378	119,335	80,091	60,476	118,463
3,630	6,652	4,739	2,098	1,954	4,653	2,700	1,354	3,231
—	—	—	—	—	—	—	448	—
3,630	6,652	4,739	2,098	1,954	4,653	2,700	1,802	3,231
883	1,626	691	867	3,233	1,677	1,063	744	2,691
422	559	462	257	589	522	204	237	713
1,305	2,185	1,153	1,124	3,822	2,199	1,267	981	3,404
24	(19)	(17)	(81)	(711)	(119)	(251)	(69)	(228)
4,959	8,818	5,875	3,141	5,065	6,733	3,716	2,714	6,407
$ 115,658	$ 189,392	$ 122,510	$ 78,666	$ 103,443	$ 126,068	$ 83,807	$ 63,190	$ 124,870

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CONDITION
DECEMBER 31, 2019

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 4,960	$ 1	$ 69	$ 603
Investments, net	374,995	(126)	16,144	56,832
Advances	641,519	1	34,596	100,695
Mortgage loans held for portfolio, net	72,492	2	4,501	3,173
Other assets, net	5,147	(5)	353	759
Total assets	$ 1,099,113	$ (127)	$ 55,663	$ 162,062
Liabilities				
Deposits	$ 10,404	$ (12)	$ 674	$ 1,194
Consolidated obligations				
Discount notes	404,035	1	27,681	73,959
Bonds	622,161	(116)	23,889	78,764
Total consolidated obligations	1,026,196	(115)	51,570	152,723
Mandatorily redeemable capital stock	1,378	—	6	5
Other liabilities	5,708	(1)	268	608
Total liabilities	1,043,686	(128)	52,518	154,530
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	34,047	—	1,869	5,779
Class A putable ($100 par value) issued and outstanding	448	—	—	—
Total capital stock	34,495	—	1,869	5,779
Retained earnings				
Unrestricted	15,686	1	1,114	1,116
Restricted	4,902	—	349	685
Total retained earnings	20,588	1	1,463	1,801
Accumulated other comprehensive income (loss)	344	—	(187)	(48)
Total capital	55,427	1	3,145	7,532
Total liabilities and capital	$ 1,099,113	$ (127)	$ 55,663	$ 162,062

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 21	$ 911	$ 21	$ 220	$ 29	$ 1,029	$ 21	$ 1,917	$ 118
24,573	50,617	34,389	23,577	38,882	38,465	33,918	20,087	37,637
65,610	97,167	47,370	32,480	50,508	80,360	37,117	30,241	65,374
5,114	296	11,235	10,815	10,000	9,334	4,075	10,633	3,314
406	866	477	419	408	415	251	399	399
$ 95,724	$ 149,857	$ 93,492	$ 67,511	$ 99,827	$ 129,603	$ 75,382	$ 63,277	$ 106,842
$ 573	$ 1,492	$ 951	$ 960	$ 847	$ 1,112	$ 1,286	$ 790	$ 537
23,141	52,134	49,084	17,677	41,675	29,531	34,328	27,448	27,376
66,808	88,503	38,440	44,715	50,474	91,553	35,746	32,013	71,372
89,949	140,637	87,524	62,392	92,149	121,084	70,074	59,461	98,748
344	1	22	323	324	206	7	2	138
385	564	550	679	1,053	475	217	232	678
91,251	142,694	89,047	64,354	94,373	122,877	71,584	60,485	100,101
3,055	4,988	3,367	1,974	1,713	4,517	2,466	1,319	3,000
—	—	—	—	—	—	—	448	—
3,055	4,988	3,367	1,974	1,713	4,517	2,466	1,767	3,000
911	1,616	648	864	3,197	1,661	1,039	765	2,754
415	537	446	251	573	504	194	235	713
1,326	2,153	1,094	1,115	3,770	2,165	1,233	1,000	3,467
92	22	(16)	68	(29)	44	99	25	274
4,473	7,163	4,445	3,157	5,454	6,726	3,798	2,792	6,741
$ 95,724	$ 149,857	$ 93,492	$ 67,511	$ 99,827	$ 129,603	$ 75,382	$ 63,277	$ 106,842

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF INCOME
THREE MONTHS ENDED MARCH 31, 2020 and 2019
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
March 31, 2020				
Interest income				
Advances	$ 2,892	$ 1	$ 169	$ 465
Investments	1,734	(2)	76	249
Mortgage loans held for portfolio	566	—	37	26
Other interest income	1	1	—	—
Total interest income	5,193	—	282	740
Interest expense				
Consolidated obligations - Discount notes	1,523	1	127	227
Consolidated obligations - Bonds	2,710	(3)	124	357
Other interest expense	45	—	1	3
Total interest expense	4,278	(2)	252	587
Net interest income	915	2	30	153
Provision (reversal) for credit losses	43	—	(1)	—
Net interest income after provision (reversal) for credit losses	872	2	31	153
Non-interest income (loss)	192	(11)	38	8
Non-interest expense	365	(8)	22	44
Affordable Housing Program assessments	72	—	5	12
Net income (loss)	$ 627	$ (1)	$ 42	$ 105
March 31, 2019				
Interest income				
Advances	$ 4,772	$ (1)	$ 275	$ 692
Investments	2,288	(2)	109	280
Mortgage loans held for portfolio	562	2	37	25
Other interest income	2	2	—	—
Total interest income	7,624	1	421	997
Interest expense				
Consolidated obligations - Discount notes	2,561	—	178	315
Consolidated obligations - Bonds	3,733	—	155	499
Other interest expense	56	(1)	2	6
Total interest expense	6,350	(1)	335	820
Net interest income	1,274	2	86	177
Provision (reversal) for credit losses	1	1	—	—
Net interest income after provision (reversal) for credit losses	1,273	1	86	177
Non-interest income (loss)	63	(6)	(7)	13
Non-interest expense	334	(8)	19	40
Affordable Housing Program assessments	102	1	6	15
Net income (loss)	$ 900	$ 2	$ 54	$ 135

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 283	$ 419	$ 176	$ 169	$ 238	$ 399	$ 163	$ 131	$ 279
138	220	182	114	240	156	122	84	155
45	4	89	82	87	78	34	85	(1)
—	—	—	—	—	—	—	—	—
466	643	447	365	565	633	319	300	433
101	211	176	73	185	110	115	93	104
261	342	186	224	228	410	154	151	276
8	5	3	5	6	4	4	2	4
370	558	365	302	419	524	273	246	384
96	85	82	63	146	109	46	54	49
3	—	—	—	2	—	1	(1)	39
93	85	82	63	144	109	45	55	10
(31)	93	31	(4)	2	36	35	(23)	18
21	58	24	26	57	43	23	19	36
5	12	9	3	9	10	6	1	—
$ 36	$ 108	$ 80	$ 30	$ 80	$ 92	$ 51	$ 12	$ (8)
$ 538	$ 656	$ 403	$ 212	$ 358	$ 715	$ 238	$ 188	$ 498
150	328	209	137	252	248	203	112	262
42	4	89	96	76	69	23	73	26
—	—	—	—	—	—	—	—	—
730	988	701	445	686	1,032	464	373	786
187	372	312	119	281	271	196	149	181
409	466	263	263	279	595	191	158	455
4	6	4	6	8	7	5	3	6
600	844	579	388	568	873	392	310	642
130	144	122	57	118	159	72	63	144
—	—	—	—	—	—	—	—	—
130	144	122	57	118	159	72	63	144
4	7	(18)	3	18	5	16	13	15
25	39	23	23	50	39	24	17	43
11	11	8	4	9	13	6	6	12
$ 98	$ 101	$ 73	$ 33	$ 77	$ 112	$ 58	$ 53	$ 104

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF COMPREHENSIVE INCOME
THREE MONTHS ENDED MARCH 31, 2020 AND 2019
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
March 31, 2020				
Net income (loss)	$ 627	$ (1)	$ 42	$ 105
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	(1,918)	—	(86)	74
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	29	—	23	1
Net unrealized gains (losses) relating to hedging activities	(291)	—	1	(153)
Pension and postretirement benefits	(6)	2	1	1
Total other comprehensive income (loss)	(2,186)	2	(61)	(77)
Comprehensive income (loss)	$ (1,559)	$ 1	$ (19)	$ 28
March 31, 2019				
Net income (loss)	$ 900	$ 2	$ 54	$ 135
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	230	1	34	32
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	19	(2)	7	1
Net unrealized gains (losses) relating to hedging activities	(70)	—	(2)	(45)
Pension and postretirement benefits	6	—	—	1
Total other comprehensive income (loss)	185	(1)	39	(11)
Comprehensive income (loss)	$ 1,085	$ 1	$ 93	$ 124

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 36	$ 108	$ 80	$ 30	$ 80	$ 92	$ 51	$ 12	$ (8)
(68)	(41)	(1)	(149)	(631)	(164)	(256)	(94)	(502)
—	—	—	—	4	—	1	—	—
—	—	—	—	(44)	—	(95)	—	—
—	—	—	—	(11)	1	—	—	—
(68)	(41)	(1)	(149)	(682)	(163)	(350)	(94)	(502)
$ (32)	$ 67	$ 79	$ (119)	$ (602)	$ (71)	$ (299)	$ (82)	$ (510)
$ 98	$ 101	$ 73	$ 33	$ 77	$ 112	$ 58	$ 53	$ 104
36	—	—	27	(2)	1	51	12	38
—	(8)	—	—	6	—	1	—	14
—	—	—	—	(2)	—	(21)	—	—
—	1	—	—	4	—	—	—	—
36	(7)	—	27	6	1	31	12	52
$ 134	$ 94	$ 73	$ 60	$ 83	$ 113	$ 89	$ 65	$ 156

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CAPITAL
THREE MONTHS ENDED MARCH 31, 2020 AND 2019
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Balance, December 31, 2019	$ 55,427	$ 1	$ 3,145	$ 7,532
Adjustment for cumulative effect of accounting change	(28)	1	(8)	(4)
Comprehensive income (loss)	(1,559)	1	(19)	28
Proceeds from issuance of capital stock	17,379	1	1,466	3,619
Repurchases/redemptions of capital stock	(10,109)	(2)	(1,069)	(2,085)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(768)	—	—	—
Dividends of capital stock	40	—	—	—
Dividends				
Cash	(418)	1	(24)	(88)
Stock	(40)	—	—	—
Balance, March 31, 2020	$ 59,924	$ 3	$ 3,491	$ 9,002
Balance, December 31, 2018	$ 58,344	$ 1	$ 3,607	$ 7,747
Adjustment for cumulative effect of accounting changes	15	(1)	—	—
Comprehensive income (loss)	1,085	1	93	124
Proceeds from issuance of capital stock	8,893	1	281	1,649
Repurchases/redemptions of capital stock	(11,592)	1	(980)	(2,044)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(57)	(1)	—	—
Dividends of capital stock	43	—	—	—
Dividends				
Cash	(527)	(2)	(37)	(101)
Stock	(43)	—	—	—
Balance, March 31, 2019	$ 56,161	$ —	$ 2,964	$ 7,375

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 4,473	$ 7,163	$ 4,445	$ 3,157	$ 5,454	$ 6,726	$ 3,798	$ 2,792	$ 6,741
—	—	—	—	(7)	1	(2)	(6)	(3)
(32)	67	79	(119)	(602)	(71)	(299)	(82)	(510)
2,184	3,702	2,072	124	728	2,074	548	254	607
(1,609)	(2,036)	(150)	—	(486)	(1,932)	(329)	(38)	(373)
—	(2)	(550)	—	(1)	(6)	—	(206)	(3)
—	—	—	—	—	—	15	25	—
(57)	(76)	(21)	(21)	(21)	(59)	—	—	(52)
—	—	—	—	—	—	(15)	(25)	—
$ 4,959	$ 8,818	$ 5,875	$ 3,141	$ 5,065	$ 6,733	$ 3,716	$ 2,714	$ 6,407
$ 5,376	$ 7,647	$ 5,330	$ 3,050	$ 5,289	$ 7,548	$ 3,765	$ 2,454	$ 6,530
—	—	—	—	16	—	—	—	—
134	94	73	60	83	113	89	65	156
1,455	2,029	228	56	612	1,551	339	338	354
(1,712)	(2,762)	(488)	—	(649)	(1,781)	(479)	(354)	(344)
(24)	—	(1)	(2)	(1)	(2)	(2)	(24)	—
—	—	—	—	—	—	19	24	—
(70)	(85)	(65)	(26)	(21)	(70)	—	—	(50)
—	—	—	—	—	—	(19)	(24)	—
$ 5,159	$ 6,923	$ 5,077	$ 3,138	$ 5,329	$ 7,359	$ 3,712	$ 2,479	$ 6,646

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CASH FLOWS
THREE MONTHS ENDED MARCH 31, 2020
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Operating activities				
Net cash provided by (used in) operating activities	$ (7,664)	$ (1)	$ (314)	$ (749)
Investing activities				
Net change/net proceeds and payments in				
Investments	23,711	5	(1,659)	13,919
Advances	(158,236)	(1)	(10,333)	(34,012)
Mortgage loans held for portfolio	(2,105)	(2)	(33)	(41)
Other investing activities	(11)	(2)	1	(5)
Net cash provided by (used in) investing activities	(136,641)	—	(12,024)	(20,139)
Financing activities				
Net change in deposits and pass-through reserves, and other financing activities	4,637	(3)	186	491
Net proceeds (payments) on derivative contracts with financing element	(326)	(1)	(107)	(3)
Net proceeds from issuance of consolidated obligations				
Discount notes	1,357,780	3	50,410	294,138
Bonds	183,335	—	3,733	31,707
Payments for maturing and retiring consolidated obligations				
Discount notes	(1,185,363)	1	(38,412)	(277,853)
Bonds	(206,829)	—	(3,107)	(29,603)
Proceeds from issuance of capital stock	17,379	1	1,466	3,619
Payments for repurchases/redemptions of capital stock	(10,109)	(2)	(1,069)	(2,085)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(423)	—	—	—
Cash dividends paid	(418)	1	(24)	(88)
Net cash provided by (used in) financing activities	159,663	—	13,076	20,323
Net increase (decrease) in cash and due from banks	15,358	(1)	738	(565)
Cash and due from banks at beginning of the period	4,960	1	69	603
Cash and due from banks at end of the period	$ 20,318	$ —	$ 807	$ 38

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ (204)	$ (994)	$ (450)	$ (533)	$ (1,897)	$ (186)	$ (975)	$ (368)	$ (993)
(3,294)	3,214	8,835	(694)	2,435	2,795	3,245	522	(5,612)
(12,167)	(38,375)	(32,664)	(5,757)	(3,721)	1,026	(9,254)	(1,179)	(11,799)
(124)	15	(693)	213	(654)	(214)	(216)	(399)	43
—	—	—	(1)	(2)	(2)	(1)	1	—
(15,585)	(35,146)	(24,522)	(6,239)	(1,942)	3,605	(6,226)	(1,055)	(17,368)
236	251	233	1,861	389	155	465	185	188
—	(1)	—	2	—	—	(213)	1	(4)
84,364	175,304	150,972	84,066	246,265	32,197	53,659	124,347	62,055
15,633	32,434	9,381	14,094	10,484	17,706	9,460	12,650	26,053
(55,472)	(130,976)	(120,421)	(72,093)	(240,872)	(28,645)	(44,033)	(126,260)	(50,327)
(25,523)	(39,124)	(13,191)	(16,796)	(12,615)	(25,217)	(11,160)	(10,975)	(19,518)
2,184	3,702	2,072	124	728	2,074	548	254	607
(1,609)	(2,036)	(150)	—	(486)	(1,932)	(329)	(38)	(373)
(41)	(2)	—	—	—	(116)	—	(206)	(58)
(57)	(76)	(21)	(21)	(21)	(59)	—	—	(52)
19,715	39,476	28,875	11,237	3,872	(3,837)	8,397	(42)	18,571
3,926	3,336	3,903	4,465	33	(418)	1,196	(1,465)	210
21	911	21	220	29	1,029	21	1,917	118
$ 3,947	$ 4,247	$ 3,924	$ 4,685	$ 62	$ 611	$ 1,217	$ 452	$ 328

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CASH FLOWS
THREE MONTHS ENDED MARCH 31, 2019
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Operating activities				
Net cash provided by (used in) operating activities	$ (1,446)	$ 1	$ (188)	$ (87)
Investing activities				
Net change/net proceeds and payments in				
Loans to FHLBanks	—	(750)	—	250
Investments	(31,992)	(13)	393	(4,470)
Advances	58,644	(1)	11,076	6,271
Mortgage loans held for portfolio	(1,565)	—	(70)	(15)
Other investing activities	(9)	(2)	—	(2)
Net cash provided by (used in) investing activities	25,078	(766)	11,399	2,034
Financing activities				
Net change in deposits and pass-through reserves, and other financing activities	558	15	80	266
Net change in loans from FHLBanks	—	750	—	—
Net proceeds (payments) on derivative contracts with financing element	(74)	—	(4)	(5)
Net proceeds from issuance of consolidated obligations				
Discount notes	1,787,253	—	36,749	284,041
Bonds	129,520	—	1,548	22,085
Payments for maturing and retiring consolidated obligations				
Discount notes	(1,806,335)	—	(46,230)	(281,667)
Bonds	(131,225)	1	(2,585)	(26,173)
Proceeds from issuance of capital stock	8,893	1	281	1,649
Payments for repurchases/redemptions of capital stock	(11,592)	1	(980)	(2,044)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(86)	(1)	(15)	—
Cash dividends paid	(527)	(2)	(37)	(101)
Net cash provided by (used in) financing activities	(23,615)	765	(11,193)	(1,949)
Net increase (decrease) in cash and due from banks	17	—	18	(2)
Cash and due from banks at beginning of the period	522	(1)	10	85
Cash and due from banks at end of the period	$ 539	$ (1)	$ 28	$ 83

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ (638)	$ (196)	$ —	$ (82)	$ 10	$ 60	$ (205)	$ (11)	$ (110)
—	500	—	—	—	—	—	—	—
(648)	(2,434)	(3,425)	(494)	(2,579)	(6,401)	(45)	(8,159)	(3,717)
7,357	17,802	(5)	(4)	1,978	7,196	4,746	(1,092)	3,320
(68)	14	(23)	(13)	(477)	(111)	(409)	(294)	(99)
1	—	—	(1)	3	(2)	(1)	2	(7)
6,642	15,882	(3,453)	(512)	(1,075)	682	4,291	(9,543)	(503)
242	3	102	119	10	(142)	(172)	7	28
—	—	—	—	—	(500)	—	—	(250)
—	—	—	(1)	—	—	(74)	(1)	11
155,231	274,670	125,633	95,443	430,677	37,073	65,650	251,205	30,881
15,225	13,719	11,341	5,429	12,297	14,926	4,441	5,574	22,935
(165,388)	(279,491)	(128,400)	(95,087)	(434,225)	(34,973)	(64,037)	(245,039)	(31,798)
(10,955)	(23,734)	(4,886)	(5,367)	(7,640)	(16,844)	(9,740)	(2,154)	(21,148)
1,455	2,029	228	56	612	1,551	339	338	354
(1,712)	(2,762)	(488)	—	(649)	(1,781)	(479)	(354)	(344)
(24)	—	(1)	—	1	(20)	(2)	(24)	—
(70)	(85)	(65)	(26)	(21)	(70)	—	—	(50)
(5,996)	(15,651)	3,464	566	1,062	(780)	(4,074)	9,552	619
8	35	11	(28)	(3)	(38)	12	(2)	6
72	35	10	101	28	119	35	15	13
$ 80	$ 70	$ 21	$ 73	$ 25	$ 81	$ 47	$ 13	$ 19

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SELECTED FINANCIAL DATA

	2020	2019			
(dollars in millions)	March 31,	December 31,	September 30,	June 30,	March 31,
Selected Statement of Condition Data at					
Investments(1)	$ 350,685	$ 374,995	$ 351,720	$ 360,212	$ 341,416
Advances	806,944	641,519	658,756	689,384	671,382
Mortgage loans held for portfolio, net	74,562	72,492	69,417	66,545	64,076
Total assets	1,259,103	1,099,113	1,085,878	1,122,006	1,082,456
Consolidated obligations					
Discount notes	576,593	404,035	388,380	426,335	407,053
Bonds	599,817	622,161	622,398	621,846	602,535
Total consolidated obligations	1,176,410	1,026,196	1,010,778	1,048,181	1,009,588
Mandatorily redeemable capital stock	1,726	1,378	1,390	1,237	1,035
Capital					
Total capital stock(2)	41,037	34,495	35,195	36,661	35,785
Retained earnings	20,729	20,588	20,183	20,017	19,849
Accumulated other comprehensive income (loss)	(1,842)	344	247	423	527
Total capital	59,924	55,427	55,625	57,101	56,161
Selected Statement of Income Data for the quarter ended					
Net interest income	$ 915	$ 1,223	$ 1,082	$ 1,103	$ 1,274
Provision (reversal) for credit losses	43	—	1	—	1
Net interest income after provision (reversal) for credit losses	872	1,223	1,081	1,103	1,273
Non-interest income (loss)	192	160	41	33	63
Non-interest expense	365	390	355	346	334
Affordable Housing Program Assessments	72	101	78	81	102
Net income	$ 627	$ 892	$ 689	$ 709	$ 900
Selected Other Data for the quarter ended					
Cash and stock dividends	$ 458	$ 487	$ 523	$ 541	$ 570
Dividend payout ratio(3)	73.05%	54.60%	75.91%	76.30%	63.33%
Return on average equity (annualized)(4)(5)	4.51%	6.43%	4.95%	4.98%	6.40%
Return on average assets (annualized)	0.23%	0.33%	0.25%	0.26%	0.33%
Average equity to average assets(5)	5.05%	5.10%	5.10%	5.18%	5.20%
Net interest margin(6)	0.34%	0.45%	0.40%	0.41%	0.47%
Selected Other Data at					
GAAP capital-to-asset ratio	4.76%	5.04%	5.12%	5.09%	5.19%
Regulatory capital-to-assets ratio(7)	5.04%	5.14%	5.23%	5.16%	5.24%

(1) Investments consist of interest-bearing deposits, securities purchased under agreements to resell, federal funds sold, trading securities, available-for-sale securities, and held-to-maturity securities.
(2) FHLBank capital stock is redeemable at the request of a member subject to the statutory redemption periods and other conditions and limitations. (See *Note 9 - Capital* to the accompanying combined financial statements for additional information on the statutory redemption periods and other conditions and limitations.)
(3) Dividend payout ratio is equal to dividends declared in the period expressed as a percentage of net income in the period. This ratio may not be as relevant to the combined balances because there are no shareholders at the FHLBank System-wide level.
(4) Return on average equity is equal to net income expressed as a percentage of average total capital.
(5) Mandatorily redeemable capital stock is not included in the calculations of return on average equity or average equity to average assets.
(6) Net interest margin is equal to net interest income represented as a percentage of average interest-earning assets.
(7) The regulatory capital-to-assets ratio is calculated based on the FHLBanks' regulatory capital as a percentage of total assets. (See *Note 9 - Capital* to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

**FINANCIAL DISCUSSION AND ANALYSIS OF
COMBINED FINANCIAL CONDITION AND COMBINED RESULTS OF OPERATIONS**

Investors should read this financial discussion and analysis of combined financial condition and combined results of operations together with the combined financial statements and the accompanying notes in this Combined Financial Report of the Federal Home Loan Banks (FHLBanks). Each FHLBank discusses its financial condition and results of operations in its periodic reports filed with the U.S. Securities and Exchange Commission (SEC). The results of operations for interim periods are not necessarily indicative of the results to be expected for the year ending December 31, 2020, or for any future period. The unaudited combined financial statements, included in this Combined Financial Report, should be read in conjunction with the audited combined financial statements for the year ended December 31, 2019, included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019.

Each FHLBank's Annual Report on SEC Form 10-K and Quarterly Report on SEC Form 10-Q contain, as required by applicable SEC rules, a "Management's Discussion and Analysis of Financial Condition and Results of Operations," commonly called MD&A. The SEC notes that one of the principal objectives of MD&A is "to provide a narrative explanation of a company's financial statements that enables investors to see the company through the eyes of management." Because there is no centralized management of the FHLBanks that can provide a system-wide "eyes of management" view of the FHLBanks as a whole, this Combined Financial Report does not contain a conventional MD&A. Instead, a "Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations" is prepared by the Office of Finance using information provided by each FHLBank. This Financial Discussion and Analysis does not generally include a separate discussion of how each FHLBank's operations affect the combined financial condition and combined results of operations. That level of information about each FHLBank is addressed in each respective FHLBank's periodic reports filed with the SEC. (See *Explanatory Statement about Federal Home Loan Banks Combined Financial Report* and *Supplemental Information - Individual Federal Home Loan Bank Selected Financial Data and Financial Ratios*.)

The combined financial statements include the financial results of the FHLBanks. (See *Condensed Combining Schedules* for information regarding each FHLBank's results.) Transactions between the FHLBanks have been eliminated in accordance with combination accounting principles similar to consolidation under GAAP.

Unless otherwise stated, dollar amounts disclosed in this Combined Financial Report represent values rounded to the nearest million. Dollar amounts rounding to less than one million are not reflected in this Combined Financial Report.

Forward-Looking Information

Statements contained in this report, including statements describing the objectives, projections, estimates, or future predictions of the FHLBanks and the Office of Finance, may be "forward-looking statements." These statements may use forward-looking terminology, such as "anticipates," "believes," "could," "estimates," "expects," "may," "should," "will," "would," or their negatives or other variations on these terms. Investors should note that forward-looking statements, by their nature, involve risks or uncertainties, including those set forth in *Risk Factors* in this Combined Financial Report and *Risk Factors* on pages 22-30 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019. Therefore, the actual results could differ materially from those expressed or implied in these forward-looking statements or could affect the extent to which a particular objective, projection, estimate, or prediction is realized.

These forward-looking statements involve risks and uncertainties including, but not limited to, the following:

- changes in the general economy, money and capital markets, the rate of inflation (or deflation), employment rates, housing market activity and housing prices, the size and volatility of the residential mortgage market, and uncertainty regarding the global economy;

- levels and volatility of market prices, interest rates, and indices or other factors that could affect the value of investments or collateral held by the FHLBanks resulting from the effects of, and changes in, various monetary or fiscal policies and regulations, including those determined by the Federal Reserve Board and the Federal Deposit Insurance Corporation (FDIC), or a decline in liquidity in the financial markets;

- natural disasters, pandemics or other widespread health emergencies, terrorist attacks, or other unanticipated or catastrophic events, including the economic and financial disruptions and uncertainties and significant operational challenges created by the COVID-19 pandemic and related developments;

- political events, including legislative, regulatory, judicial, or other developments that affect the FHLBanks, their members, counterparties, dealers of consolidated obligations, or investors in consolidated obligations, such as changes in the Federal Home Loan Bank Act of 1932, as amended (FHLBank Act), or in regulations that affect FHLBank operations, housing finance and government-sponsored enterprise (GSE) reform, and Federal Housing Finance Agency (FHFA) actions;

- changes to, and replacement of, the London Interbank Offered Rate (LIBOR) benchmark interest rate, and the use and acceptance of the Secured Overnight Financing Rate (SOFR);

- competitive forces, including other sources of funding available to FHLBank members and other entities borrowing funds in the capital markets;

- disruptions in the credit and debt markets and the effect on the FHLBanks' funding costs, sources, and availability;

- demand for FHLBank advances resulting from changes in FHLBank members' deposit flows and credit demands;

- loss of members and repayment of advances made to those members due to institutional failures, consolidations, voluntary withdrawals, or involuntary terminations from FHLBank membership, and changes in the financial health of members;

- changes in domestic and foreign investor demand for consolidated obligations, including short-term funding, or the terms of derivative transactions and similar transactions, including changes in the relative attractiveness of consolidated obligations as compared to other investment opportunities, changes in the availability of other investment opportunities, changes in support from dealers of consolidated obligations, and changes resulting from any modification of the credit ratings of the U.S. government or the FHLBanks;

- the availability of acceptable institutional counterparties for business transactions, including derivative transactions used to manage interest-rate risk;

- the ability to introduce new products and services and successfully manage the risks associated with those products and services, including new types of collateral used to secure advances;

- the pace of technological change and the ability to develop, secure, and support technology and information systems to effectively manage the risks, including information security; and

- the effect of new accounting guidance, including the development of supporting systems and related internal controls.

Neither the FHLBanks nor the Office of Finance undertakes any obligation to publicly update or revise any forward-looking statements contained in this Combined Financial Report, whether as a result of new information, future events, changed circumstances, or any other reason.

Executive Summary

This executive summary highlights selected information and may not contain all of the information that is important to readers of this Combined Financial Report. For a more complete understanding of events, trends, and uncertainties, this executive summary should be read together with the Financial Discussion and Analysis section in its entirety and the FHLBanks' combined financial statements and related notes.

Overview

The FHLBanks are GSEs, federally-chartered, but privately capitalized and independently managed. The FHLBanks together with the Office of Finance, a joint office of the FHLBanks, comprise the FHLBank System. Each of the FHLBanks and the Office of Finance operate under the supervisory and regulatory framework of the FHFA.

The FHLBanks are cooperative institutions, meaning that their stockholders are also the FHLBanks' primary customers. FHLBank capital stock is not publicly traded; it is purchased by members from, and redeemed or repurchased by, an FHLBank at the stated par value of $100 per share. The FHLBanks expand and contract in asset size as the needs of member financial institutions and their communities change over time.

Each FHLBank's primary business is to serve as a financial intermediary between the capital markets and its members. This intermediation process involves raising funds by issuing debt, known as consolidated obligations, in the capital markets and lending those proceeds to member institutions in the form of secured loans, known as advances. Each FHLBank's funding is principally obtained from consolidated obligations issued through the Office of Finance on behalf of the FHLBanks. Consolidated obligations are joint and several obligations of each FHLBank. FHLBank debt issuance is generally driven by members' needs for advances.

The FHLBanks seek to maintain a balance between their public policy mission and their goal of providing adequate returns on member capital. The FHLBanks strive to achieve this balance by providing value to their members through advances, mortgage loan purchases, other services, and dividend payments. The FHLBanks' primary sources of earnings are the net interest spread between the yield on interest-earning assets and the yield on interest-bearing liabilities, combined with earnings on invested capital. Due to the FHLBanks' cooperative structures, the FHLBanks generally earn a narrow net interest spread.

External Credit Ratings

The FHLBanks' ability to raise funds in the capital markets at narrow spreads to the U.S. Treasury yield curve is due largely to the FHLBanks' status as GSEs, which is reflected in their consolidated obligations receiving the same credit rating as the government bond credit rating of the United States, even though the consolidated obligations are not obligations of the United States and are not guaranteed by the United States. S&P Global Ratings (S&P), Moody's Investors Service (Moody's), or other rating organizations could downgrade or upgrade the credit rating of the U.S. government and GSEs, including the FHLBanks and their consolidated obligations. In addition to ratings on the FHLBanks' consolidated obligations, each FHLBank is rated individually by S&P and Moody's. Investors should note that a rating issued by a nationally recognized statistical rating organization is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn by the rating organization at any time. Investors should evaluate the rating of each nationally recognized statistical rating organization independently. Investors should not take the historical or current ratings of the FHLBanks and their consolidated obligations as an indication of future ratings for the FHLBanks and their consolidated obligations. (See *External Credit Ratings* for more information.)

Business Environment

The primary external factors that affect the FHLBanks' combined financial condition and results of operations include (1) the general state of the economy and financial markets, (2) conditions in the U.S. housing markets, (3) interest rate levels and volatility, and (4) the legislative and regulatory environment.

COVID-19 Pandemic. The effects of the COVID-19 pandemic, and the governmental and public actions taken in response, on the global and U.S. economy and the FHLBanks are evolving, and the full duration and long-term impact of the pandemic is uncertain. During the first quarter of 2020, conditions in the financial markets deteriorated causing significant disruption to the availability of funds in the credit markets and resulted in adverse changes in interest rates, credit spreads, and asset prices. In addition, the COVID-19 outbreak has resulted in shelter-in-place, stay-at-home or similar orders, travel restrictions, and business closures across the United States, which have significantly reduced economic activity and created substantial uncertainty about the future economic environment. These conditions have had, and are expected to continue to have, a significant impact on the business and financial results of the FHLBanks. During these times of extraordinary market stress and volatility, the FHLBanks have remained operational and continued to meet their funding needs and be a reliable source of liquidity to member financial institutions.

For the health and safety of employees, beginning in March, each of the FHLBanks and the Office of Finance arranged for all or a substantial majority of its employees to work remotely, with some critical employees working out of either the primary office or the business continuity facilities. Thus far, the business continuity plans and technology systems of the FHLBanks and the Office of Finance have effectively supported these alternative work arrangements. The FHLBanks and the Office of Finance continue to monitor guidance from governmental authorities to determine when, and in what manner, it will be prudent for staff to return to their primary office locations.

The FHLBanks have individually and collectively responded to the evolving needs of members and communities during the COVID-19 pandemic. Some of the initiatives undertaken at certain FHLBanks include, but are not limited to:

- COVID-19 relief programs providing zero interest-rate advances for certain members;
- temporary relief provisions for collateral loan eligibility;
- temporary relief provisions for Mortgage Purchase Program and Mortgage Partnership Finance® Program loans, including forbearance under the Coronavirus Aid, Relief, and Economic Security Act; and
- Paycheck Protection Program (PPP) loan eligibility as collateral for advances.

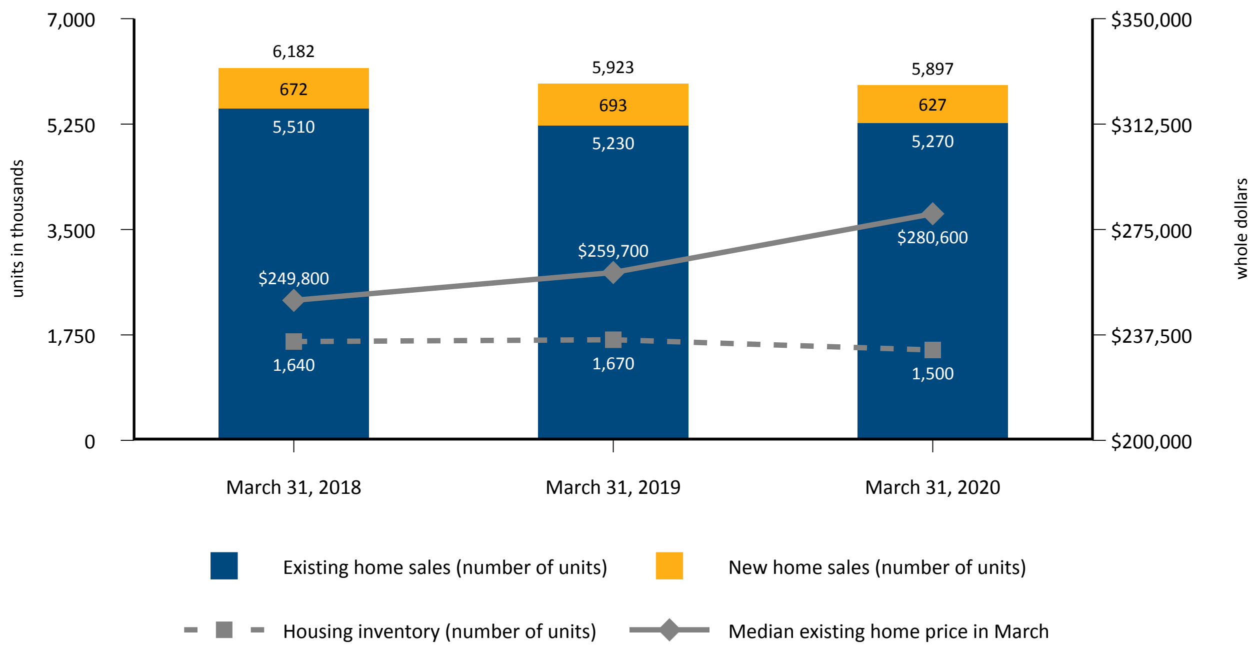
The FHLBanks continue to monitor the progress of the pandemic and are committed to assisting their members and their communities as impacts related to the pandemic continue to unfold. (See *Risk Factors* in this Combined Financial Report and *Risk Factors* on pages 22-30 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for additional information on potential risks to the FHLBanks, including from the COVID-19 pandemic.)

Economy and Financial Markets. The FHLBanks' overall results of operations are influenced by the economy and financial markets, and, in particular, by FHLBank members' demand for advances and the FHLBanks' ability to maintain sufficient access to diverse sources of funding at relatively favorable costs. The FHLBanks' flexibility in utilizing various funding tools, in combination with their diverse investor base and their status as GSEs, have helped ensure reliable market access and demand for consolidated obligations throughout fluctuating market environments and regulatory changes affecting dealers of and investors in consolidated obligations. Conditions in the financial markets deteriorated significantly beginning in late February and into March 2020. In response, the Federal Reserve undertook a number of emergency actions in March 2020 to, among other things, help facilitate liquidity and support stability in the fixed-income markets while volatility across global capital markets dramatically increased. Notably, the Federal Reserve substantially increased its provision of liquidity to the repo and U.S. Treasury markets via open market operations while also providing liquidity to related markets, such as the commercial paper market, via an array of new programs, as part of its commitment to using its full range of tools to support households, businesses, and the U.S. economy overall in this challenging time. See *Interest Rate Levels and Volatility* for additional information.

In April 2020, the Bureau of Labor Statistics reported that the U.S. unemployment rate was 4.4% in March 2020, compared to 3.8% in March 2019. On May 8, 2020, the Bureau of Labor Statistics reported that the U.S. unemployment rate had risen to 14.7% in April 2020. Due to the effects of the COVID-19 pandemic on the economy, the unemployment rate is expected to remain elevated or increase in the coming months if business closures persist. U.S. real gross domestic product decreased at an annual rate of 4.8% in the first quarter of 2020, according to the advance estimate reported by the Bureau of Economic Analysis, compared to an increase at an annual rate of 2.1% in the fourth quarter of 2019. The decline in the first quarter and April of 2020 was attributed largely to the effects of the COVID-19 pandemic on the U.S. economy.

Conditions in U.S. Housing Markets. Conditions in the U.S. housing markets primarily affect the FHLBanks through the creation of demand for, and yield on, advances and mortgage loans, as well as the yield on investments in mortgage-backed securities. Figure 1 presents U.S. home sales, inventory, and prices. The seasonally adjusted annual rate of U.S. home sales decreased modestly in March 2020, compared to March 2019 and 2018, but remained strong, near the 6 million unit level, driven by low mortgage interest rates. However, low housing inventory levels and higher home prices in the first quarter of 2020 continued to constrain sales growth. Beginning in March 2020, the impact of the COVID-19 pandemic significantly affected the U.S. housing markets and is expected to result in significant declines in home inventory and sales in the near term. Forbearances and delinquencies of mortgage loans may rise significantly due to rising unemployment and relief programs implemented in response to the COVID-19 pandemic.

Figure 1 - U.S. Home Sales, Inventory, and Prices



Source: National Association of REALTORS® for existing home sales, housing inventory, and median existing home price.
Source: U.S. Census Bureau and the Department of Housing and Urban Development for new home sales.

Interest Rate Levels and Volatility. The level and volatility of interest rates affect FHLBank member demand for advances. In addition, credit spreads and the shape of the yield curve affect investor demand for consolidated obligations. These factors also impact the FHLBanks' combined results of operations, primarily affecting net interest income and the valuation of certain assets and liabilities.

The level and volatility of interest rates and credit spreads were affected by several factors during the three months ended March 31, 2020, principally the COVID-19 pandemic. Overall economic conditions, monetary policy, and financial regulation also continue to be influencing factors.

In early March 2020, the Federal Open Market Committee stated that the COVID-19 outbreak poses evolving risks to economic activity and in an unscheduled meeting decided to lower the federal funds rate by 50 basis points, to a target range of 1.00% to 1.25%, noting that it would closely monitor developments and their implications for the economic outlook and will act as appropriate to support the economy. On March 15, 2020, the Federal Open Market Committee again lowered the federal funds rate in an unscheduled meeting, to a target range of 0.0% to 0.25%, noting that the COVID-19 outbreak has harmed communities and disrupted economic activity in many countries, including the United States, and has significantly affected global financial conditions. In the weeks before and after the Federal Reserve's early March cut in the federal funds target rate, interest rates decreased significantly. Generally, investor demand for high credit quality, fixed-income investments, including the FHLBanks' consolidated obligations, increased relative to other investments and the FHLBanks continued to meet their funding needs during this time. However, the spreads of the FHLBanks' consolidated obligations relative to U.S. Treasury securities widened, and the fixed-income market conditions became more challenging, with market participants favoring shorter-term obligations.

In late March 2020, the Federal Reserve stated that it would take further actions to support the flow of credit to households and businesses by addressing strains in the markets for Treasury securities and agency mortgage-backed securities. In addition, the Federal Reserve stated that it will continue to purchase Treasury securities and agency mortgage-backed securities in the amounts needed to support smooth market functioning and effective transmission of monetary policy to broader financial conditions.

Table 1 presents the quarterly averages and period-end rates for certain key interest rates. The three-month averages of short-term interest rates were significantly lower during 2020, compared to 2019, impacting the FHLBanks' combined results of operations, primarily by decreasing both interest income and interest expense. The prevailing expectation of prolonged lower interest rates will likely result in lower net interest income for the FHLBanks. At March 31, 2020, both short- and long-term interest rates were lower than at December 31, 2019, which affected the fair values of certain assets and liabilities.

Table 1 - Key Interest Rates

	Three-Month Average		Period End	
	March 31, 2020	March 31, 2019	March 31, 2020	December 31, 2019
Federal Funds Effective	1.23%	2.40%	0.08%	1.55%
Secured Overnight Financing Rate	1.23%	2.44%	0.01%	1.55%
Overnight LIBOR	1.23%	2.39%	0.12%	1.54%
1-week Overnight Indexed Swap	1.20%	2.40%	0.07%	1.55%
3-month LIBOR	1.53%	2.69%	1.45%	1.91%
3-month U.S. Treasury yield	1.09%	2.42%	0.09%	1.55%
2-year U.S. Treasury yield	1.09%	2.49%	0.25%	1.57%
10-year U.S. Treasury yield	1.37%	2.65%	0.67%	1.92%

Source: Bloomberg

Table 2 presents the average funding spreads of newly-issued consolidated obligations relative to three-month LIBOR and three-month Treasury rates. For the three months ended March 31, 2020, the cost of newly-issued intermediate and long-term consolidated obligations increased and the cost of newly-issued short-term consolidated obligations decreased, as measured by the average indicative spreads to three-month LIBOR, compared to the three months ended March 31, 2019. However, the cost of newly-issued short-, intermediate-, and long-term consolidated obligations, as measured by average indicative spreads to three-month Treasury rates, increased for the three months ended March 31, 2020, compared to the three months ended March 31, 2019.

Table 2 - Funding Spreads to Three-Month LIBOR and Three-Month Treasury Rates
(in basis points)

	Three-Month Average		Ending Spread	
Borrowing Term	March 31, 2020	March 31, 2019	March 31, 2020	December 31, 2019
LIBOR				
3-months	(35.1)	(24.2)	(131.5)	(32.7)
2-years	4.9	(6.5)	(8.5)	(7.4)
5-years	17.4	7.1	22.3	2.4
10-years	48.1	41.1	78.4	28.7
Treasury				
3-months	8.4	4.8	0.5	5.1
2-years	12.4	5.2	16.2	3.6
5-years	20.4	14.0	37.0	5.2
10-years	44.4	43.2	82.0	26.0

Source: Funding spreads are derived using Office of Finance indications compared to LIBOR and Treasury rates

In July 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that after 2021 it will no longer persuade or compel banks to submit rates for the calculation of LIBOR. In response, the Federal Reserve Board and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee to identify a set of alternative reference interest rates for possible use as market benchmarks. This committee has proposed the Secured Overnight Financing Rate (SOFR) as its recommended alternative to U.S. dollar LIBOR, and the Federal Reserve Bank of New York began publishing SOFR rates in the second quarter of 2018. (See *Risk Factors - Business Risk - Legislative and Regulatory* on pages 22 to 24 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, and *Quantitative and Qualitative Disclosures about Market Risk* for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Legislative and Regulatory Environment. Potential legislative and regulatory changes, as well as other rules and regulations issued by the FHFA, could adversely affect the FHLBanks, FHLBank members, counterparties, and dealers of and investors in consolidated obligations. The FHLBanks' business operations, funding costs, rights, obligations, and the environment in which the FHLBanks carry out their mission could be significantly affected by these changes. (See *Legislative and Regulatory Developments* for more information.)

FHLBanks' Financial Highlights

Combined Financial Condition. Total assets were $1,259.1 billion at March 31, 2020, an increase of 14.6% from $1,099.1 billion at December 31, 2019.

- Advances totaled $806.9 billion at March 31, 2020, an increase of 25.8% from $641.5 billion at December 31, 2019, as members sought additional liquidity amid the uncertainty in the financial markets due to the COVID-19 pandemic. Commercial banks represented the largest segment of borrowers with 63.3% of the total principal amount of advances outstanding at March 31, 2020, compared to 59.0% at December 31, 2019. The top 10 advance holding company borrowers represented 32.0% of the total principal amount of advances outstanding at March 31, 2020, compared to 29.9% at December 31, 2019. The FHLBanks protect against credit risk on advances by collateralizing all advances. At March 31, 2020, each FHLBank had rights to collateral with an estimated value greater than the related outstanding advances.

- Investments were $350.7 billion at March 31, 2020, a decrease of 6.5% from $375.0 billion at December 31, 2019, driven by a decrease in securities purchased under agreements to resell, partially offset by an increase in federal funds sold. The FHLBanks maintain investment portfolios to provide funds to meet the credit needs of their members, maintain liquidity, and earn interest income.

- Mortgage loans held for portfolio, net, grew to $74.6 billion at March 31, 2020, an increase of 2.9% from $72.5 billion at March 31, 2019, as the FHLBanks were able to continue to grow their mortgage loan portfolios. Mortgage loan purchases of $5.6 billion outpaced principal repayments of $3.5 billion. An FHLBank may purchase mortgage loans to support the FHLBank's housing mission, provide an additional source of liquidity to its members, diversify its investments, and generate additional earnings.

Total liabilities were $1,199.2 billion at March 31, 2020, an increase of 14.9% compared to $1,043.7 billion at December 31, 2019.

- Consolidated obligations totaled $1,176.4 billion at March 31, 2020, an increase of 14.6% from $1,026.2 billion at March 31, 2019, in line with the increase in total assets, principally resulting from the growth in advances. The growth in consolidated obligations was driven by a 42.7% increase in consolidated discount notes as investors preferred short-term, high-quality money market instruments amid the uncertainty in the financial markets due to the COVID-19 pandemic. Consolidated obligations are the principal funding source used by the FHLBanks to make advances and to purchase mortgage loans and investments.

Total GAAP capital was $59.9 billion at March 31, 2020, an increase of 8.1% from $55.4 billion at December 31, 2019. The GAAP capital-to-assets ratio was 4.76% and the regulatory capital-to-assets ratio was 5.04% at March 31, 2020, compared to 5.04% and 5.14% at December 31, 2019. Each FHLBank was in compliance with FHFA regulatory capital requirements at March 31, 2020.

- Retained earnings grew to $20.7 billion at March 31, 2020, an increase of 0.7% from $20.6 billion at December 31, 2019, resulting from net income of $627 million, partially offset by dividends of $458 million.

- Capital stock was $41.0 billion at March 31, 2020, an increase of 19.0% from $34.5 billion at December 31, 2019, due principally to the net issuance of activity-based capital stock, driven by the increase in advances.

Combined Results of Operations. Net income was $627 million for the three months ended March 31, 2020, a decrease of $273 million, or 30.3%, compared to the three months ended March 31, 2019, resulting primarily from a decrease in net interest income, partially offset by higher net gains in non-interest income.

Net interest income after provision for credit losses was $872 million for the three months ended March 31, 2020, a decrease of $401 million, or 31.5%, compared to the three months ended March 31, 2019. Net interest margin was 0.34% for the three months ended March 31, 2020, a decrease of 13 basis points compared to the three months ended March 31, 2019. The decline in net interest margin was driven primarily by several factors, including:

- The tightening of spreads between interest-earning assets and interest-bearing liabilities due to lower interest rates and wider spreads for consolidated obligations to certain market benchmark interest rates.

- The effect of hedge ineffectiveness included in net interest income on designated fair value hedges.

- The effect of lower interest rates on variable-rate interest-earning assets and the runoff of higher-yielding interest-earning assets and replacement of these assets in the lower interest-rate environment, including a decrease in yields on short-term investments funded by equity capital and short-term debt.

- The acceleration of amortization of premiums on mortgage loans and MBS due to higher prepayments, and the accelerated recognition of concession fees on called consolidated obligations.

Provision for credit losses was $43 million for the three months ended March 31, 2020, an increase of $42 million compared to the three months ended March 31, 2019. The provision for credit losses for the three months ended March 31, 2020, consisted of a $40 million provision for credit losses on private-label MBS driven by a decline in fair values and a $3 million provision for credit losses on mortgage loans held for portfolio.

Non-interest income was $192 million for the three months ended March 31, 2020, an increase of $129 million compared to the three months ended March 31, 2019, due primarily to higher net gains on U.S. Treasury obligations classified as trading investment securities, partially offset by higher net losses on derivatives and hedging activities. Non-interest expense was $365 million for the three months ended March 31, 2020, an increase of $31 million, or 9.3%, compared to the three months ended March 31, 2019.

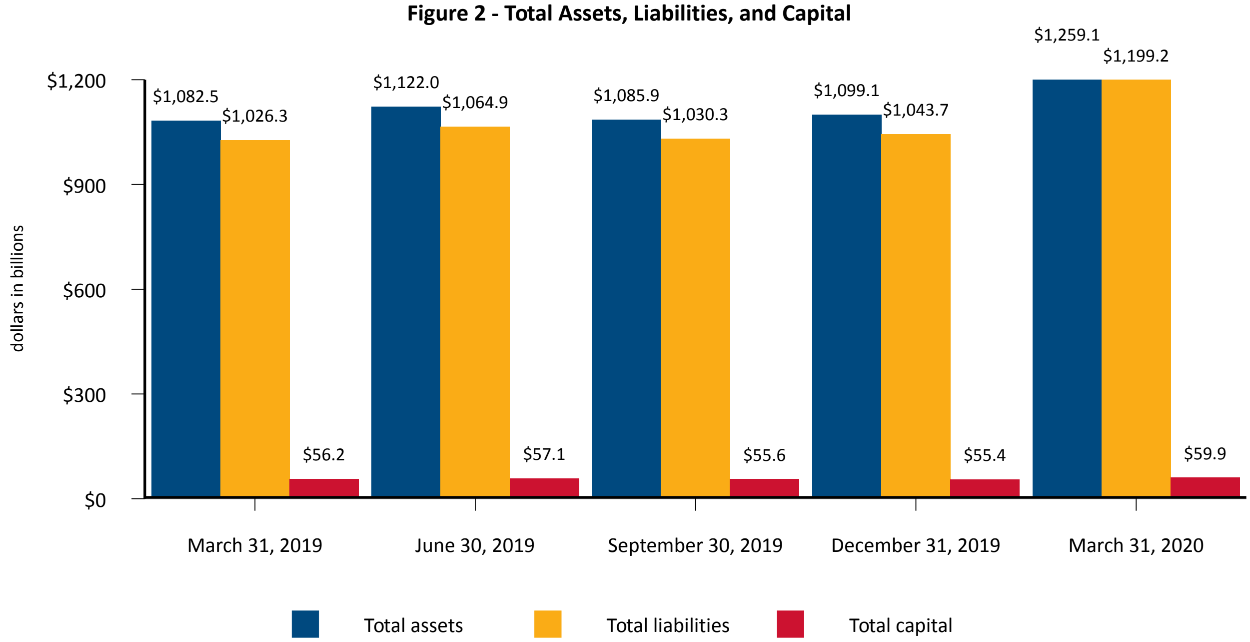
Affordable Housing Program assessments result from individual FHLBank income subject to assessment. Affordable Housing Program assessments were $72 million for the three months ended March 31, 2020, a decrease of $30 million, or 29.4%, compared to the three months ended March 31, 2019.

See *Combined Financial Condition* and *Combined Results of Operations* for further information.

Combined Financial Condition

The FHLBanks' asset composition includes cash and due from banks, investments, advances, mortgage loans held for portfolio, and other assets. The FHLBanks' liability composition includes deposits, consolidated discount notes, consolidated bonds, mandatorily redeemable capital stock, and other liabilities. The FHLBanks' capital composition includes capital stock, retained earnings, and accumulated other comprehensive income (loss) (AOCI). Figure 2 presents the total assets, liabilities, and capital for the most recent five quarters.

Figure 2 - Total Assets, Liabilities, and Capital



Figures 3 and 4 present the total assets and total liabilities and capital composition at March 31, 2020.

Figure 3 - Total Assets
(dollars in billions)

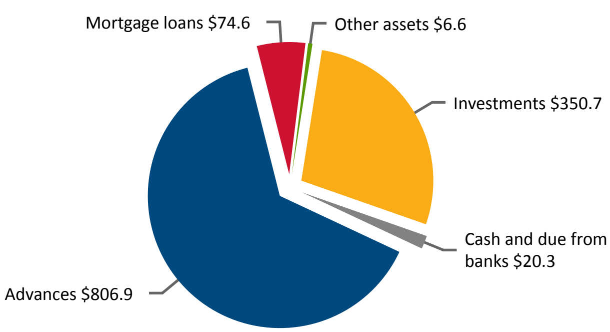
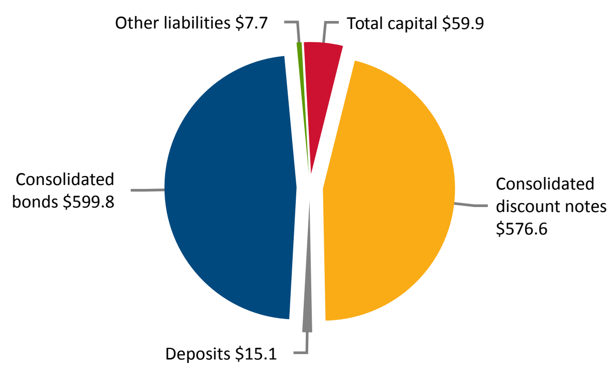


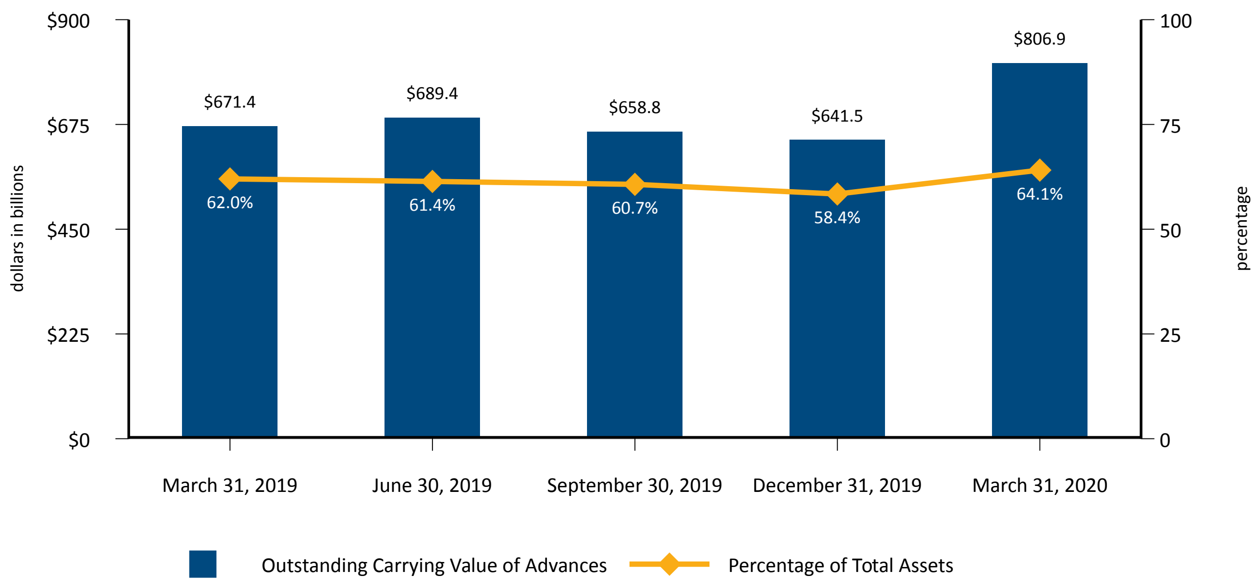
Figure 4 - Total Liabilities and Capital
(dollars in billions)



Advances

The FHLBanks provide funding to members and housing associates through secured loans (advances), which may be used for residential mortgages, community investments, and other services for housing and community development. Each FHLBank makes advances based on the security of mortgage loans and other types of eligible collateral pledged by, and the creditworthiness and financial condition of, the borrowing institutions. Figure 5 presents advances for the most recent five quarters.

Figure 5 - Advances Outstanding (Carrying Value)



The outstanding carrying value of advances totaled $806.9 billion at March 31, 2020, an increase of $165.4 billion, or 25.8%, from $641.5 billion at December 31, 2019, due primarily to members demand for additional liquidity as a result of the uncertainty in the financial markets due to the COVID-19 pandemic. Given the potential impact of the pandemic, it is uncertain whether this increased advance demand will continue, and if so, for how long. The percentage of members with outstanding advances was 54.2% at March 31, 2020, compared to 52.4% at December 31, 2019. Figures 6 and 7 present the principal amount of advances by product type and by redemption term for the most recent five quarters.

Figure 6 - Advances by Product Type
(dollars in billions)

Figure 7 - Advances by Redemption Term
(dollars in billions)

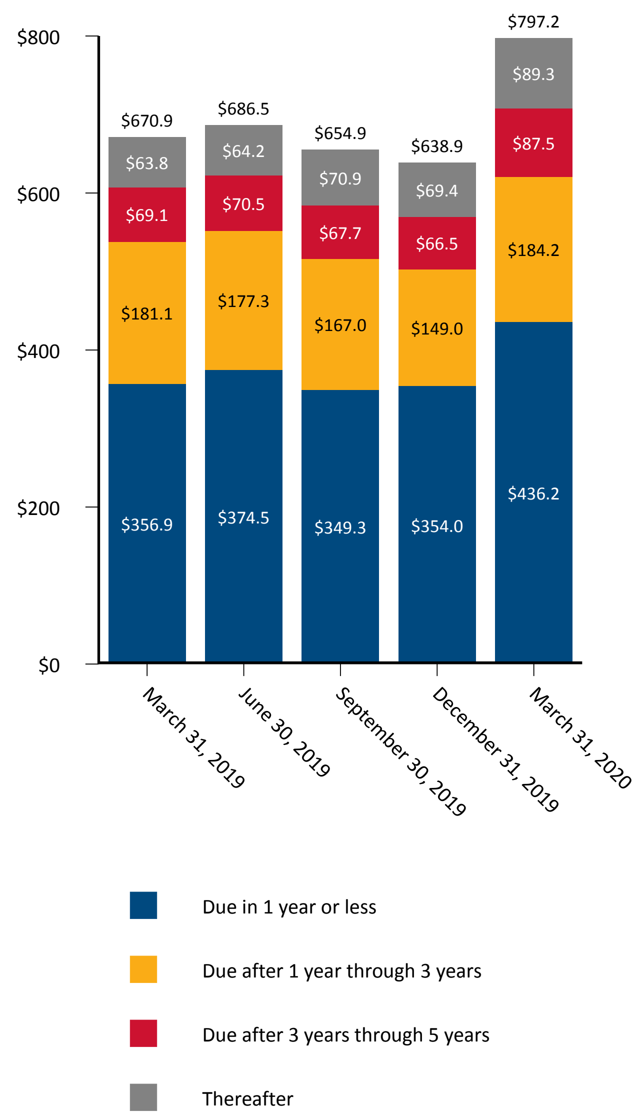


Table 3 presents advances outstanding by product type and redemption term, some of which include advances that contain embedded put or call options. A member either can sell an embedded option to an FHLBank or it can purchase an embedded option from an FHLBank. (See *Note 4 - Advances* to the accompanying combined financial statements for additional information on putable and callable advances and their potential effects on advance redemptions.)

Table 3 - Types of Advances by Redemption Term
(dollars in millions)

	March 31, 2020		December 31, 2019		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Fixed-rate						
Due in 1 year or less	$ 277,315	34.8%	$ 222,447	34.8%	$ 54,868	24.7 %
Due after 1 year through 3 years	82,109	10.3%	73,457	11.5%	8,652	11.8 %
Due after 3 years through 5 years	39,861	5.0%	30,028	4.7%	9,833	32.7 %
Thereafter	16,882	2.1%	13,626	2.1%	3,256	23.9 %
Total principal amount	416,167	52.2%	339,558	53.1%	76,609	22.6 %
Fixed-rate, putable						
Due in 1 year or less	20	—	985	0.2%	(965)	(98.0)%
Due after 1 year through 3 years	1,541	0.2%	1,354	0.2%	187	13.8 %
Due after 3 years through 5 years	5,649	0.7%	5,344	0.7%	305	5.7 %
Thereafter	30,944	3.9%	24,089	3.8%	6,855	28.5 %
Total principal amount	38,154	4.8%	31,772	4.9%	6,382	20.1 %
Variable-rate						
Due in 1 year or less	106,589	13.4%	88,900	13.9%	17,689	19.9 %
Due after 1 year through 3 years	29,361	3.7%	19,298	3.0%	10,063	52.1 %
Due after 3 years through 5 years	1,461	0.2%	1,636	0.3%	(175)	(10.7)%
Thereafter	1,046	0.1%	1,035	0.2%	11	1.1 %
Total principal amount	138,457	17.4%	110,869	17.4%	27,588	24.9 %
Variable-rate, callable or prepayable(1)						
Due in 1 year or less	40,911	5.1%	33,932	5.3%	6,979	20.6 %
Due after 1 year through 3 years	51,019	6.4%	43,054	6.7%	7,965	18.5 %
Due after 3 years through 5 years	20,974	2.6%	20,775	3.3%	199	1.0 %
Thereafter	27,175	3.4%	19,861	3.1%	7,314	36.8 %
Total principal amount	140,079	17.5%	117,622	18.4%	22,457	19.1 %
Other(2)						
Due in 1 year or less	11,352	1.4%	7,715	1.2%	3,637	47.1 %
Due after 1 year through 3 years	20,148	2.5%	11,867	1.9%	8,281	69.8 %
Due after 3 years through 5 years	19,561	2.5%	8,736	1.4%	10,825	123.9 %
Thereafter	13,238	1.7%	10,778	1.7%	2,460	22.8 %
Total principal amount	64,299	8.1%	39,096	6.2%	25,203	64.5 %
Overdrawn and overnight deposit accounts	10	—	6	—	4	66.7 %
Total principal amount advances	797,166	100.0%	638,923	100.0%	$ 158,243	24.8 %
Other adjustments(3)	9,778		2,596			
Total advances	$ 806,944		$ 641,519			

(1) Prepayable advances are those advances that may be contractually prepaid by the borrower on specified dates without incurring prepayment or termination fees.
(2) Includes hybrid, fixed-rate amortizing/mortgage matched, convertible, fixed-rate callable or prepayable, and other advances.
(3) Consists of hedging and fair value option valuation adjustments, unamortized premiums, discounts, and commitment fees.

Table 4 presents the principal amount of advances indexed to a variable interest rate at March 31, 2020 and December 31, 2019. (See *Quantitative and Qualitative Disclosures about Market Risk* for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 4 - Advances Indexed to a Variable Interest Rate(1)
(dollars in millions)

	March 31, 2020	December 31, 2019
LIBOR	$ 171,119	$ 134,481
SOFR	20,323	2,016
Other(2)	89,315	94,779
Total principal amount of advances indexed to a variable interest rate	$ 280,757	$ 231,276

(1) Includes fixed-rate advances that have cap/floor optionality linked to an interest-rate Index.
(2) Consists primarily of advances indexed to consolidated obligation yields.

Table 5 presents cash flows related to advance originations and advance repayments. During the three months ended March 31, 2020, advance originations exceeded repayments, resulting in higher advances outstanding. Both advance originations and advance repayments decreased during the three months ended March 31, 2020, compared to the three months ended March 31, 2019, due to a lower average balance of advances during the three months ended March 31, 2020.

Table 5 - Advance Originations and Repayments
(dollars in millions)

	Three Months Ended March 31,		
	2020	2019	Change
Advances originated	$ 2,080,500	$ 2,364,379	$ (283,879)
Advances repaid	1,922,264	2,423,023	(500,759)
Net change	$ 158,236	$ (58,644)	

The FHLBanks make advances primarily to their members. Table 6 presents the principal amount of advances by type of borrower and member.

Table 6 - Advances by Type of Borrower and Member
(dollars in millions)

	March 31, 2020		December 31, 2019	
	Principal Amount	Number of Members	Principal Amount	Number of Members
Commercial bank members	$ 504,234	2,334	$ 377,152	2,295
Insurance company members(1)	129,426	218	111,908	183
Savings institution members	87,786	464	81,649	452
Credit union members	62,860	589	52,258	574
Community development financial institution members	298	29	262	29
Total	784,604	3,634	623,229	3,533
Non-member borrowers	11,644		14,776	
Housing associates	918		918	
Total principal amount	$ 797,166		$ 638,923	
Total members		6,703		6,739

(1) Includes $16.5 billion and $20.4 billion of principal amount of advances outstanding to captive insurance members at March 31, 2020 and December 31, 2019.

Figures 8 and 9 present the percentage of principal amount of advances by type of borrower and percentage of member borrowers by type of member at March 31, 2020.

Figure 8 - Percentage of Principal Amount of Advances by Type of Borrower

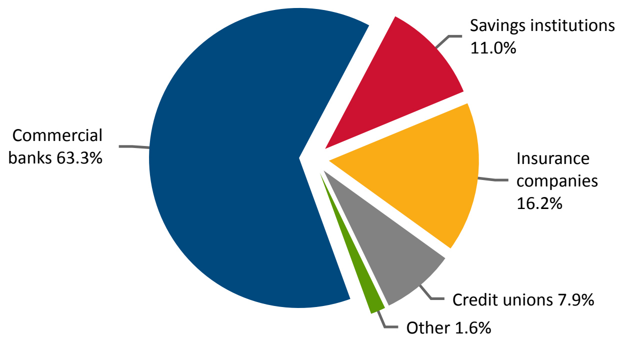


Figure 9 - Percentage of Member Borrowers by Type of Member

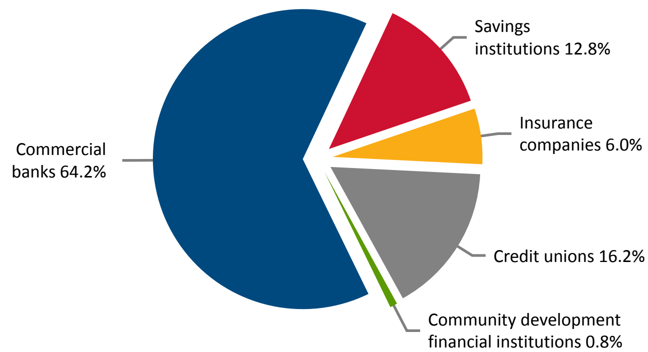


Table 7 presents the FHLBanks' top 10 advance holding borrowers at the holding-company level on a combined basis based on the principal amount of advances outstanding at March 31, 2020. The percentage of total advances for each holding company was computed by dividing the principal amount of advances by subsidiaries of that holding company by the principal amount of total combined advances. These percentage concentrations do not represent borrowing concentrations in an individual FHLBank.

Table 7 - Top 10 Advance Holding Borrowers by Holding Company at March 31, 2020
(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Principal Amount	Percentage of Total Principal Amount of Advances
Citigroup Inc.	New York	$ 39,300	4.9%
JPMorgan Chase & Co.	Cincinnati, Chicago, Pittsburgh, San Francisco, Des Moines	36,106	4.5%
Truist Financial Corporation	Atlanta	32,867	4.1%
Wells Fargo & Company	Des Moines, San Francisco	26,486	3.3%
U.S. Bancorp	Cincinnati, Des Moines, Topeka	24,378	3.1%
The PNC Financial Services Group, Inc.	Pittsburgh, Cincinnati, Atlanta	23,491	2.9%
Bank of America Corporation	Atlanta, San Francisco, Boston, Des Moines	19,611	2.5%
Ally Financial Inc.	Pittsburgh	18,760	2.4%
Navy Federal Credit Union	Atlanta	17,159	2.2%
MetLife, Inc.	New York, Pittsburgh, Boston, Des Moines	17,070	2.1%
		$ 255,228	32.0%

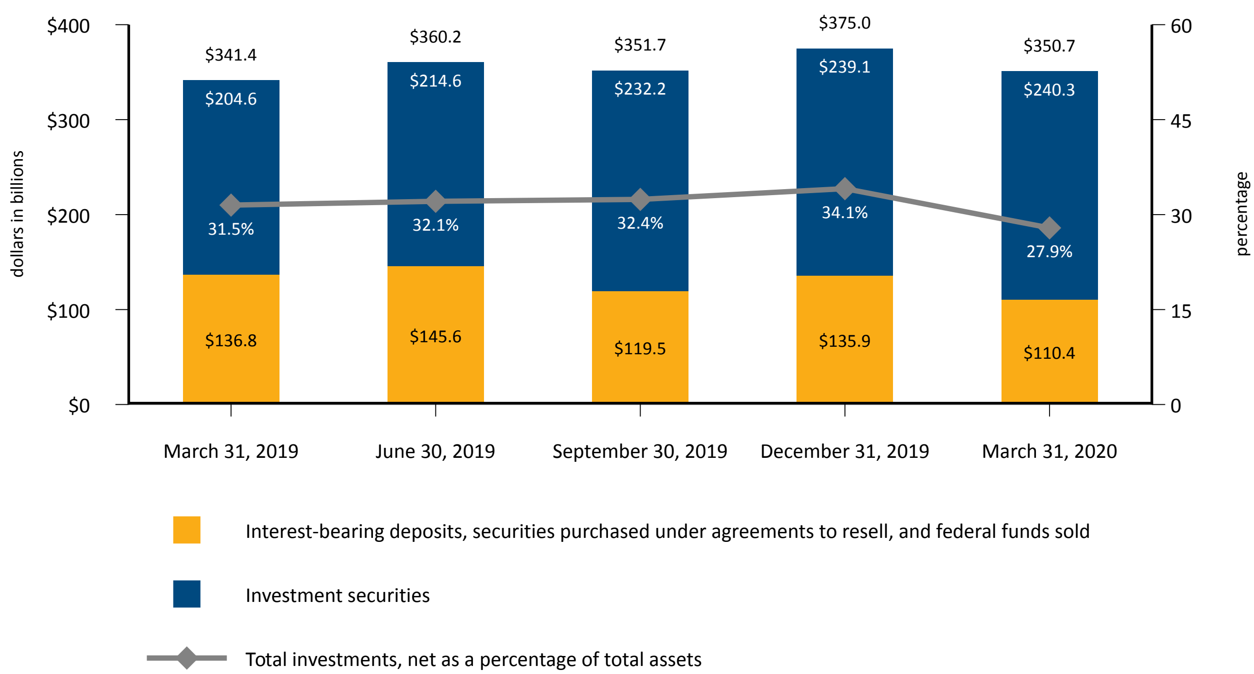
(1) Holding company information was obtained from the Federal Reserve System's web site, the National Information Center (NIC), and SEC filings. The NIC is a central repository of data about banks and other institutions for which the Federal Reserve System has a supervisory, regulatory, or research interest, including both domestic and foreign banking organizations operating in the United States.

(2) At March 31, 2020, each holding company had subsidiaries with advance borrowings in these FHLBank districts.

Investments

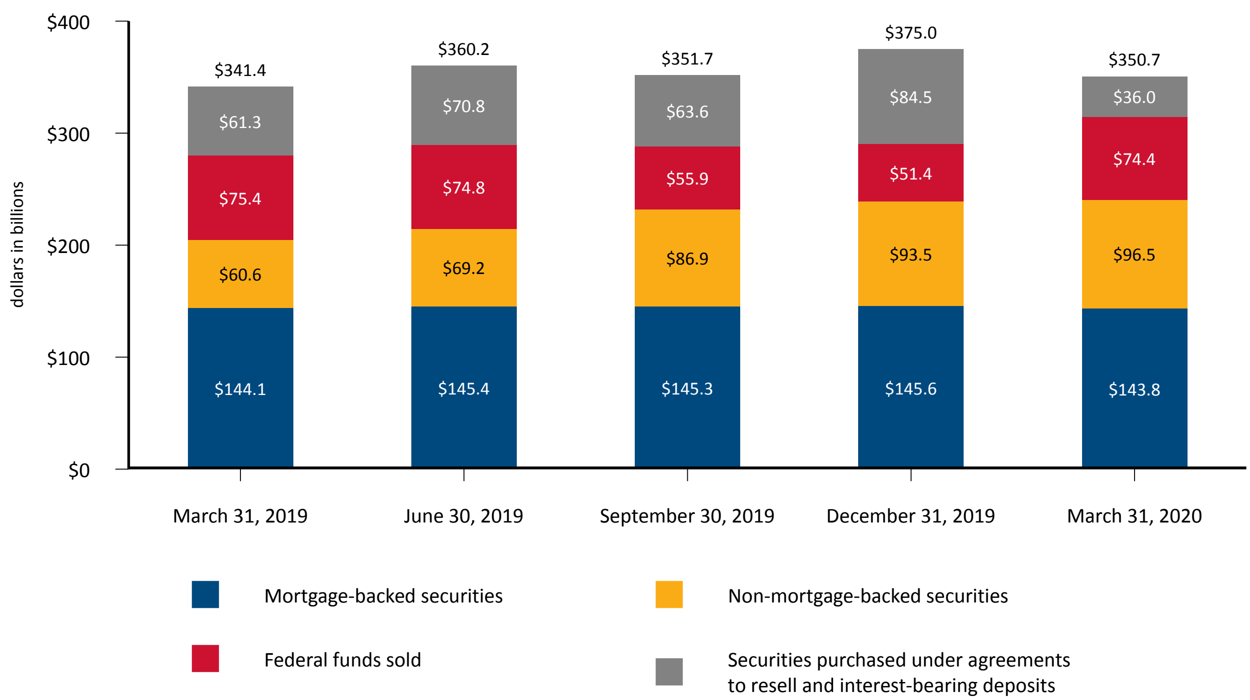
The FHLBanks maintain investment portfolios for liquidity purposes and to generate additional earnings. The income from these investment portfolios also bolsters the FHLBanks' capacity to support affordable housing and community investment. The FHLBanks invest in investment-quality securities to mitigate credit risk inherent in these portfolios. FHFA regulations prohibit the FHLBanks from investing in certain types of securities and limit the FHLBanks' investment in mortgage-backed securities (MBS) and asset-backed securities (ABS). (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Risk Management - Credit Risk - Investments* on pages 95 to 96 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for additional information regarding the regulatory restrictions on investments.) Figure 10 presents total investments for the most recent five quarters.

Figure 10 - Total Investments (Carrying Value)



Total investments, net were $350.7 billion at March 31, 2020, a decrease of $24.3 billion, or 6.5%, from $375.0 billion at December 31, 2019, driven by a decrease in securities purchased under agreements to resell, partially offset by an increase in federal funds sold. Figure 11 presents the composition of investments by product type for the most recent five quarters.

Figure 11 - Investments by Product Type (Carrying Value)



The FHLBanks maintain short-term investment portfolios, the proceeds of which may provide funds to meet the credit needs of their members and to maintain liquidity. These portfolios may include:

- interest-bearing deposits;
- securities purchased under agreements to resell;
- federal funds sold;
- certificates of deposit;
- U.S. Treasury obligations;
- Other U.S. obligations; and
- GSE obligations.

The yield earned on these short-term investments is highly correlated with short-term market interest rates. At March 31, 2020, the FHLBanks continued to maintain significant short-term investment balances as part of their ongoing investment strategy and to satisfy liquidity needs. (See *Liquidity and Capital Resources* for further discussion related to liquidity management.)

The FHLBanks maintain long-term investment portfolios as an additional source of liquidity and to earn interest income. These investments generally provide the FHLBanks with higher returns than those available on short-term investments. These portfolios may include:

- U.S. Treasury obligations;
- Other U.S. obligations;
- GSE obligations;
- Agency obligations; and
- Other MBS and ABS.

Table 8 presents the composition of investments, including investment securities, at March 31, 2020 and December 31, 2019.

Table 8 - Total Investments
(dollars in millions)

Carrying Value	March 31, 2020	December 31, 2019	Change
Interest-bearing deposits	$ 15,730	$ 14,429	$ 1,301
Securities purchased under agreements to resell	20,294	70,094	(49,800)
Federal funds sold	74,356	51,357	22,999
Total Investment Securities by Major Security Type			
Investment securities non-mortgage-backed securities			
Certificates of deposit	275	1,410	(1,135)
U.S. Treasury obligations	64,953	60,063	4,890
Other U.S. obligations	4,363	4,559	(196)
GSE and Tennessee Valley Authority obligations	20,032	20,295	(263)
State or local housing agency obligations	2,792	2,805	(13)
Federal Family Education Loan Program ABS(1)	3,081	3,352	(271)
Other	1,049	1,015	34
Total investment securities non-mortgage-backed securities	96,545	93,499	3,046
Investment securities mortgage-backed securities(1)			
U.S. obligations single-family MBS	10,488	11,126	(638)
U.S. obligations multifamily MBS	250	284	(34)
GSE single-family MBS	32,904	34,323	(1,419)
GSE multifamily MBS	96,450	94,744	1,706
Private-label MBS(2)	3,668	5,139	(1,471)
Total investment securities mortgage-backed securities	143,760	145,616	(1,856)
Total investment securities	240,305	239,115	1,190
Total investments	$ 350,685	$ 374,995	$ (24,310)

(1) MBS and Federal Family Education Loan Program ABS are presented by contractual maturity. However, their expected maturities will likely differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment fees.
(2) Includes allowance for credit losses on available-for-sale (AFS) and held-to-maturity (HTM) private-label MBS of $42 million and $5 million at March 31, 2020.

The FHLBanks' accounting for the measurement of credit losses on investments changed on January 1, 2020 with the adoption of new accounting guidance on measurement of credit losses on financial instruments. Consistent with the modified retrospective method of adoption, the prior period has not been revised to conform to the new basis of accounting. (See *Note 1 - Summary of Significant Accounting Policies* and *Note 3 - Investments* to the accompanying combined financial statements for more information.)

The FHLBanks classify investment securities as HTM, AFS, or trading securities. The interest-rate and prepayment risks associated with these investment securities are managed through a combination of debt issuance and derivatives. (See *Note 6 - Derivatives and Hedging Activities* to the accompanying combined financial statements for additional information.) Figure 12 summarizes the interest-rate payment terms of investment securities by product type for the most recent five quarters, with trading securities presented at fair value and AFS and HTM securities presented at amortized cost.

Figure 12 - Interest-Rate Payment Terms of Investment Securities by Product Type

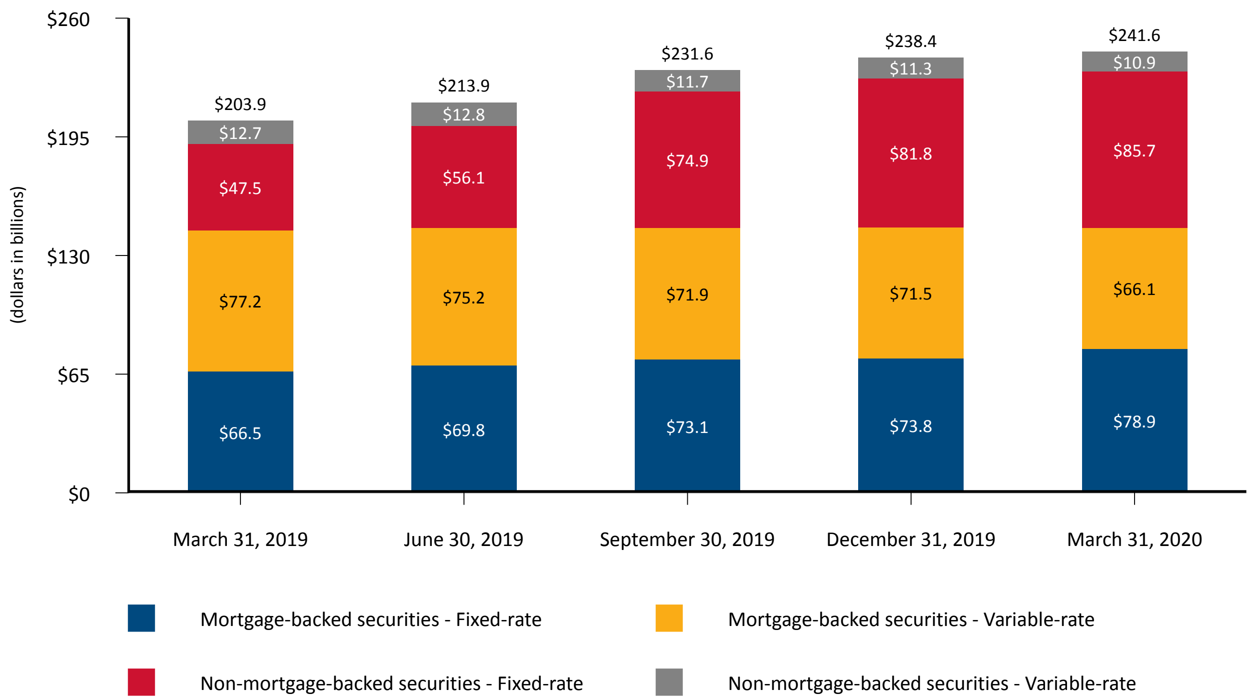


Table 9 presents the interest-rate payment terms of investment securities at March 31, 2020 and December 31, 2019.

Table 9 - Interest-Rate Payment Terms of Investment Securities
(dollars in millions)

	March 31, 2020	December 31, 2019
Trading Securities at Fair Value		
Trading non-mortgage-backed securities		
Fixed-rate	$ 56,504	$ 51,332
Variable-rate	2,219	2,217
Total trading non-mortgage-backed securities	58,723	53,549
Trading mortgage-backed securities		
Fixed-rate	1,242	1,236
Variable-rate	63	69
Total trading mortgage-backed securities	1,305	1,305
Total trading securities	$ 60,028	$ 54,854
Available-for-Sale Securities at Amortized Cost		
Available-for-sale non-mortgage-backed securities		
Fixed-rate	$ 26,531	$ 26,667
Variable-rate	5,063	5,166
Total available-for-sale non-mortgage-backed securities	31,594	31,833
Available-for-sale mortgage-backed securities		
Fixed-rate	56,999	50,687
Variable-rate	18,796	20,659
Total available-for-sale mortgage-backed securities	75,795	71,346
Total available-for-sale securities	$ 107,389	$ 103,179
Held-to-Maturity Securities at Amortized Cost		
Held-to-maturity non-mortgage-backed securities		
Fixed-rate	$ 2,669	$ 3,752
Variable-rate	3,632	4,021
Total held-to-maturity non-mortgage-backed securities	6,301	7,773
Held-to-maturity mortgage-backed securities		
Fixed-rate	20,628	21,830
Variable-rate	47,220	50,804
Total held-to-maturity mortgage-backed securities	67,848	72,634
Total held-to-maturity securities	$ 74,149	$ 80,407

Table 10 presents the principal amount of variable-rate investment securities by interest-rate index at March 31, 2020 and December 31, 2019. (See *Quantitative and Qualitative Disclosures about Market Risk* for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 10 - Variable-Rate Investment Securities by Interest-Rate Index
(dollars in millions)

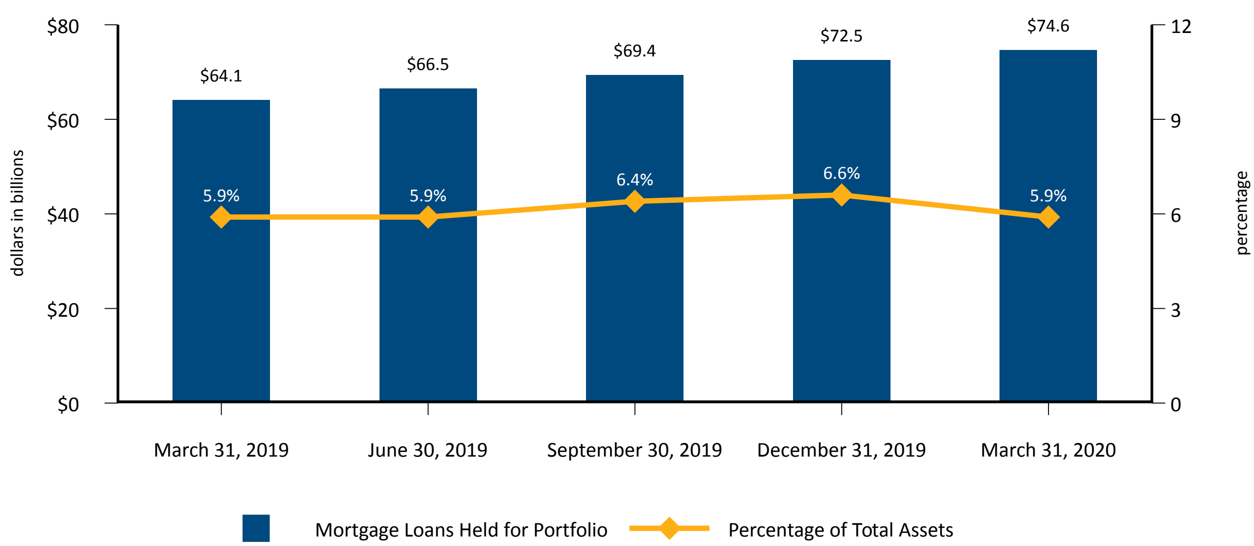
	March 31, 2020			December 31, 2019		
	Non-mortgage-backed securities	Mortgage-backed securities	Total	Non-mortgage-backed securities	Mortgage-backed securities	Total
LIBOR	$ 8,243	$ 65,357	$ 73,600	$ 8,771	$ 71,297	$ 80,068
SOFR	125	—	125	125	—	125
Other	2,299	1,103	3,402	2,495	948	3,443
Total principal amount of variable-rate investment securities	$ 10,667	$ 66,460	$ 77,127	$ 11,391	$ 72,245	$ 83,636

Limits on Certain Investments. FHFA regulations prohibit an FHLBank from purchasing MBS/ABS if its investment in these securities exceeds 300% of that FHLBank's previous month-end regulatory capital on the day it intends to purchase the securities. Each of the FHLBanks was in compliance with this regulatory requirement at the time of its respective securities purchases. However, at March 31, 2020, the FHLBank of Dallas exceeded the 300% regulatory limit and was precluded from purchasing additional MBS/ABS investments until its MBS/ABS to total regulatory capital percentage declined below 300%. The FHLBank of Dallas was not required to sell any previously purchased securities. On a combined basis, the FHLBanks' percentage of MBS/ABS (net of regulatory excluded MBS) was 233% of total combined regulatory capital at March 31, 2020.

Mortgage Loans Held for Portfolio

An FHLBank may purchase fixed-rate mortgage loans to support the FHLBank's housing mission, provide an additional source of liquidity to FHLBank members, diversify its investments, and generate additional earnings. The two primary programs are the Mortgage Purchase Program (MPP) and the Mortgage Partnership Finance® Program (MPF Program). (See *Risk Management - Credit Risk - Mortgage Loans Held for Portfolio* for more information.) Figure 13 presents mortgage loans held for portfolio (designated as held for investment for accounting purposes) for the most recent five quarters.

Figure 13 - Mortgage Loans Held for Portfolio (Carrying Value)



Mortgage loans grew to $74.6 billion at March 31, 2020, an increase of 2.9% from $72.5 billion at December 31, 2019. Mortgage loan purchases of $5.6 billion outpaced principal repayments of $3.5 billion, as the FHLBanks were able to continue to grow their mortgage loan portfolios. The allowance for credit losses on mortgage loans was $29 million at March 31, 2020, an increase of $13 million from $16 million at December 31, 2019, due primarily to the change in accounting for measurement of credit losses on January 1, 2020.

Table 11 - Mortgage Loans Held for Portfolio
(dollars in millions)

	March 31, 2020	December 31, 2019	Change
Mortgage loans held for portfolio	$ 74,591	$ 72,508	$ 2,083
Allowance for credit losses on mortgage loans	(29)	(16)	(13)
Mortgage loans held for portfolio, net	$ 74,562	$ 72,492	$ 2,070

The FHLBanks’ methodology for determining the allowance for credit losses on mortgage loans changed on January 1, 2020 with the adoption of new accounting guidance on measurement of credit losses on financial instruments. Consistent with the modified retrospective method of adoption, the prior period has not been revised to conform to the new basis of accounting. (See *Note 1 - Summary of Significant Accounting Policies* and *Note 5 - Mortgage Loans* to the accompanying combined financial statements for more information.)

Table 12 presents the risk elements and credit losses of mortgage loans held for portfolio. Periodically, each FHLBank evaluates the allowance for credit losses for its mortgage loans based on its policies and procedures to determine if an allowance for credit losses is necessary.

Table 12 - Mortgage Loans Held for Portfolio - Risk Elements and Credit Losses
(dollars in millions)

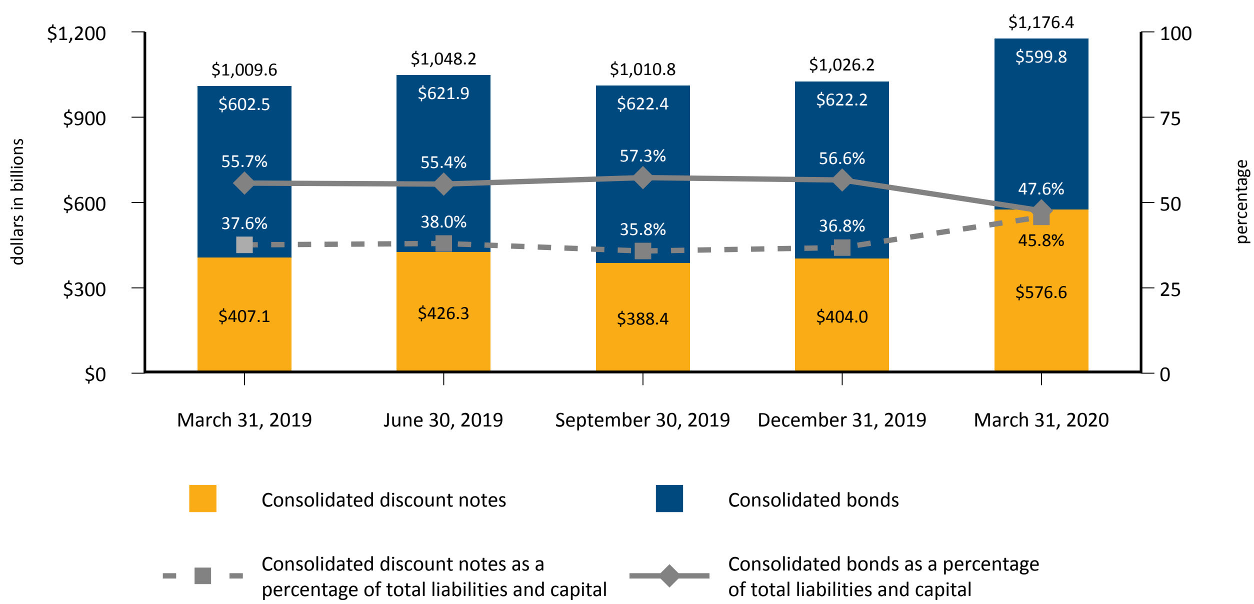
Unpaid Principal Balance	March 31, 2020	December 31, 2019
Total past due 90 days or more and still accruing interest	$ 81	$ 78
Non-accrual loans	$ 129	$ 132
Troubled debt restructurings (TDRs), performing	$ 76	$ 78

	Three Months Ended March 31, 2020	Year Ended December 31, 2019
Allowance for credit losses, beginning of period	$ 16	$ 15
Adjustment for cumulative effect of accounting change	11	—
Charge-offs, net of recoveries	(1)	(1)
Provision (reversal) for credit losses	3	2
Allowance for credit losses, end of period	$ 29	$ 16

Consolidated Obligations

Consolidated obligations consist of consolidated bonds and consolidated discount notes, which are joint and several obligations of all FHLBanks. The FHLBanks issue consolidated obligations through the Office of Finance as their agent. Consolidated obligations are the principal funding source used by the FHLBanks to make advances and to purchase mortgage loans and investments. Figure 14 presents consolidated bonds and consolidated discount notes for the most recent five quarters.

Figure 14 - Consolidated Obligations Outstanding (Carrying Value)



The carrying value of consolidated obligations totaled $1,176.4 billion at March 31, 2020, an increase of $150.2 billion, or 14.6%, from $1,026.2 billion at December 31, 2019, in line with the increase in total assets, principally resulting from the growth in advances. The growth in consolidated obligations was driven by a 42.7% increase in consolidated discount notes as investors preferred short-term, high-quality money market instruments amid the uncertainty in the financial markets due to the COVID-19 pandemic.

Consolidated bonds may be issued to raise short-, intermediate-, or long-term funds. Consolidated bonds are issued with either fixed-rate coupon payment terms, or variable-rate coupon payment terms that are indexed to LIBOR, SOFR, or other specified indices, and have maturities ranging from three months to 30 years. The carrying value of consolidated bonds was $599.8 billion at March 31, 2020, a decrease of $22.3 billion, or 3.6%, from $622.2 billion at December 31, 2019. Consolidated bonds represented 51.0% and 60.6% of total consolidated obligations outstanding at March 31, 2020 and December 31, 2019.

Consolidated discount notes are issued to provide short-term funding and have a maturity range of one day to one year. They are generally issued below face value and mature at face value. A significant portion of consolidated discount note activity typically results from the refinancing of maturing discount notes. The carrying value of consolidated discount notes was $576.6 billion at March 31, 2020, an increase of $172.6 billion, or 42.7%, from $404.0 billion at December 31, 2019. Consolidated discount notes represented 49.0% and 39.4% of total consolidated obligations outstanding at March 31, 2020 and December 31, 2019.

Figures 15 and 16 present the principal amount of consolidated obligations by product type and by contractual maturity for the most recent five quarters.

Figure 15 - Consolidated Obligations by Product Type
(dollars in billions)

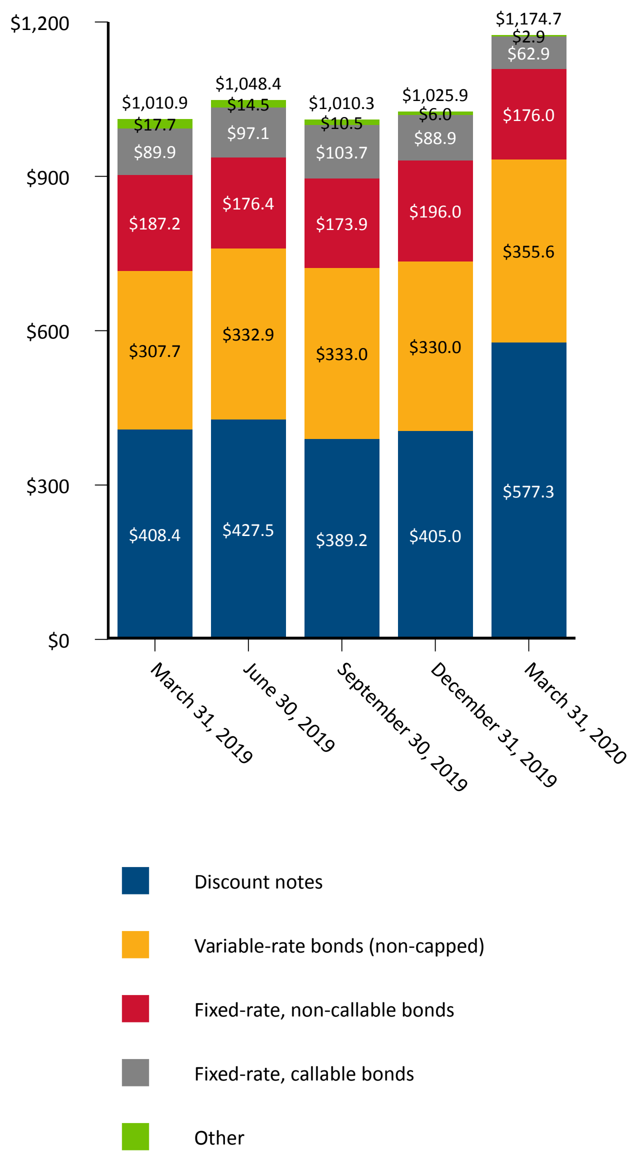


Figure 16 - Consolidated Obligations by Contractual Maturity
(dollars in billions)

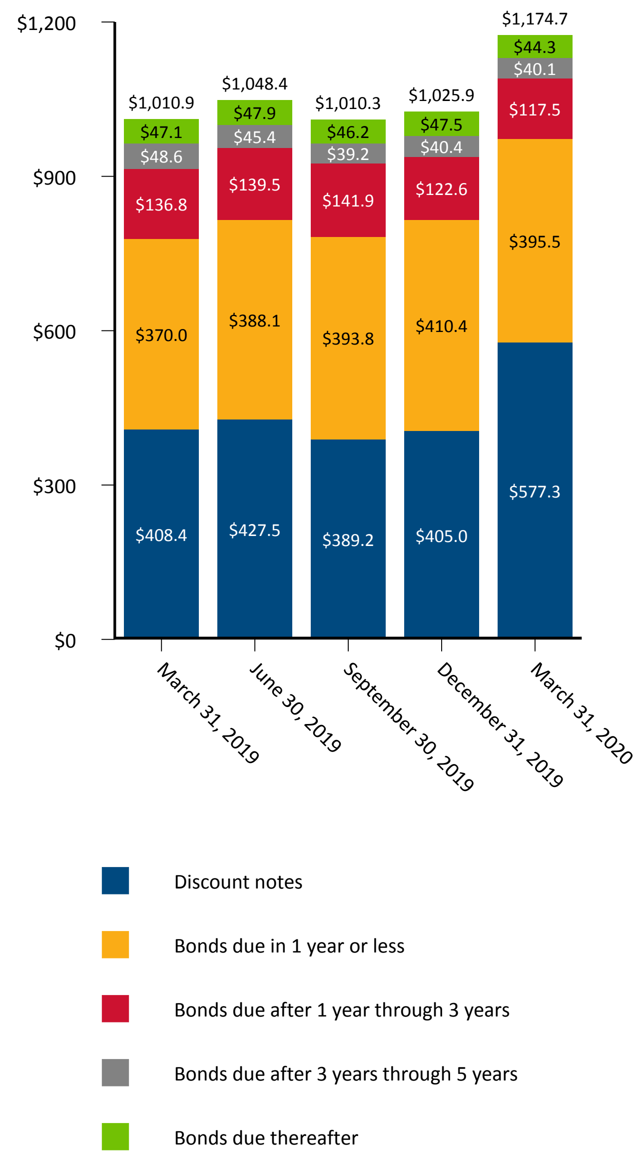


Table 13 presents the composition of consolidated obligations by product type and by contractual maturity at March 31, 2020 and December 31, 2019.

Table 13 - Types of Consolidated Obligations by Contractual Maturity
(dollars in millions)

	March 31, 2020		December 31, 2019		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Consolidated Discount Notes						
Overnight	$ 1,000	0.1%	$ 9,661	0.9%	$ (8,661)	(89.6)%
Due after 1 day through 30 days	152,384	13.0%	132,632	12.9%	19,752	14.9 %
Due after 30 days through 90 days	234,961	20.0%	208,670	20.3%	26,291	12.6 %
Due after 90 days through 1 year	188,965	16.1%	53,990	5.3%	134,975	250.0 %
Total principal amount	577,310	49.2%	404,953	39.4%	172,357	42.6 %
Consolidated Bonds						
Fixed-rate, non-callable						
Due in 1 year or less	75,870	6.5%	96,657	9.5%	(20,787)	(21.5)%
Due after 1 year through 3 years	59,950	5.1%	58,290	5.7%	1,660	2.8 %
Due after 3 years through 5 years	22,035	1.9%	22,980	2.2%	(945)	(4.1)%
Thereafter	18,110	1.4%	18,120	1.8%	(10)	(0.1)%
Total principal amount	175,965	14.9%	196,047	19.2%	(20,082)	(10.2)%
Fixed-rate, callable						
Due in 1 year or less	4,117	0.4%	24,386	2.5%	(20,269)	(83.1)%
Due after 1 year through 3 years	15,997	1.4%	21,003	2.0%	(5,006)	(23.8)%
Due after 3 years through 5 years	17,503	1.5%	16,612	1.6%	891	5.4 %
Thereafter	25,275	2.2%	26,911	2.6%	(1,636)	(6.1)%
Total principal amount	62,892	5.5%	88,912	8.7%	(26,020)	(29.3)%
Variable-rate (non-capped)						
Due in 1 year or less	315,236	26.8%	288,973	28.2%	26,263	9.1 %
Due after 1 year through 3 years	40,388	3.4%	41,055	4.0%	(667)	(1.6)%
Due after 3 years through 5 years	—	—	—	—	—	—
Thereafter	—	—	—	—	—	—
Total principal amount	355,624	30.2%	330,028	32.2%	25,596	7.8 %
Step-up/step-down, callable						
Due in 1 year or less	—	—	125	—	(125)	(100.0)%
Due after 1 year through 3 years	545	—	1,520	0.1%	(975)	(64.1)%
Due after 3 years through 5 years	525	—	780	0.1%	(255)	(32.7)%
Thereafter	813	0.1%	2,145	0.2%	(1,332)	(62.1)%
Total principal amount	1,883	0.1%	4,570	0.4%	(2,687)	(58.8)%
Other						
Due in 1 year or less	295	—	235	—	60	25.5 %
Due after 1 year through 3 years	660	0.1%	755	0.1%	(95)	(12.6)%
Due after 3 years through 5 years	—	—	15	—	(15)	(100.0)%
Thereafter	40	—	379	—	(339)	(89.4)%
Total principal amount	995	0.1%	1,384	0.1%	(389)	(28.1)%
Total principal amount consolidated bonds	597,359	50.8%	620,941	60.6%	(23,582)	(3.8)%
Total principal amount	1,174,669	100.0%	1,025,894	100.0%	$ 148,775	14.5 %
Other adjustments(1)	1,741		302			
Total consolidated obligations	$ 1,176,410		$ 1,026,196			

(1) Consists of hedging and fair value option valuation adjustments, unamortized premiums and discounts, and combining adjustments.

Table 14 presents the principal amount of variable-rate consolidated bonds by interest-rate index at March 31, 2020 and December 31, 2019. (See *Quantitative and Qualitative Disclosures about Market Risk* for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 14 - Variable-Rate Consolidated Bonds by Interest-Rate Index
(dollars in millions)

	March 31, 2020	December 31, 2019
LIBOR	$ 193,719	$ 206,597
SOFR	162,060	121,450
Other	50	2,550
Total principal amount of variable-rate consolidated bonds	$ 355,829	$ 330,597

Table 15 presents cash flows related to consolidated obligations, which illustrates proceeds exceeding payments for the three months ended March 31, 2020, resulting in higher consolidated obligations outstanding. The volume of both net proceeds and total payments of consolidated obligations decreased during the three months ended March 31, 2020, compared to the three months ended March 31, 2019, due primarily to a decrease in overnight discount notes, replaced by longer-term discount notes with maturities ranging from 30 days through one year.

Table 15 - Net Proceeds and Payments for Consolidated Obligations
(dollars in millions)

	Three Months Ended March 31,		
	2020	2019	Change
Net proceeds from issuance of consolidated obligations			
Discount notes	$ 1,357,780	$ 1,787,253	$ (429,473)
Bonds	183,335	129,520	53,815
Net proceeds	1,541,115	1,916,773	$ (375,658)
Payments for maturing and retiring consolidated obligations			
Discount notes	1,185,363	1,806,335	$ (620,972)
Bonds	206,829	131,225	75,604
Total payments	1,392,192	1,937,560	$ (545,368)
Net change	$ 148,923	$ (20,787)	

Consolidated bonds often have investor-determined features. The decision to issue a consolidated bond using a particular structure is based on the desired amount of funding and the ability of the FHLBank(s) receiving the proceeds of the consolidated bond issued to hedge the risks. This strategy of issuing consolidated obligations while simultaneously entering into derivative transactions enables an FHLBank to offer a wider range of attractively priced advances to its members and may allow an FHLBank to reduce its funding costs. The continued attractiveness of this strategy depends on yield relationships between the FHLBanks' consolidated obligations and the derivatives markets. If conditions change, an FHLBank may alter the types or terms of the consolidated obligations that it issues. The increase in funding alternatives available to the FHLBanks through negotiated debt/swap transactions is beneficial to the FHLBanks because it may diversify the investor base, reduce funding costs, and/or provide additional asset/liability management tools.

Table 16 presents the bond types the FHLBanks issued for their bond funding needs. The types of consolidated bonds issued can fluctuate based on comparative changes in their cost levels, supply and demand conditions, advance demand, and the FHLBanks' individual balance sheet management strategies. During the three months ended March 31, 2020, investors' preference for short-term, high-quality money market instruments amid the uncertainty in the financial markets due to the COVID-19 pandemic resulted in an increase in the demand for short-term variable-rate consolidated bonds compared to the three months ended March 31, 2019.

Table 16 - Percentage of Total Consolidated Bonds Issued by Bond Type

	Three Months Ended March 31,	
	2020	2019
Single-index, variable-rate(1)	77.9%	70.9%
Fixed-rate, noncallable	8.5%	15.9%
Fixed-rate, callable	13.5%	12.8%
Step-up/step-down(2)	0.1%	0.4%
Total	100.0%	100.0%

(1) Includes SOFR-linked consolidated bonds of $80.4 billion and $27.6 billion, which represented 56.3% and 30.0% of the single-index variable-rate consolidated bonds issued during the three months ended March 31, 2020 and 2019.
(2) Primarily consists of callable step-up bonds.

Deposits

The FHLBanks offer demand and overnight deposit programs to members and to qualifying non-members. In addition, certain FHLBanks offer short-term interest-bearing deposit programs to members, and in certain cases, to qualifying non-members. Deposits represent a relatively small portion of the FHLBanks' funding, totaling $15.1 billion at March 31, 2020, an increase of $4.6 billion, or 44.7%, from December 31, 2019. Deposit balances vary depending on market factors, such as the attractiveness of the FHLBanks' deposit pricing relative to the rates available on alternative money market instruments, FHLBank members' investment preferences with respect to the maturity of their investments, and FHLBank members' liquidity. Interest-bearing demand and overnight deposits represented 90.0% and 90.1% of deposits at March 31, 2020 and December 31, 2019, with the remaining deposits primarily being term deposits and non-interest-bearing deposits. Interest-bearing demand and overnight deposits pay interest based on a daily interest rate. Term deposits pay interest based on a fixed rate determined at the issuance of the deposit.

Capital

GAAP capital consists of capital stock, retained earnings, and accumulated other comprehensive income (loss). Figure 17 presents GAAP capital and the GAAP capital-to-assets ratio for the most recent five quarters.

Figure 17 - GAAP Capital

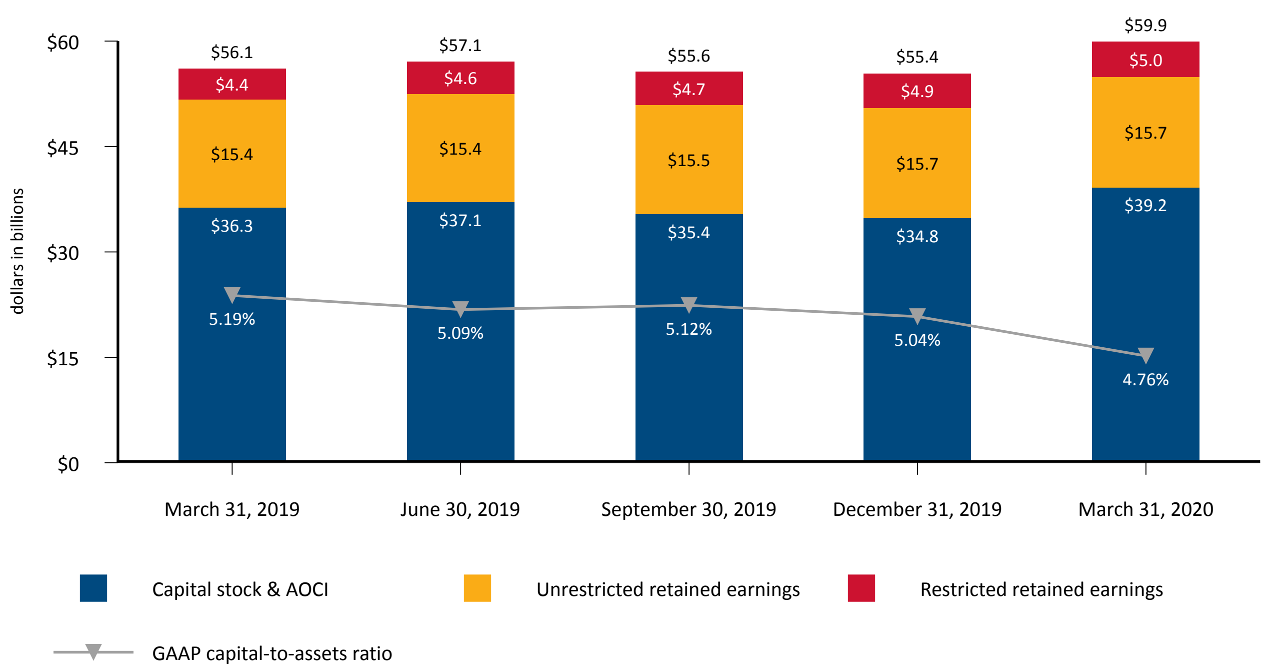


Table 17 - Total Capital and Capital-to-Assets Ratios
(dollars in millions)

	March 31, 2020	December 31, 2019	Change
Capital stock	$ 41,037	$ 34,495	$ 6,542
Retained earnings:			
Unrestricted	15,701	15,686	15
Restricted(1)	5,028	4,902	126
Total retained earnings	20,729	20,588	141
AOCI	(1,842)	344	(2,186)
Total GAAP capital	59,924	55,427	4,497
Exclude: AOCI	1,842	(344)	2,186
Add: Mandatorily redeemable capital stock	1,726	1,378	348
Total combined regulatory capital(2)	$ 63,492	$ 56,461	$ 7,031
Total assets	$ 1,259,103	$ 1,099,113	$ 159,990
Combined GAAP capital-to-assets ratio	4.76%	5.04%	
Combined regulatory capital-to-assets ratio(3)	5.04%	5.14%	

(1) Restricted retained earnings was established through the Capital Agreement, as amended and is intended to enhance the capital position of each FHLBank. (See *Note 9 - Capital* to the accompanying combined financial statements for additional information about the Capital Agreement and restricted retained earnings.)
(2) Regulatory capital requirements apply to individual FHLBanks, and the combined amounts are for analysis only. The sum of the individual FHLBank regulatory capital amounts does not agree to the total combined regulatory capital due to combining adjustments.
(3) The combined regulatory capital-to-assets ratio is calculated based on the FHLBanks' combined regulatory capital as a percentage of combined total assets. (See *Note 9 - Capital* to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

GAAP Capital. Total GAAP capital was $59.9 billion at March 31, 2020, an increase of 8.1% from $55.4 billion at December 31, 2019, due primarily to an increase in capital stock, partially offset by a decrease in AOCI. The combined GAAP capital-to-assets ratio was 4.76% at March 31, 2020, a decrease of 28 basis points from 5.04% at December 31, 2019.

Capital Stock. Capital stock was $41.0 billion at March 31, 2020, an increase of 19.0% from $34.5 billion at December 31, 2019, due principally to the net issuance of activity-based capital stock driven by the increase in advances.

Retained Earnings. Retained earnings grew to $20.7 billion at March 31, 2020, an increase of 0.7% from $20.6 billion at December 31, 2019, resulting from net income of $627 million, partially offset by dividends of $458 million. Unrestricted retained earnings were $15.7 billion at March 31, 2020, a growth of 0.1% compared to December 31, 2019. Restricted retained earnings were $5.0 billion at March 31, 2020, a growth of 2.6% from $4.9 billion at December 31, 2019.

Accumulated Other Comprehensive Income (Loss). AOCI was a loss of $1.8 billion at March 31, 2020, a decrease of $2.2 billion, due principally to net unrealized losses on mortgage-backed securities classified as available-for-sale investment securities.

Figures 18 and 19 present the components of capital as a percentage of total GAAP capital at March 31, 2020 and December 31, 2019.

Figure 18 - Capital Components as a Percentage of Total GAAP Capital at March 31, 2020

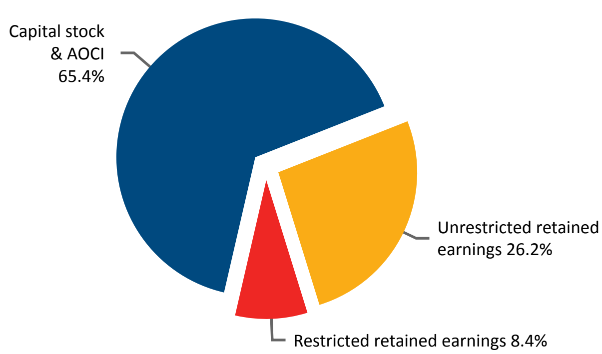
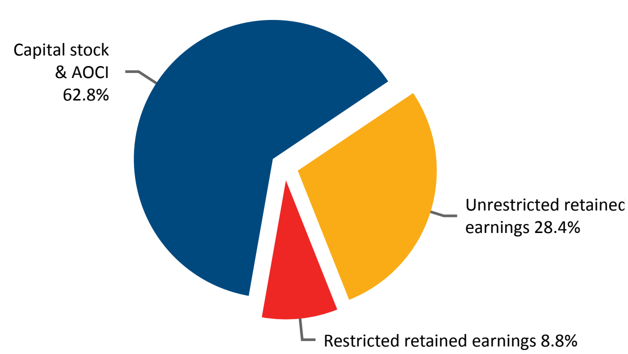


Figure 19 - Capital Components as a Percentage of Total GAAP Capital at December 31, 2019



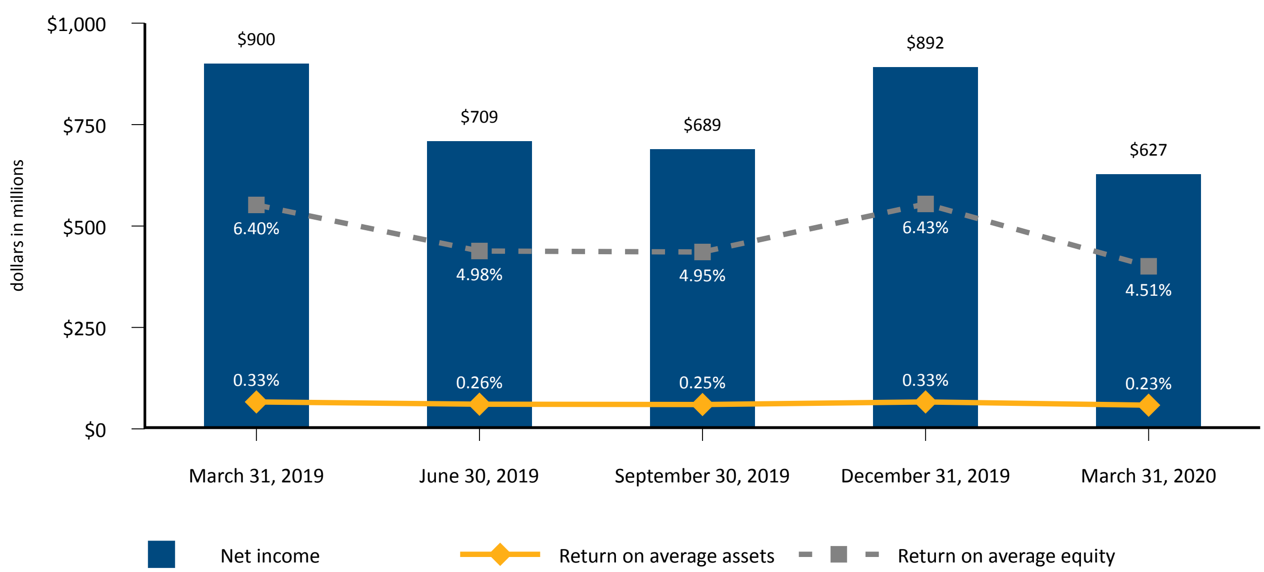
Regulatory Capital. Total combined regulatory capital was $63.5 billion at March 31, 2020, an increase of 12.5% from $56.5 billion at December 31, 2019, due primarily to an increase in capital stock.

Combined Results of Operations

Net Income

The primary source of revenue for the FHLBanks is interest income earned on advances, mortgage loans held for portfolio, and investments. The primary items of expense for the FHLBanks are interest paid on consolidated obligations; operating expenses, including employee compensation and benefits; and Affordable Housing Program assessments. The FHLBanks may also recognize non-interest gains and losses, such as gains and losses on derivatives and hedging activities and gains and losses on investment securities. Due to the FHLBanks' cooperative structure, the FHLBanks generally earn a narrow net interest spread. Accordingly, the FHLBanks' net income is relatively small compared to total assets and total liabilities. Figure 20 presents net income, return on average assets, and return on average equity for the most recent five quarters.

Figure 20 - Net Income



Net income was $627 million for the three months ended March 31, 2020, a decrease of 30.3% compared to the three months ended March 31, 2019, primarily resulting from a decrease in net interest income, partially offset by higher net gains in non-interest income.

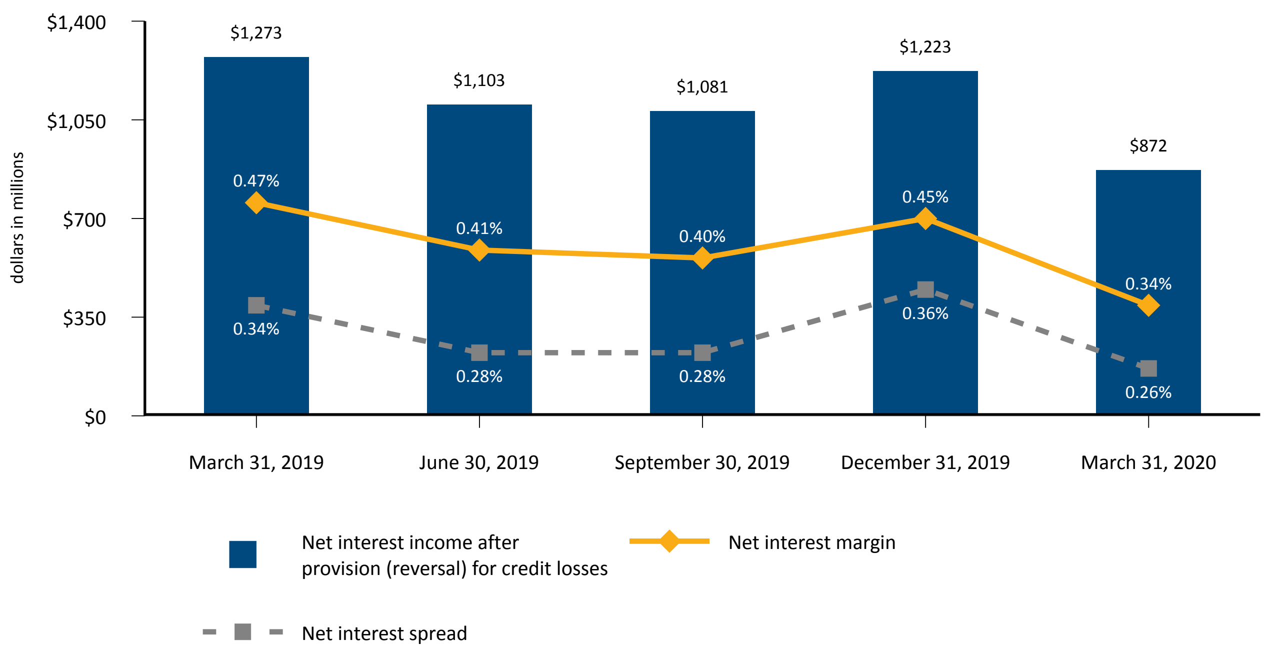
Table 18 - Changes in Net Income
(dollars in millions)

	Three Months Ended March 31,		
	2020	2019	Change
Net interest income after provision (reversal) for credit losses	$ 872	$ 1,273	$ (401)
Non-interest income	192	63	129
Non-interest expense	365	334	31
Affordable Housing Program assessments	72	102	(30)
Net income	$ 627	$ 900	$ (273)

Net Interest Income after Provision (Reversal) for Credit Losses

The primary source of each FHLBank's earnings is net interest income, which is the interest income on advances, mortgage loans, and investments, less the interest expense on consolidated obligations, deposits, and mandatorily redeemable capital stock. Figure 21 presents net interest income after provision (reversal) for credit losses, net interest margin, and net interest spread for the most recent five quarters.

Figure 21 - Net Interest Income after Provision (Reversal) for Credit Losses



Net interest income after provision (reversal) for credit losses was $872 million for the three months ended March 31, 2020, a decrease of 31.5% compared to the three months ended March 31, 2019.

Table 19 - Net Interest Income after Provision (Reversal) for Credit Losses
(dollars in millions)

	Three Months Ended March 31,		
	2020	2019	Change
Interest income			
Advances	$ 2,892	$ 4,772	$ (1,880)
Investments and other	1,735	2,290	(555)
Mortgage loans held for portfolio	566	562	4
Total interest income	5,193	7,624	(2,431)
Interest expense			
Consolidated obligations - Discount notes	1,523	2,561	(1,038)
Consolidated obligations - Bonds	2,710	3,733	(1,023)
Total consolidated obligations	4,233	6,294	(2,061)
Deposits and mandatorily redeemable capital stock	45	56	(11)
Total interest expense	4,278	6,350	(2,072)
Net interest income	915	1,274	(359)
Provision (reversal) for credit losses	43	1	42
Net interest income after provision (reversal) for credit losses	$ 872	$ 1,273	$ (401)

Provision for credit losses was $43 million for the three months ended March 31, 2020, an increase of $42 million compared to the three months ended March 31, 2019. The provision for credit losses for the three months ended March 31, 2020, consisted of a $40 million provision for credit losses on private-label MBS driven by a decline in fair values and a $3 million provision for credit losses on mortgage loans held for portfolio.

Table 20 presents average balances of and average yields/rates on the major categories of interest-earning assets and interest-bearing liabilities, net interest spread, and net interest margin. Due to the FHLBanks' cooperative structure, the FHLBanks generally earn a narrow net interest spread.

Table 20 - Analysis of Interest Income/Expense and Average Yield/Rate
(dollars in millions)

	Three Months Ended March 31,					
	2020			2019		
	Average Balance	Interest Income/ Expense	Average Yield/ Rate	Average Balance	Interest Income/ Expense	Average Yield/ Rate
Interest-bearing deposits and other	$ 19,664	$ 67	1.37%	$ 13,750	$ 86	2.54%
Securities purchased under agreements to resell	49,184	177	1.45%	46,528	285	2.48%
Federal funds sold	73,106	227	1.25%	75,757	459	2.46%
Investment securities(1)(2)	239,086	1,264	2.13%	191,506	1,460	3.09%
Advances	641,441	2,892	1.81%	697,747	4,772	2.77%
Mortgage loans(3)	73,689	566	3.09%	63,227	562	3.60%
Total interest-earning assets	1,096,170	5,193	1.91%	1,088,515	7,624	2.84%
Other non-interest-earning assets	8,224			6,872		
Fair-value adjustment on investment securities(2)	3,291			2,284		
Total assets	$ 1,107,685			$ 1,097,671		
Liabilities and Capital						
Consolidated obligations - Discount notes	$ 414,249	1,523	1.48%	$ 423,635	2,561	2.45%
Consolidated obligations - Bonds	615,091	2,710	1.77%	598,884	3,733	2.53%
Deposits and mandatorily redeemable capital stock	12,473	45	1.45%	8,404	56	2.70%
Total interest-bearing liabilities	1,041,813	4,278	1.65%	1,030,923	6,350	2.50%
Non-interest-bearing liabilities	9,895			9,722		
Total liabilities	1,051,708			1,040,645		
Capital	55,977			57,026		
Total liabilities and capital	$ 1,107,685			$ 1,097,671		
Net interest income		$ 915			$ 1,274	
Net interest spread			0.26%			0.34%
Net interest margin			0.34%			0.47%
Total interest-earning assets to total interest-bearing liabilities	105.22%			105.59%		

(1) Investment securities consist of Trading, AFS, and HTM securities.
(2) The average balances of AFS securities and HTM securities are reflected at amortized cost. (See *Note 3 - Investments* for additional information.)
(3) Non-accrual loans are included in the average balances used to determine average yield/rate.

Changes in both average interest rates and average balances of interest-earning assets and interest-bearing liabilities have a direct influence on changes in net interest income, net interest margin, and net interest spread. Table 21 presents changes in interest income and interest expense due to rate-related and volume-related factors. Changes in interest income and interest expense not identifiable as either rate-related or volume-related, but rather attributable to both rate and volume changes, have been allocated to the rate and volume categories based on the proportion of the absolute value of the rate and volume changes.

Table 21 - Rate and Volume Analysis
(dollars in millions)

	Three Months Ended March 31, 2020 vs. 2019		
	Volume	Rate	Total
Interest Income			
Interest-bearing deposits and other	$ 29	$ (48)	$ (19)
Securities purchased under agreements to resell	15	(123)	(108)
Federal funds sold	(15)	(217)	(232)
Investment securities(1)	312	(508)	(196)
Advances	(360)	(1,520)	(1,880)
Mortgage loans	85	(81)	4
Total interest income	66	(2,497)	(2,431)
Interest Expense			
Consolidated obligations - Discount notes	(56)	(982)	(1,038)
Consolidated obligations - Bonds	99	(1,122)	(1,023)
Deposits and mandatorily redeemable capital stock	21	(32)	(11)
Total interest expense	64	(2,136)	(2,072)
Changes in net interest income	$ 2	$ (361)	$ (359)

(1) Investment securities consist of Trading, AFS, and HTM securities.

Net interest income was $915 million for the three months ended March 31, 2020, a decrease of 28.2% compared to the three months ended March 31, 2019.

- Interest income was $5,193 million for the three months ended March 31, 2020, a decrease of 31.9% compared to the three months ended March 31, 2019, resulting from lower average yields on interest-earning assets, principally advances. The average yield on interest-earning assets was 1.91% for the three months ended March 31, 2020, a decrease of 93 basis points in the lower interest-rate environment, compared to the three months ended March 31, 2019.

- Interest expense was $4,278 million for the three months ended March 31, 2020, a decrease of 32.6% compared to the three months ended March 31, 2019, resulting primarily from lower average rates on consolidated obligations. The average rate on consolidated obligations was 1.65% for the three months ended March 31, 2020, a decrease of 85 basis points in the lower interest-rate environment, compared to the three months ended March 31, 2019.

Net interest margin was 0.34% for the three months ended March 31, 2020, a decrease of 13 basis points compared to the three months ended March 31, 2019. This decrease in net interest margin was due to several factors, including:

- The tightening of spreads between interest-earning assets and interest-bearing liabilities due to lower interest rates and wider spreads for consolidated obligations to certain market benchmark interest rates.

- The effect of hedge ineffectiveness included in net interest income on designated fair value hedges.

- The effect of lower interest rates on variable-rate interest-earning assets and the runoff of higher-yielding interest-earning assets and replacement of these assets in the lower interest-rate environment, including a decrease in yields on short-term investments funded by equity capital and short-term debt.

- The acceleration of amortization of premiums on mortgage loans and MBS due to higher prepayments, and the accelerated recognition of concession fees on called consolidated obligations.

Factors Affecting Net Interest Income

Advances. Interest income on advances was $2,892 million for the three months ended March 31, 2020, a decrease of 39.4% compared to the three months ended March 31, 2019, resulting primarily from a decrease in the average yield on advances. The average yield on advances was 1.81% for the three months ended March 31, 2020, a decrease of 96 basis points compared to the three months ended March 31, 2019. The decrease in the average yield on advances was the result of lower interest rates on advances driven by the lower interest-rate environment, including the effect of derivatives and hedging activities on interest income from advances and the runoff of higher-yielding advances and replacement of these advances in the lower interest-rate environment. (See *Table 22* for additional information regarding the effect of derivatives and hedging activities on net interest income.)

Mortgage Loans. Interest income on mortgage loans was $566 million for the three months ended March 31, 2020, an increase of 0.7% compared to the three months ended March 31, 2019, resulting primarily from an increase in the average balance of mortgage loans, partially offset by the lower average yield on mortgage loans. The average balance of mortgage loans was $73.7 billion for the three months ended March 31, 2020, an increase of 16.5% compared to the three months ended March 31, 2019, as the FHLBanks were able to continue to grow their mortgage loan portfolios. The average yield on mortgage loans was 3.09% for the three months ended March 31, 2020, a decrease of 51 basis points compared to the three months ended March 31, 2019. The decrease in the average yield on mortgage loans was the result of lower interest rates on mortgage loans driven by the lower interest-rate environment and the acceleration of amortization of premiums on mortgage loans due to higher prepayments.

Total Investments. Interest income on investments was $1,735 million for three months ended March 31, 2020, a decrease of 24.2% compared to the three months ended March 31, 2019, resulting primarily from decreases in the average yields on investments, partially offset by an increase in the average balance of investment securities. The average yield on investments was 1.83% for the three months ended March 31, 2020, a decrease of 101 basis points compared to the three months ended March 31, 2019. The decrease in the average yield on investments was the result of lower interest rates on investments driven by the lower interest-rate environment, the runoff of higher-yielding investments and replacement of these investments in the lower interest-rate environment, and the acceleration of amortization of premiums on MBS due to higher prepayments. The average balance of investment securities was $239.1 billion for the three months ended March 31, 2020, an increase of 24.8% compared to the three months ended March 31, 2019, driven by an increase in liquidity investments, primarily the average balance of U.S. Treasury obligations classified as trading securities. (See *Financial Discussion and Analysis - Liquidity and Capital Resources* for more discussion regarding the FHLBanks' liquidity requirements.)

Consolidated Obligations. Interest expense on consolidated obligations was $4,233 million for the three months ended March 31, 2020, a decrease of 32.7% compared to the three months ended March 31, 2019, resulting from lower average rates on consolidated obligations. The average rate on consolidated obligations was 1.65% for the three months ended March 31, 2020, a decrease of 85 basis points compared to the three months ended March 31, 2019. The decrease in the average rate on consolidated obligations was driven by the lower interest-rate environment, including the effect of derivatives and hedging activities on interest expense from consolidated obligations and the accelerated recognition of concession fees on called consolidated obligations, partially offset by wider spreads for consolidated obligations to certain market benchmark interest rates. (See *Table 22* for additional information regarding the effect of derivatives and hedging activities on net interest income.)

Effect of Derivatives and Hedging Activities on Net Interest Income

Net interest income includes components related to the effect of derivatives and hedging activities resulting from the FHLBanks' hedging strategies. If a hedging relationship is designated and qualifies for hedge accounting treatment, the net interest settlements of interest receivables or payables related to derivatives designated in fair value or cash flow hedge relationships are recognized as adjustments to interest income or expense of the designated hedged item. In addition, when hedge accounting is discontinued, the cumulative basis adjustment on the hedged item is amortized or accreted into net interest income over the remaining life of the hedged item using a level-yield methodology. (See *Note 6 - Derivatives and Hedging Activities* to the accompanying combined financial statements for additional information on the effect of derivatives and hedging activities.) Table 22 presents the effect of derivatives and hedging activities on net interest income.

Table 22 - Effect of Derivatives and Hedging Activities on Net Interest Income
(dollars in millions)

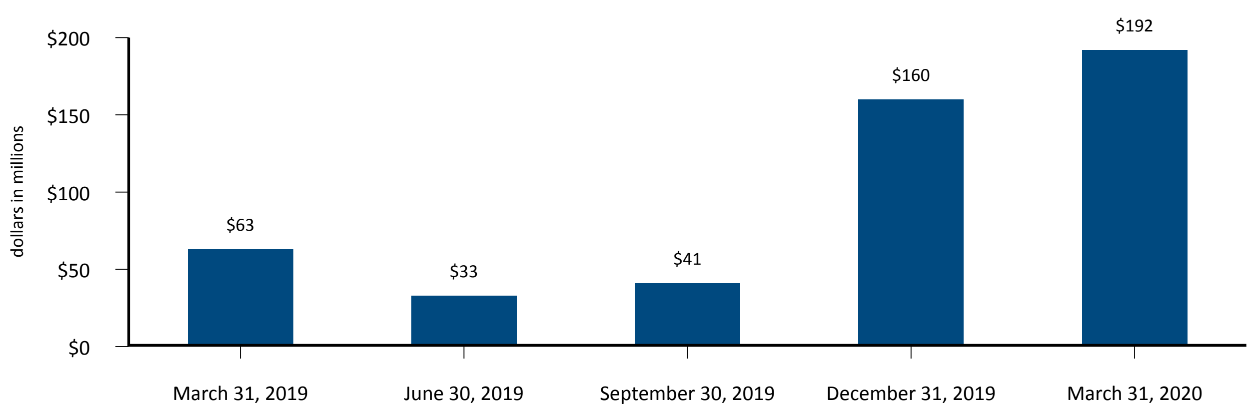
	Three Months Ended March 31, 2020					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (19)	$ (2)	$ (4)	$ (2)	$ (1)	$ (28)
Gains (losses) on designated fair value hedges	(34)	(78)	—	(8)	(16)	(136)
Net interest settlements on derivatives	(107)	(111)	—	91	11	(116)
Total effect on net interest income	$ (160)	$ (191)	$ (4)	$ 81	$ (6)	$ (280)

	Three Months Ended March 31, 2019					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (8)	$ 3	$ (2)	$ (6)	$ (3)	$ (16)
Gains (losses) on designated fair value hedges	(2)	(31)	—	(8)	—	(41)
Net interest settlements on derivatives	247	17	—	(202)	(7)	55
Total effect on net interest income	$ 237	$ (11)	$ (2)	$ (216)	$ (10)	$ (2)

Non-Interest Income

Non-interest income consists of realized and unrealized gains (losses) on investment securities, derivatives activities, financial instruments held under fair value option, and other non-interest-earning activities. Figure 22 presents non-interest income for the most recent five quarters.

Figure 22 - Non-Interest Income



Non-interest income was $192 million for the three months ended March 31, 2020, an increase of $129 million compared to the three months ended March 31, 2019, due primarily to higher net gains on U.S. Treasury obligations classified as trading securities, partially offset by higher net losses on derivatives and hedging activities.

Table 23 - Changes in Non-Interest Income
(dollars in millions)

	Three Months Ended March 31,		
	2020	2019	Change
Net gains (losses) on investment securities	$ 1,174	$ 105	$ 1,069
Net gains (losses) on financial instruments held under fair value option	56	23	33
Net gains (losses) on derivatives and hedging activities	(1,121)	(108)	(1,013)
Other, net	83	43	40
Total non-interest income (loss)	$ 192	$ 63	$ 129

Gains (Losses) on Investment Securities. The FHLBanks classify investment securities as AFS, HTM, or trading securities. The realized gains (losses) from the sale of AFS and HTM securities are recognized in current period earnings. Trading securities are recorded at fair value, with changes in fair value reflected in non-interest income. There are a number of factors that affect the fair value of trading securities, including current and projected levels of interest rates, credit spreads, and volatility, as well as the passage of time. The increase in net gains on investment securities for the three months ended March 31, 2020, compared to the three months ended March 31, 2019, resulted primarily from an increase in net gains on U.S. Treasury obligations classified as trading securities driven by a decline in interest rates. Net gains on trading securities was $1,047 million for the three months ended March 31, 2020, an increase of $942 million compared to the three months ended March 31, 2019.

Gains (Losses) on Financial Instruments Held under Fair Value Option. Certain FHLBanks elect the fair value option for certain financial assets and certain financial liabilities, and recognize the changes in fair value on these assets and liabilities as unrealized gains and losses in current period earnings. The use of the fair value option allows these FHLBanks to mitigate potential income statement volatility that can arise when an economic derivative is adjusted for changes in fair value but the related hedged item is not. (See *Table 24* for additional information regarding the gains (losses) on financial instruments held under fair value option and the effect of derivatives and hedging activities on non-interest income and *Note 11 - Fair Value* to the accompanying combined financial statements for additional information.)

Gains (Losses) on Derivatives and Hedging Activities. Fair value estimates for an FHLBank's derivatives and hedging positions fluctuate with changes in market conditions. Fair values are based on a wide range of factors, including current and projected levels of interest rates, credit spreads, and volatility, as well as the passage of time. In general, an FHLBank holds derivatives and associated hedged items to the maturity, call, or put date. Therefore, as a matter of timing, nearly all of the cumulative net gains and losses for these financial instruments generally reverse over the remaining contractual terms of the hedged items. However, there may be instances when an FHLBank terminates these instruments prior to maturity or prior to the call or put dates. Terminating the financial instrument may result in a realized gain or loss.

Significant declines in the fair values of derivatives resulted from market volatility related to the COVID-19 pandemic as spreads between investments and their associated swaps widened considerably resulting in lower fair values at the end of the quarter. Net losses on derivatives and hedging activities was $1,121 million for the three months ended March 31, 2020, resulting primarily from losses related to economic hedges of investment securities and advances, partially offset by gains related to economic hedges of consolidated obligations. Table 24 presents the effect of derivatives and hedging activities on non-interest income.

Table 24 - Effect of Derivatives and Hedging Activities on Non-Interest Income
(dollars in millions)

	Three Months Ended March 31, 2020							
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Balance Sheet	Intermediary Positions and Other	Total
Net gains (losses) on derivatives and economic hedging activities								
Gains (losses) related to derivatives not designated as hedging instruments	$ (246)	$ (1,194)	$ (15)	$ 121	$ 82	$ 92	$ 33	$ (1,127)
Price alignment amount	—	—	—	—	—	—	6	6
Total net gains (losses) on derivatives and economic hedging activities	(246)	(1,194)	(15)	121	82	92	39	(1,121)
Net gains (losses) on trading securities	—	1,018	—	—	—	—	—	1,018
Net gains (losses) on financial instruments held at fair value	151	—	2	(51)	(46)	—	—	56
Total effect on non-interest income	$ (95)	$ (176)	$ (13)	$ 70	$ 36	$ 92	$ 39	$ (47)

	Three Months Ended March 31, 2019							
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Balance Sheet	Intermediary Positions and Other	Total
Net gains (losses) on derivatives and economic hedging activities								
Gains (losses) related to derivatives not designated as hedging instruments	$ (42)	$ (99)	$ (2)	$ 57	$ (19)	$ (13)	$ 9	$ (109)
Price alignment amount	—	—	—	—	—	—	1	1
Total net gains (losses) on derivatives and economic hedging activities	(42)	(99)	(2)	57	(19)	(13)	10	(108)
Net gains (losses) on trading securities	—	103	—	—	—	—	—	103
Net gains (losses) on financial instruments held at fair value	55	—	—	(32)	—	—	—	23
Total effect on non-interest income	$ 13	$ 4	$ (2)	$ 25	$ (19)	$ (13)	$ 10	$ 18

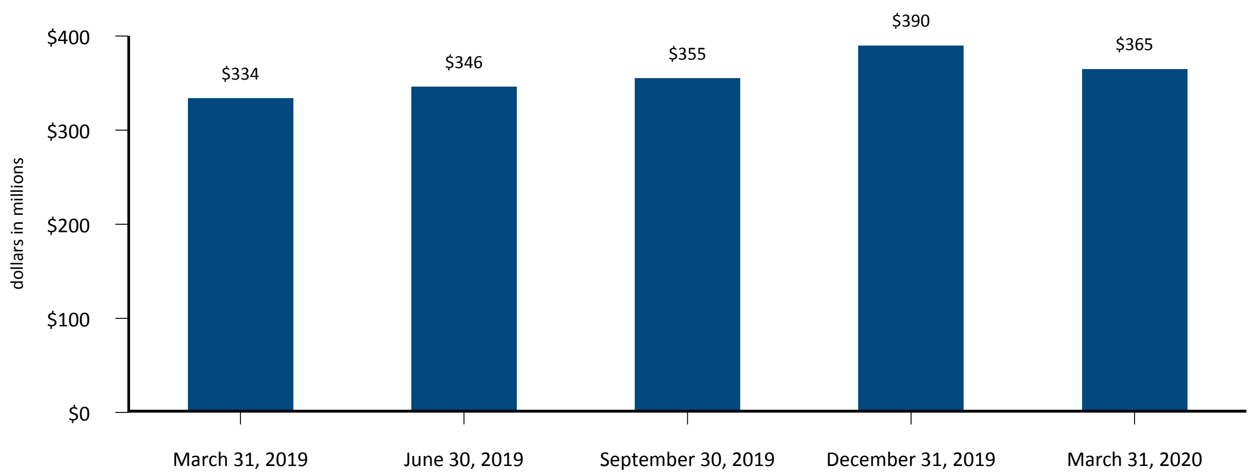
See *Note 6 - Derivatives and Hedging Activities* to the accompanying combined financial statements for additional information on the financial effect of derivatives and hedging activities**.**

Other, net. The increase in other, net for the three months ended March 31, 2020, compared to the three months ended March 31, 2019, resulted principally from gains on litigation settlements, net due to the settlement of certain claims arising from investments in private-label MBS resulting in a net gain of $56 million by the FHLBank of Des Moines.

Non-Interest Expense

Non-interest expense consists of compensation and benefits, other operating expenses, FHFA expenses, Office of Finance expenses, and other expenses. Figure 23 presents non-interest expense for the most recent five quarters.

Figure 23 - Non-Interest Expense



Non-interest expense was $365 million for the three months ended March 31, 2020, an increase of 9.3% compared to the three months ended March 31, 2019, due primarily to an increase in compensation and benefits driven by an additional retirement plan contribution of $20 million by the FHLBank of Atlanta during the first quarter of 2020.

Table 25 - Changes in Non-Interest Expense
(dollars in millions)

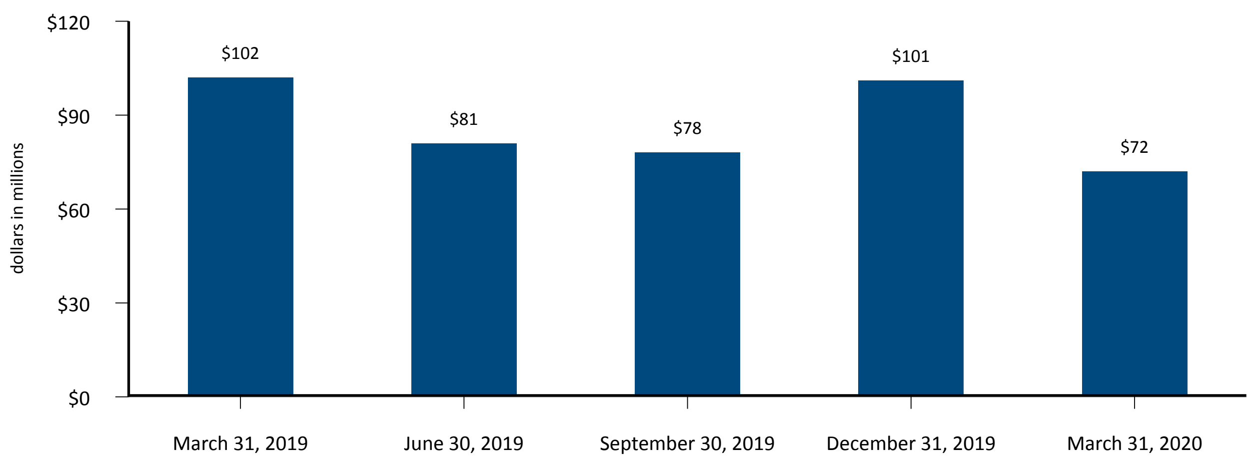
	Three Months Ended March 31,		
	2020	2019	Change
Compensation and benefits	$ 212	$ 180	$ 32
Other operating expenses	112	107	5
Federal Housing Finance Agency	19	18	1
Office of Finance	17	15	2
Other expenses	5	14	(9)
Total non-interest expense	$ 365	$ 334	$ 31

Affordable Housing Program (AHP) Assessments

By regulation, each FHLBank is required to contribute to its AHP the greater of 10% of its annual income subject to assessment, or the prorated sum required to ensure the aggregate contribution by the FHLBanks is no less than $100 million for each year. In addition to the required assessment, an FHLBank's board of directors may elect to make voluntary contributions to the AHP. For purposes of the AHP calculation, each FHLBank's income subject to assessment is defined as the individual FHLBank's net income before assessments, plus interest expense related to mandatorily redeemable capital stock.

AHP helps members provide subsidized and other low-cost funding, as well as grants, to create affordable rental and homeownership opportunities. All FHLBank operating costs for the AHP are included in operating expenses, so all AHP assessments go directly to support affordable housing projects. Figure 24 presents AHP assessments for the most recent five quarters.

Figure 24 - Affordable Housing Program Assessments



Comprehensive Income

Comprehensive income is comprised of net income and other comprehensive income. Other comprehensive income is reported on the Combined Statement of Comprehensive Income and presents the net change in the accumulated other comprehensive income (loss) balances.

Other comprehensive income was a loss of $2,186 million for the three months ended March 31, 2020, compared to other comprehensive income of $185 million for the three months ended March 31, 2019, due principally to net unrealized losses on MBS classified as AFS securities.

Table 26 - Comprehensive Income
(dollars in millions)

	Three Months Ended March 31,		
	2020	2019	Change
Net income	$ 627	$ 900	$ (273)
Other comprehensive income			
Changes in fair value of AFS securities			
Net unrealized gains (losses) on AFS securities	(1,918)	230	(2,148)
Net change in fair value of other-than-temporarily impaired AFS securities	—	5	(5)
Total changes in fair value of AFS securities	(1,918)	235	(2,153)
Changes in non-credit other-than-temporary impairment losses(1)			
Non-credit losses included in basis of HTM securities sold	20	—	20
Accretion of non-credit portion on HTM securities	9	14	(5)
Total changes in non-credit OTTI losses	29	14	15
Net unrealized gains (losses) relating to hedging activities	(291)	(70)	(221)
Other	(6)	6	(12)
Total other comprehensive income (loss)	(2,186)	185	(2,371)
Comprehensive income (loss)	$ (1,559)	$ 1,085	$ (2,644)

(1) With the adoption of changes to accounting standards on measurement of credit losses for financial instruments on January 1, 2020, the other-than-temporary impairment (OTTI) assessment was replaced with an allowance for credit losses (See *Note 1 - Summary of Significant Accounting Policies* and *Note 2 - Recently Issued and Adopted Accounting Guidance* for further information).

Changes in Fair Value of AFS securities. Changes in the fair value of AFS securities are recorded in other comprehensive income. The net change in unrealized gains (losses) on AFS securities is due primarily to changes in interest rates, credit spreads, the passage of time, and volatility.

Prior to January 1, 2020, the net change in the fair value of OTTI AFS securities was driven by housing prices and the economic outlook, as well as changes in interest rates, credit spreads, the passage of time, and volatility. (See *Note 1 - Summary of Significant Accounting Policies* on pages F-12 to F-22 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for information on the prior accounting treatment.)

Changes in Non-Credit OTTI Losses. Changes in non-credit OTTI losses are comprised of the net amount of AFS and HTM impairment losses reclassified to (from) non-interest income and the accretion of the non-credit portion on HTM securities.

Net Amount of AFS and HTM Impairment Losses Reclassified to (from) Non-interest Income. Prior to January 1, 2020, for AFS and HTM securities with OTTI, the net decrease or increase in the non-credit component was reclassified between AOCI and earnings.

Accretion of the Non-credit Portion on HTM Securities. For HTM securities with non-credit-related impairment losses recognized in AOCI prior to January 1, 2020, the non-credit-related impairment is accreted as an increase in the carrying value over the remaining life of the security, based on the amount and timing of future estimated cash flows.

Net Unrealized Gains (Losses) Relating to Hedging Activities. Net unrealized gains (losses) relating to hedging activities is comprised of changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge, to the extent that the hedge is highly effective, until earnings are affected by the variability of the cash flows of the hedged transaction and the amounts are reclassified to interest income or interest expense. The FHLBanks' gains (losses) on hedging activities fluctuate with volatility in the overall interest-rate environment and with the positions taken by the FHLBanks to hedge their risk exposure using cash flow hedges.

Liquidity and Capital Resources

Liquidity

Each FHLBank is required to maintain liquidity in accordance with the FHLBank Act, FHFA regulations and guidance, and policies established by its management and board of directors. Each FHLBank seeks to be in a position to meet the credit and liquidity needs of its members and to meet all current and future financial commitments of the FHLBank. Each FHLBank seeks to achieve this objective by managing liquidity positions to maintain stable, reliable, and cost-effective sources of funds while taking into account market conditions, member demand, and the maturity profile of the assets and liabilities of the FHLBank.

The FHLBanks may not be able to predict future trends in member credit needs because member credit needs are driven by complex interactions among a number of factors, including members' mortgage loan originations, other loan portfolio growth, deposit growth, and the attractiveness of advances compared to other wholesale borrowing alternatives. Each FHLBank monitors current trends and anticipates future debt issuance needs to fund its members' credit needs and investment opportunities of the FHLBank. An FHLBank's ability to expand its balance sheet and corresponding liquidity requirements in response to its members' increased credit needs is correlated to its members' requirements for advances and mortgage loans. Alternatively, in response to reduced member credit needs, an FHLBank may allow its consolidated obligations to mature without replacement, or repurchase and retire outstanding consolidated obligations, allowing its balance sheet to shrink. Over time, the FHLBanks historically have had comparatively stable access to funding through a diverse investor base.

Sources of Liquidity. The FHLBanks' primary sources of liquidity are proceeds from the issuance of consolidated obligations, as well as cash and investment holdings that are primarily high-quality, short-, and intermediate-term financial instruments. The FHLBanks' consolidated obligations are not obligations of the United States and are not guaranteed by the United States, but have historically received the same credit rating as the government bond credit rating of the United States. S&P, Moody's, or other rating organizations could downgrade or upgrade the credit ratings of the U.S. government and GSEs, including the FHLBanks and their consolidated obligations. Investors should note that a rating issued by a nationally recognized statistical rating organization is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn at any time. Investors should evaluate the rating of each nationally recognized statistical rating organization independently. As of April 30, 2020, the FHLBanks' consolidated obligations were rated AA+/A-1+ and Aaa/P-1 (with outlook stable) by S&P and Moody's. Investors should not take the historical or current ratings of the FHLBanks and their consolidated obligations as an indication of future ratings for FHLBanks and their consolidated obligations.

Other sources of liquidity include advance repayments, payments collected on mortgage loans, proceeds from the issuance of capital stock, and deposits from members. In addition, by law, the Secretary of the Treasury is authorized to purchase up to $4 billion aggregate principal amount of consolidated obligations of the FHLBanks. This authority may be exercised only if alternative means cannot be effectively employed to permit the FHLBanks to continue to supply reasonable amounts of funds to the mortgage market, and the ability to supply such funds is substantially impaired because of monetary stringency and a high level of interest rates. Any funds borrowed from the U.S. Treasury shall be repaid by the FHLBanks at the earliest practicable date.

Uses of Liquidity. The FHLBanks' primary uses of liquidity are advance originations and consolidated obligation payments. Other uses of liquidity are mortgage loan and investment purchases, dividend payments, and other contractual payments. An FHLBank also maintains liquidity to redeem or repurchase excess capital stock, at its discretion, upon the request of a member or under an FHLBank's capital plan.

See *Combined Financial Condition - Advances* for advance originations and repayments and *Combined Financial Condition - Consolidated Obligations* for net proceeds and payments for consolidated obligations.

FHLBank Funding and Debt Issuance. Changes or disruptions in the capital markets could limit the FHLBanks' ability to issue consolidated obligations. During the three months ended March 31, 2020, the FHLBanks maintained continual access to funding. The FHLBanks' short-term funding was generally driven by member demand and was achieved through the issuance of consolidated discount notes and short-term variable-rate consolidated bonds during the three months ended March 31, 2020. Due to the market volatility brought about by the COVID-19 pandemic and the resulting decline in interest rates, investors preferred short-term obligations, principally consolidated discount notes. Despite the market volatility and the fluctuation in investor sentiment during this period, the FHLBanks continued to manage their debt issuance to meet the needs of their members.

Refinancing Risk and Investor Concentration Risk. There are inherent risks in utilizing short-term funding to support longer-dated assets and the FHLBanks may be exposed to refinancing risk and investor concentration risk. Refinancing risk includes the risk that the FHLBanks could have difficulty rolling over short-term obligations when market conditions change or investor confidence in short-term consolidated obligations declines. In managing and monitoring the amounts of financial assets that require refinancing, the FHLBanks consider their contractual maturities, as well as certain assumptions regarding expected cash flows (i.e., estimated prepayments, embedded call optionality, and scheduled amortizations). Investor concentration risk includes the risk that a market-driven or regulatory disruption to certain investor classes could lead to significant investor outflows causing unfavorable market conditions for consolidated obligations. (See the notes to the accompanying combined financial statements for additional information regarding contractual maturities of certain financial assets and financial liabilities and *Risk Factors - Liquidity Risk* on pages 28 to 29 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for more information on refinancing risk and investor concentration risk.)

Interest-Rate Risk. The FHLBanks may use a portion of the short-term consolidated obligations issued to fund both short- and long-term variable-rate assets. However, funding longer-term variable-rate assets with shorter-term liabilities generally does not expose the FHLBanks to interest-rate risk because the rates on the variable-rate assets reset similarly to the liabilities (either through rate resets or re-issuance of the obligations). The FHLBanks measure and monitor interest-rate risk with commonly used methods and metrics, which include the calculations of market value of equity, duration of equity, and duration gap. (See *Quantitative and Qualitative Disclosures about Market Risk* for additional discussion and analysis regarding the FHLBanks' sensitivity to interest rate changes and the use of derivatives to manage their exposure to interest-rate risk.)

Asset/Liability Maturity Profile. Each FHLBank is focused on maintaining an adequate amount of liquidity, and the FHLBanks work collectively to manage system-wide liquidity and funding needs. The FHLBanks are committed to prudent risk management practices and jointly monitor the FHLBank system risks, including by tracking the funding gap, which is a measure of the difference in the projected cash flows from their financial assets and financial liabilities. External factors, including FHLBank member borrowing needs, supply and demand in the debt markets, and other factors may affect the amount of liquidity and the balance between the cash flows for financial assets and financial liabilities. However, due to the FHLBanks' status as GSEs, they have traditionally had ready access to funding at relatively favorable rates. During the three months ended March 31, 2020, in accordance with the FHFA's Advisory Bulletin on liquidity (Liquidity Guidance AB), each of the FHLBanks was in compliance with the FHFA's funding gap guidance for three-month and one-year maturity horizons.

Regulatory Liquidity Requirements. To protect the FHLBanks against temporary disruptions in access to the debt markets in response to a rise in capital markets volatility, the FHFA requires each FHLBank to:

- have available at all times an amount greater than or equal to its members' current deposits invested in advances with maturities not to exceed five years, deposits in banks or trust companies, and obligations of the U.S. Treasury;
- maintain, in the aggregate, unpledged qualifying assets in an amount at least equal to the amount of its participation in total consolidated obligations outstanding; and
- maintain a base case amount of liquidity measured using a two-component formula:
    - The cash flow component requires each FHLBank to maintain a liquidity reserve equal to a specified number of days (between 10 and 30 calendar days) of the FHLBank's projected funding needs assuming an inability to access capital markets for consolidated obligations and renewal of all maturing advances.
    - The standby letters of credit component requires each FHLBank to hold additional liquid assets equal to a specified percentage (between 1% and 20%) of the FHLBank's outstanding standby letter of credit commitments.

Each FHLBank also maintains a contingency liquidity plan designed to enable it to meet its obligations and the liquidity needs of members in the event of operational disruptions at the FHLBanks and/or the Office of Finance, or short-term capital market disruptions.

During the three months ended March 31, 2020, each of the FHLBanks was in compliance with the FHFA's liquidity requirements.

Capital Resources

The FHLBanks' ability to expand their balance sheets as member credit needs increase is based, in part, on the capital stock requirements for advances. In addition, FHFA regulations stipulate that each FHLBank must comply with three limits on capital. Although each FHLBank's minimum total regulatory capital-to-assets ratio requirement is 4.0%, each FHLBank strives to maintain a level of retained earnings to support its regulatory capital compliance, stable dividend payments to members, and business growth. At March 31, 2020, each FHLBank was in compliance with its statutory minimum capital requirements. In 2019, FHFA issued an advisory bulletin that provides that each FHLBank maintain a ratio of at least two percent of capital stock to total assets beginning in February 2020. At March 31, 2020, each FHLBank was in compliance with the requirements of the capital stock advisory bulletin. (See *Note 9 - Capital* to the accompanying combined financial statements for additional information regarding minimum regulatory capital requirements.)

Regulatory guidance provides that each FHLBank assess, at least once a year, the adequacy of its retained earnings under various future financial and economic scenarios, including:

- parallel and non-parallel interest-rate shifts;
- changes in the interest-rate relationship between different yield curves; and
- changes in the credit quality of the FHLBank's assets.

Management and the board of directors of each FHLBank review the capital structure of that FHLBank on a periodic basis to ensure the capital structure supports the risk associated with its assets and addresses applicable regulatory and supervisory matters. In addition, an individual FHLBank may, at its discretion, institute a higher capital requirement to meet internally-established thresholds or to address supervisory matters, limit dividend payments, or restrict excess capital stock repurchases as part of its retained earnings policies.

Joint Capital Enhancement Agreement. The Joint Capital Enhancement Agreement, as amended (Capital Agreement), is intended to enhance the capital position of each FHLBank. The Capital Agreement provides that each FHLBank will allocate 20% of its net income each quarter to a separate restricted retained earnings account until the balance of that account equals at least one percent of that FHLBank's average balance of outstanding consolidated obligations for the previous quarter. These restricted retained earnings are not available to pay dividends.

Critical Accounting Estimates

The preparation of financial statements in accordance with GAAP requires each FHLBank's management to make a number of judgments, estimates, and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities (if applicable), and the reported amounts of income and expense during the reported periods. Although each FHLBank's management believes that its judgments, estimates, and assumptions are reasonable, actual results may differ from these estimates.

In the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, certain accounting estimates and assumptions were identified as critical because they are generally considered by each FHLBank's management to be the most critical to an understanding of its financial statements and the financial data it provides to the Office of Finance for preparing the combined financial report. These estimates and assumptions consist of those used in conjunction with fair value estimates and derivatives and hedging activities. For a description of accounting policies related to these estimates and assumptions, see *Note 1 - Summary of Significant Accounting Policies* on pages F-12 to F-22 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019.

There have been no significant changes to the critical accounting estimates disclosed in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019. For a detailed discussion of Critical Accounting Estimates, see *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Critical Accounting Estimates* on pages 82 to 85 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019. Each FHLBank describes its critical accounting estimates in its periodic reports filed with the SEC.

Recent Accounting Developments

See *Note 2 - Recently Issued and Adopted Accounting Guidance* to the accompanying combined financial statements for a discussion regarding the effect of recently issued and adopted accounting guidance on the FHLBanks' combined financial condition, combined results of operations, or combined cash flows.

Legislative and Regulatory Developments

Certain regulatory actions and developments are summarized in this section. (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Legislative and Regulatory Developments* in the Federal Home Loan Banks Combined Financial Reports for the year ended December 31, 2019 (pages 86 to 89), for a description of certain legislative and regulatory developments that occurred prior to the publication of that report.)

Margin and Capital Requirements for Covered Swap Entities. On April 9, 2020, the U.S. Commodity Futures Trading Commission issued a final rule, effective May 11, 2020, to amend its rules requiring minimum margin and capital requirements for uncleared swaps for covered swap entities for which there is no prudential regulator by extending the phase-in compliance date for initial margin requirements from September 1, 2020 to September 1, 2021 for counterparties with an average daily aggregate notional amount of non-cleared swaps between $8 billion and $50 billion. The FHLBanks do not expect this final rule to materially affect the FHLBanks' combined financial condition or combined results of operations.

Certain Developments Related to the COVID-19 Pandemic

FHFA Supervisory Letter - Paycheck Protection Program Loans as Collateral for FHLBank Advances. On April 23, 2020, the FHFA issued a supervisory letter (PPP Supervisory Letter) permitting the FHLBanks to accept Paycheck Protection Program (PPP) loans as collateral for advances as "Agency Securities", given the Small Business Administration's (SBA) 100% guarantee of the unpaid principal balance. On April 20, 2020, the SBA published its third interim final rule related to PPP loans, which explicitly waived certain regulatory requirements that must be satisfied before a member could pledge PPP loans to the FHLBanks as collateral. The PPP Supervisory Letter establishes a series of conditions under which the FHLBanks may accept PPP loans as collateral, which conditions focus on the financial condition of members, collateral discounts, and pledge dollar limits.

The FHLBanks do not expect the PPP Supervisory Letter to materially affect the FHLBanks' combined financial condition or combined results of operations.

Coronavirus Aid, Relief, and Economic Security Act. The Coronavirus Aid, Relief, and Economic Security (CARES) Act was passed by the U.S. Senate on March 25, 2020 and by the U.S. House of Representatives on March 27, 2020, and the President of the United States signed it into law the same day. The $2.2 trillion package is the largest stimulus bill in U.S. history. The CARES Act is in addition to previous relief legislation passed by Congress in March 2020. The legislation provides, among other things, the following:

- assistance to businesses, states, and municipalities;
- a loan program for small businesses, non-profits, and physician practices that can be forgiven through employee retention incentives;
- the Treasury Secretary's authority to make loans or loan guarantees to states, municipalities, and eligible businesses, and relaxation of some regulations imposed through the Dodd-Frank Act;
- direct payments to eligible taxpayers and their families;
- expanded eligibility for unemployment insurance and payment amounts; and
- mortgage forbearance provisions and a foreclosure moratorium.

Funding for the PPP, which was created by the CARES Act, was increased on April 24, 2020, with the enactment of the Paycheck Protection Program and Healthcare Enhancement Act. Additional phases of the CARES Act or other COVID-19 relief legislation may be enacted by Congress. The FHLBanks are evaluating the potential effect of the CARES Act on their businesses, including its impact on the U.S. economy; the impact on mortgages held or serviced by the FHLBanks' members and accepted by the FHLBanks as collateral; and the impact on certain FHLBanks' mortgage loan portfolios.

Additional COVID-19 Legislative and Regulatory Developments. In light of the COVID-19 pandemic, governmental agencies, including the SEC, the Office of the Comptroller of the Currency, the Federal Reserve Board, the FDIC, the National Credit Union Administration, the U.S. Commodity Futures Trading Commission, and the FHFA, as well as state governments and agencies, have taken actions to provide various forms of relief and guidance regarding the financial, operational, credit, market, and other effects of the pandemic, some of which may have a direct or indirect impact on the FHLBanks and/or their members. Many of these actions are temporary in nature. The FHLBanks are monitoring these actions and guidance and evaluating their potential impact on the FHLBanks.

External Credit Ratings

Since March 31, 2020, no changes to external credit ratings have occurred with regard to the FHLBanks or their consolidated obligations. At April 30, 2020, consolidated obligations were rated AA+/A-1+ by S&P and Aaa/P-1 by Moody's, with outlook stable. S&P, Moody's, or other rating organizations could downgrade or upgrade the credit ratings of the U.S. government and GSEs, including the FHLBanks and their consolidated obligations. Investors should note that a rating issued by a nationally recognized statistical rating organization is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn at any time. Investors should evaluate the rating of each nationally recognized statistical rating organization independently. Investors should not take the historical or current ratings of the FHLBanks and their consolidated obligations as an indication of future ratings for FHLBanks and their consolidated obligations. Table 27 presents each FHLBank's long-term credit rating, short-term credit rating, and outlook at April 30, 2020.

Table 27 - FHLBanks' Long-Term Credit Ratings, Short-Term Credit Ratings, and Outlook at April 30, 2020

	S&P		Moody's	
FHLBank	Long-Term/ Short-Term Rating	Outlook	Long-Term/ Short-Term Rating	Outlook
Boston	AA+/A-1+	Stable	Aaa/P-1	Stable
New York	AA+/A-1+	Stable	Aaa/P-1	Stable
Pittsburgh	AA+/A-1+	Stable	Aaa/P-1	Stable
Atlanta	AA+/A-1+	Stable	Aaa/P-1	Stable
Cincinnati	AA+/A-1+	Stable	Aaa/P-1	Stable
Indianapolis	AA+/A-1+	Stable	Aaa/P-1	Stable
Chicago	AA+/A-1+	Stable	Aaa/P-1	Stable
Des Moines	AA+/A-1+	Stable	Aaa/P-1	Stable
Dallas	AA+/A-1+	Stable	Aaa/P-1	Stable
Topeka	AA+/A-1+	Stable	Aaa/P-1	Stable
San Francisco	AA+/A-1+	Stable	Aaa/P-1	Stable

Risk Management

The fundamental business of each FHLBank is to provide a readily available, competitively-priced source of funds, in a wide range of maturities, to meet the borrowing demands of its members and housing associates. The principal sources of funds for these activities are the proceeds from the issuance of consolidated obligations and, to a lesser extent, capital and deposits from members. Lending and investing funds, and engaging in derivative transactions, can potentially expose the FHLBanks to a number of risks, including market risk and credit risk. (See *Quantitative and Qualitative Disclosures about Market Risk* for a discussion of market risk.) The FHLBanks are also subject to liquidity, operational, and business risks. (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Risk Management*, on pages 109 to 110, and *Risk Factors*, on pages 22 to 30, of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019 and *Risk Factors* in this Combined Financial Report, for more information.)

Credit Risk

Advances. Each FHLBank manages its credit exposure to advances through an integrated approach that provides for the ongoing review of the financial condition of its borrowers coupled with collateral and lending policies and procedures designed to limit its risk of loss while balancing its borrowers' needs for a reliable source of funding. Each FHLBank uses a methodology to evaluate its borrowers, based on financial, regulatory, and other qualitative information, including examination reports. Each FHLBank reviews its borrowers' financial condition on an ongoing basis using current information and makes changes to its collateral guidelines to mitigate the credit risk on advances. As of March 31, 2020, the management of each FHLBank believed it had adequate policies and procedures in place to manage its credit risk on advances effectively.

The FHLBanks protect against credit risk on advances by collateralizing all advances. Advances and other credit product obligations to an FHLBank are fully secured with eligible collateral, the value of which is discounted to protect the FHLBanks from credit loss. Collateral that is determined to contain a low level of risk, such as U.S government obligations, is discounted at a lower rate than collateral that carries a higher level of risk, such as commercial real estate mortgage loans. Eligible collateral values are determined by the market value for securities collateral, and the market value or unpaid principal balance for all loan collateral. For collateral which market prices are not readily available, the FHLBanks may use internal or external valuation models or methodologies to determine the fair value of the collateral. These valuation models incorporate assumptions related to factors that may affect collateral values, such as market liquidity, discounts rates, potential prepayments, and liquidation and servicing costs in the event of default, among others, which may be adjusted in response to changes in economic and market conditions in order to produce reliable results. The FHLBanks also have policies and procedures for validating the reasonableness of their collateral valuations. In addition, collateral verifications and on-site reviews are performed by the FHLBanks based on the risk profile of the borrower. At March 31, 2020, each FHLBank had rights to collateral with an estimated value greater than the related outstanding advances. (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Risk Management - Credit Risk - Advances*, on pages 90 to 95 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for information on eligible collateral and effective lending values.)

Residential mortgage loans are the principal form of collateral for advances. Collateral eligible to secure new or renewed advances includes:

- one-to-four family and multifamily mortgage loans (delinquent for no more than 90 days) and securities representing such mortgages;
- loans and securities issued, insured, or guaranteed by the U.S. government or any U.S. government agency (for example, mortgage-backed securities issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae);
- cash or deposits in the FHLBank;
- certain other real estate-related collateral, such as commercial real estate loans, provided that the collateral has a readily ascertainable value and that the FHLBank can perfect a security interest in it; and
- certain qualifying securities representing undivided equity interests in eligible advance collateral.

As of March 31, 2020, there were 125 individual FHLBank borrowers (123 FHLBank members and 2 non-members) that each held advances of at least $1.0 billion. When a non-member financial institution acquires some or all of the assets and liabilities of an FHLBank member, including outstanding advances and FHLBank capital stock, an FHLBank may allow those advances to remain outstanding to that non-member financial institution. The non-member borrower would be required to meet all of that FHLBank's credit and collateral requirements, including requirements regarding creditworthiness and collateral borrowing capacity.

A borrower's total credit obligation to an FHLBank could include outstanding advances, notional amount of letters of credit, collateralized derivative contracts, and credit enhanced obligations on mortgage loans sold to the FHLBank. Eligible collateral values include market values for securities and the unpaid principal balance for all other collateral pledged by the blanket lien, listing, or delivery method. The collateralization ratio was 2.5 at March 31, 2020, which represents the total of these 125 individual FHLBank borrowers' eligible collateral divided by these borrowers' advances and other credit products outstanding. The collateralization ratio for all borrowers was 3.0 at March 31, 2020. However, individual borrower credit obligations to the FHLBanks are not cross-collateralized between borrowers. To support small and community banks during the COVID-19 pandemic, in April 2020, the FHFA permitted the FHLBanks to accept PPP loans as collateral for advances, subject to certain conditions. (See *Legislative and Regulatory Developments* for additional information on these recent changes.)

Table 28 presents advances, other credit products (which primarily includes notional amount of letters of credit), and collateral outstanding for borrowers with at least $1.0 billion of advances outstanding as compared to all borrowers.

Table 28 - Advances, Other Credit Products, and Collateral Outstanding at March 31, 2020
(dollars in millions)

	Borrowers with at Least $1.0 Billion of Advances Outstanding	All Borrowers	Percentage
Advances outstanding, principal amount	$ 594,799	$ 797,166	74.6%
Other credit products	$ 92,191	$ 174,297	52.9%
Collateral outstanding	$ 1,727,915	$ 2,878,760	60.0%

Based on the financial condition of the borrower, each FHLBank classifies each borrower by the method of pledging collateral into one of three collateral categories: (1) blanket lien status; (2) listing (specific identification) status; or (3) delivery (possession) status. The blanket lien status is the least restrictive collateral status, and is generally assigned to lower risk institutions pledging collateral. Under the blanket lien status, an individual FHLBank allows a borrower to retain possession of eligible collateral pledged to that FHLBank, provided the borrower executes a written security agreement and agrees to hold the collateral for the benefit of that FHLBank. Origination of new advances or renewal of advances must only be supported by certain eligible collateral categories. A blanket lien is typically accepted by the FHLBanks only for loan collateral; most securities collateral must be delivered to an FHLBank, or an FHLBank-approved third-party custodian, and pledged for the benefit of that FHLBank.

An FHLBank may require borrowers to provide a detailed listing of eligible advance collateral being pledged to the FHLBank due to their high usage of FHLBank credit products, the type of assets being pledged, or the credit condition of the borrower. Under the listing status, the borrower retains physical possession of specific collateral pledged to an FHLBank, but the borrower provides listings of loans pledged to its FHLBank with detailed loan information, such as loan amount, payments, maturity date, interest rate, loan-to-value, collateral type, and FICO® scores. From a borrower's perspective, the benefit of listing collateral relative to a blanket lien security agreement is that, in some cases, the discount or haircut applicable to that collateral may be lower than that for blanket lien collateral. From an FHLBank's perspective, the benefit of listing collateral is that it provides more detailed loan information to arrive at a more precise valuation.

Under the delivery status, an FHLBank requires the borrower to place physical possession of eligible collateral with the FHLBank or a third-party custodian to sufficiently secure all outstanding obligations. Typically, an FHLBank would take physical possession or control of collateral if the financial condition of the borrower was deteriorating or if the borrower exceeded certain credit product usage triggers. However, an FHLBank may require insurance company borrowers, and certain other borrowers, to place physical possession of all pledged eligible collateral with the FHLBank or deposit it with a custodian or control agent in order to establish control over the pledged collateral. Delivery of collateral may also be required if there is a regulatory action against the borrower by its regulator that would indicate inadequate controls or other conditions that would be of concern to that FHLBank.

Table 29 presents information on a combined basis regarding the type of collateral securing advances and other credit products outstanding.

Table 29 - Type of Collateral Securing Advances and Other Credit Products Outstanding at March 31, 2020
(dollars in millions)

	Blanket Lien		Listing		Delivery		Total	
Collateral Type	**Amount**	**Percentage**	**Amount**	**Percentage**	**Amount**	**Percentage**	**Amount**	**Percentage**
Single-family mortgage loans(1)	$ 525,604	18.3%	$ 872,216	30.3%	$ 5,859	0.2%	$ 1,403,679	48.8%
Commercial real estate loans	398,147	13.8%	149,757	5.2%	36,616	1.3%	584,520	20.3%
Multifamily mortgage loans	83,582	2.9%	171,302	6.0%	15,500	0.5%	270,384	9.4%
Other real estate loans	58,247	2.0%	107,147	3.7%	4,378	0.2%	169,772	5.9%
Home equity loans and lines of credit	80,424	2.8%	82,277	2.8%	9	—	162,710	5.6%
U.S. agency MBS and CMOs	n/a	n/a	n/a	n/a	158,166	5.4%	158,166	5.4%
CFI loans	36,247	1.3%	1,614	0.1%	16	—	37,877	1.4%
Commercial MBS	n/a	n/a	n/a	n/a	26,568	0.9%	26,568	0.9%
U.S. obligations	n/a	n/a	n/a	n/a	20,166	0.7%	20,166	0.7%
U.S. agency securities (excluding MBS)	n/a	n/a	n/a	n/a	19,211	0.7%	19,211	0.7%
Private-label MBS and CMOs	n/a	n/a	n/a	n/a	7,448	0.3%	7,448	0.3%
Other	534	—	2	—	17,723	0.6%	18,259	0.6%
Total collateral	$ 1,182,785	41.1%	$ 1,384,315	48.1%	$ 311,660	10.8%	$ 2,878,760	100.0%

(1) Includes Federal Housing Administration and Department of Veterans Affairs loans.
n/a Collateral is not pledged using this pledging method.

Figures 25 and 26 present the percentage of collateral securing advances and other credit products by type and the percentage of collateral securing advances and other credit products by pledging method at March 31, 2020.

Figure 25 - Percentage of Collateral Securing Advances and Other Credit Products by Type

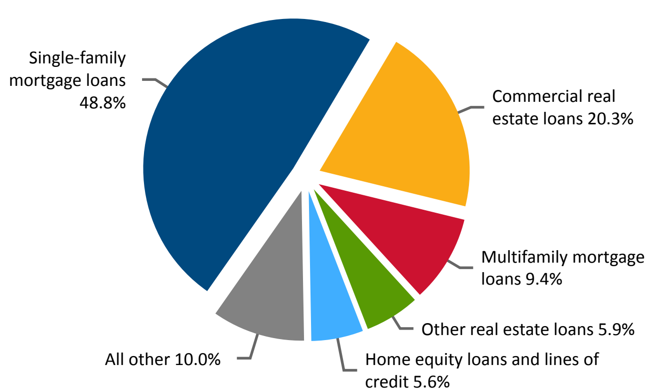
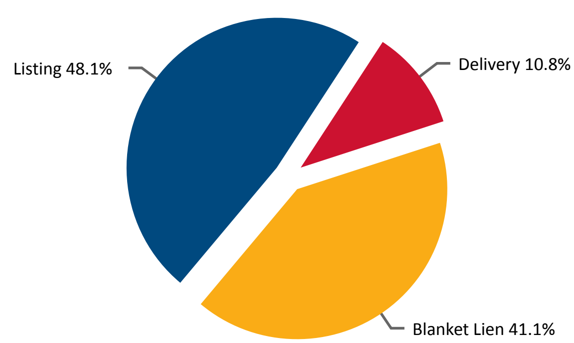


Figure 26 - Percentage of Collateral Securing Advances and Other Credit Products by Pledging Method



Investments. The FHLBanks are subject to credit risk on investments consisting of investment securities, interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold. These investments are generally transacted with government agencies and large financial institutions that are considered by an individual FHLBank to be of investment quality. FHFA regulation defines investment quality as a determination by an FHLBank, with respect to a security, that there is adequate financial backing so that full and timely payment of principal and interest on such a security is expected, and the FHLBank determines that there is minimal risk that the timely payment of principal and interest would not occur because of adverse changes in economic and financial conditions during the projected life of the security.

The FHLBanks maintain short-term investment portfolios, the proceeds of which may provide funds to meet the credit needs of their members and to maintain liquidity. Within this portfolio of short-term investments, the FHLBanks have unsecured credit exposure on certain investments.

The FHLBanks maintain long-term investment portfolios as an additional source of liquidity and to earn interest income. These investments generally provide the FHLBanks with higher returns than those available on short-term investments. Within this portfolio of long-term investments, the FHLBanks are primarily subject to credit risk related to private-label mortgage-backed securities that are either directly or indirectly supported by underlying mortgage loans. Each private-label mortgage-backed security may contain one or more forms of credit protection/enhancements, including, but not limited to, (1) guarantee of principal and interest, (2) subordination, (3) over-collateralization and excess interest, and (4) third-party insurance. Credit enhancement achieved through subordination features results in the subordination of payments to junior classes to support cash flows received by senior classes held by investors such as the FHLBanks.

Regulatory Restrictions on Investments. To minimize credit risk on investments, the FHLBanks are prohibited by FHFA regulations from investing in certain security types. (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Risk Management - Credit Risk - Investments* on pages 95 to 96 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for additional information regarding the regulatory restrictions on investments.)

Investment Quality and Ratings. The FHLBanks seek to reduce the credit risk by investing in investment-quality securities. The FHLBanks consider a variety of credit quality factors when analyzing potential investments, including collateral performance, marketability, asset class or sector considerations, local and regional economic conditions, credit ratings based on the nationally recognized statistical rating organization(s), and/or the financial health of the underlying issuer. Although the FHLBanks invested in private-label mortgage-backed securities that at the date of purchase were substantially all rated triple-A, many of these securities have incurred credit losses based on economic conditions and housing market trends since the FHLBanks originally purchased them. Figures 27 and 28 present the composition of total investments by credit rating at March 31, 2020 and December 31, 2019.

Figure 27 - Total Investments by Credit Rating at March 31, 2020 (dollars in billions)

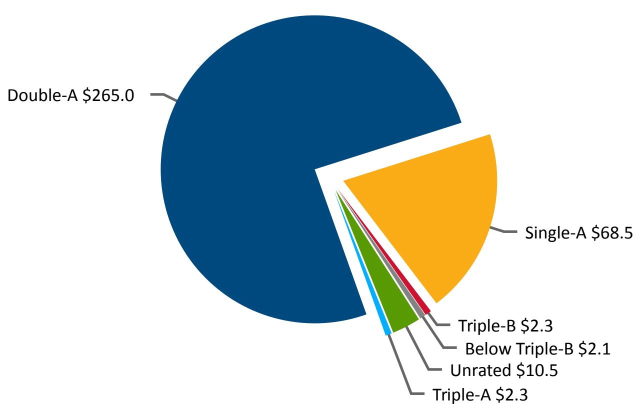


Figure 28 - Total Investments by Credit Rating at December 31, 2019 (dollars in billions)

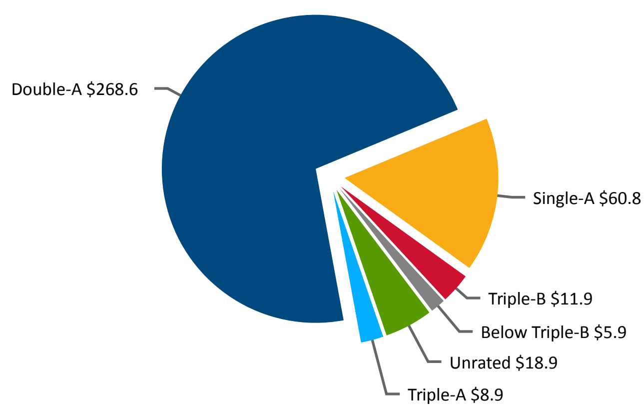


Table 30 presents the credit ratings of the investment securities held by the FHLBanks as of March 31, 2020 and December 31, 2019, using the lowest long-term credit rating for each security owned by an individual FHLBank based on the nationally recognized statistical rating organization(s) used by that FHLBank. The internal ratings of an individual FHLBank may differ from those obtained from the nationally recognized statistical rating organization(s) and other FHLBank internal ratings. Investors should not take the historical or current ratings displayed in this table as an indication of future ratings.

Table 30 - Investment Ratings
(dollars in millions)

	March 31, 2020(1)(2)						
Carrying Value, Net	**Triple-A**	**Double-A**	**Single-A**	**Triple-B**	**Below Triple-B**	**Unrated**	**Total**
Interest-bearing deposits	$ —	$ 1,768	$ 13,914	$ 48	$ —	$ —	$ 15,730
Securities purchased under agreements to resell	10	7,034	3,500	500	—	9,250	20,294
Federal funds sold	—	21,863	50,863	1,489	—	141	74,356
Total investment securities by major security type							
Non-mortgage backed securities							
Certificates of deposit	—	275	—	—	—	—	275
U.S. Treasury obligations	—	64,953	—	—	—	—	64,953
Other U.S. obligations	—	4,363	—	—	—	—	4,363
GSE and Tennessee Valley Authority obligations	—	20,032	—	—	—	—	20,032
State or local housing agency obligations	1,030	1,703	10	41	—	8	2,792
Federal Family Education Loan Program ABS	23	3,058	—	—	—	—	3,081
Other	940	101	—	—	—	8	1,049
Total non-mortgage-backed securities	1,993	94,485	10	41	—	16	96,545
Mortgage-backed securities							
U.S. obligations single-family MBS	59	10,429	—	—	—	—	10,488
U.S. obligations multifamily MBS	—	250	—	—	—	—	250
GSE single-family MBS	—	32,896	5	—	3	—	32,904
GSE multifamily MBS	275	96,175	—	—	—	—	96,450
Private-label MBS	—	127	191	168	2,137	1,045	3,668
Total mortgage-backed securities	334	139,877	196	168	2,140	1,045	143,760
Total investment securities	2,327	234,362	206	209	2,140	1,061	240,305
Total investments	$ 2,337	$ 265,027	$ 68,483	$ 2,246	$ 2,140	$ 10,452	$ 350,685

Carrying Value	December 31, 2019(2)(3) Triple-A	Double-A	Single-A	Triple-B	Below Triple-B	Unrated	Total
Interest-bearing deposits	$ —	$ 934	$ 12,846	$ 649	$ —	$ —	$ 14,429
Securities purchased under agreements to resell	6,500	20,349	13,550	9,600	2,985	17,110	70,094
Federal funds sold	—	16,604	33,242	1,370	—	141	51,357
Total investment securities by major security type							
Non-mortgage backed securities							
Certificates of deposit	—	500	910	—	—	—	1,410
U.S. Treasury obligations	—	60,063	—	—	—	—	60,063
Other U.S. obligations	—	4,559	—	—	—	—	4,559
GSE and Tennessee Valley Authority obligations	—	20,295	—	—	—	—	20,295
State or local housing agency obligations	1,027	1,719	17	42	—	—	2,805
Federal Family Education Loan Program ABS	26	3,326	—	—	—	—	3,352
Other	907	99	—	—	—	9	1,015
Total non-mortgage-backed securities	1,960	90,561	927	42	—	9	93,499
Mortgage-backed securities							
U.S. obligations single-family MBS	106	11,020	—	—	—	—	11,126
U.S. obligations multifamily MBS	—	284	—	—	—	—	284
GSE single-family MBS	—	34,315	5	—	3	—	34,323
GSE multifamily MBS	316	94,428	—	—	—	—	94,744
Private-label MBS	—	177	251	244	2,876	1,591	5,139
Total mortgage-backed securities	422	140,224	256	244	2,879	1,591	145,616
Total investment securities	2,382	230,785	1,183	286	2,879	1,600	239,115
Total investments	$ 8,882	$ 268,672	$ 60,821	$ 11,905	$ 5,864	$ 18,851	$ 374,995

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after March 31, 2020. Net carrying values at March 31, 2020 are presented after any allowance for credit losses.
(2) Carrying values do not include related accrued interest.
(3) Does not reflect any changes in ratings, outlook, or watch status occurring after December 31, 2019.

Monoline Bond Insurance. Certain FHLBank investment securities portfolios include a limited number of investments that are insured by monoline bond insurers. The monoline bond insurance on these investments guarantees the timely payment of principal and interest if these payments cannot be satisfied from the cash flows of the underlying mortgage collateral.

Short-term Investments. The FHLBanks maintain short-term investment portfolios, the proceeds of which may provide funds to meet the credit needs of their members and to maintain liquidity. The FHLBank Act and FHFA regulations set liquidity requirements for the FHLBanks, and an individual FHLBank's board of directors may also adopt additional liquidity policies. In addition, each FHLBank maintains a contingency liquidity plan in the event of operational disruptions at either the FHLBanks or the Office of Finance. (See *Liquidity and Capital Resources* for a discussion of the FHLBanks' liquidity management.)

Within the portfolio of short-term investments, the FHLBanks are subject to credit risk from unsecured credit exposures with private counterparties. Each FHLBank manages its own credit risk independently. The FHLBanks' unsecured credit investments have maturities ranging between overnight and nine months, and generally include the following types:

- *Interest-bearing deposits.* Primarily consists of unsecured deposits that earn interest.
- *Federal funds sold.* Unsecured loans of reserve balances at the Federal Reserve Banks between financial institutions that are made on an overnight and term basis.
- *Certificates of deposit.* Unsecured negotiable promissory notes issued by banks and payable to the bearer on demand.

Table 31 presents the FHLBanks' unsecured credit exposure with private counterparties by investment type. At March 31, 2020, the FHLBanks had aggregate unsecured credit exposure from investments of $1 billion or more to each of 25 private counterparties. The aggregate unsecured credit exposure to these counterparties represented 81.3% of the FHLBanks' total unsecured investment credit exposure to private counterparties. The unsecured investment credit exposure presented in Table 31 does not reflect the average or maximum exposure during the period, as the balances presented reflect the balances at period end. The increase in total unsecured credit exposure at March 31, 2020, compared to December 31, 2019, was primarily due to a shift within the short-term investment portfolio from securities purchased under agreements to resell to federal funds sold.

Table 31 - Unsecured Credit Exposure by Investment Type
(dollars in millions)

Carrying Value(1)(2)	March 31, 2020	December 31, 2019
Interest-bearing deposits	$ 15,730	$ 14,429
Federal funds sold	74,356	51,357
Certificates of deposit	275	1,410
Total	$ 90,361	$ 67,196

(1) Excludes unsecured investment credit exposure to U.S. government, U.S. government agencies, government instrumentalities, government-sponsored enterprises, and supranational entities, and does not include related accrued interest.
(2) May include unsecured investment credit exposure to members.

Each FHLBank actively monitors its credit exposures and the credit quality of its counterparties, including an assessment of each counterparty's financial performance, capital adequacy, sovereign support, and the current market perceptions of the counterparties. General macroeconomic, political, and market conditions may also be considered when deciding on unsecured exposure. As a result, the FHLBanks may limit or suspend existing exposures.

FHFA regulations include limits on the amount of unsecured credit an individual FHLBank may extend to a counterparty or to a group of affiliated counterparties. This limit is based on a percentage of eligible capital and the counterparty's overall credit rating. Under these regulations, the level of eligible capital is determined as the lesser of an individual FHLBank's total regulatory capital or the eligible amount of Tier 1 capital or regulatory capital of the counterparty. The eligible amount of capital is then multiplied by a stated percentage. The percentage that an FHLBank may offer for term extensions of unsecured credit ranges from 1% to 15% based on the counterparty's credit rating. The calculation of term extensions of unsecured credit includes on-balance sheet transactions, off-balance sheet commitments, and derivative transactions. (See *Credit Risk - Derivative Counterparties* for additional information related to derivatives exposure.)

FHFA regulation also permits the FHLBanks to extend additional unsecured credit for sales of federal funds with a maturity of one day or less and sales of federal funds subject to a continuing contract that renews automatically. An FHLBank's total unsecured exposure to a counterparty may not exceed twice the regulatory limit for term exposures, or a total of 2% to 30% of the eligible amount of capital, based on the counterparty's credit rating. As of March 31, 2020, each of the FHLBanks was in compliance with the regulatory limits established for unsecured credit.

The FHLBanks are prohibited by FHFA regulation from investing in financial instruments issued by non-U.S. entities, other than those issued by U.S. branches and agency offices of foreign commercial banks. The FHLBanks' unsecured credit exposures to U.S. branches and agency offices of foreign commercial banks include the risk that, as a result of political or economic conditions in a country, the counterparty may be unable to meet its contractual repayment obligations. The FHLBanks' unsecured credit exposures to domestic counterparties and U.S. subsidiaries of foreign commercial banks include the risk that these counterparties have extended credit to foreign counterparties. As of March 31, 2020, an FHLBank held full faith and credit U.S. guaranteed securities with foreign issuers totaling $459 million. Other than these investments, the FHLBanks are in compliance with the FHFA regulation as of March 31, 2020.

As of March 31, 2020, the FHLBanks' unsecured investment credit exposure to U.S. branches and agency offices of foreign commercial banks was comprised of federal funds sold and certificates of deposit. As of March 31, 2020, 75.9% of the FHLBanks' unsecured investments in federal funds sold and all of the FHLBanks' unsecured investments in certificates of deposit were to U.S. branches and agency offices of foreign commercial banks.

Figures 29 and 30 present total unsecured investment credit exposure by credit rating and by contractual maturity at March 31, 2020.

Figure 29 - Total Unsecured Investment Credit Exposure by Credit Rating (dollars in billions)

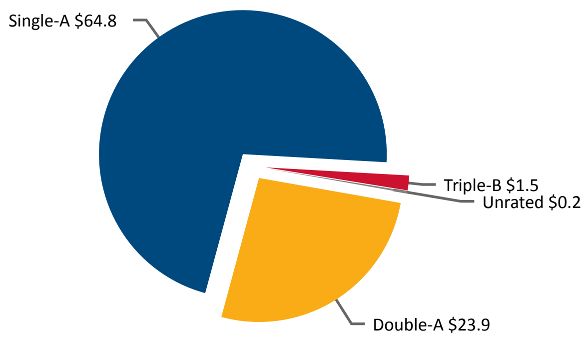


Figure 30 - Total Unsecured Investment Credit Exposure by Contractual Maturity (dollars in billions)

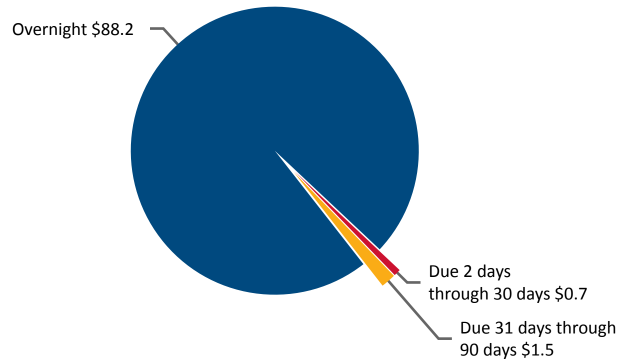


Table 32 presents the lowest long-term credit ratings of the unsecured investment credit exposures presented by the domicile of the counterparty or the domicile of the counterparty's immediate parent for U.S. branches and agency offices of foreign commercial banks based on the nationally recognized statistical rating organization(s) used by the individual FHLBank holding the investment. This table does not reflect the foreign sovereign government's credit rating. The internal ratings of an individual FHLBank may differ from those obtained from the nationally recognized statistical rating organization(s) and other FHLBank internal ratings. Investors should not take the historical or current ratings displayed in this table as an indication of future ratings.

Table 32 - Ratings of Unsecured Investment Credit Exposure by Domicile of Counterparty at March 31, 2020(1)
(dollars in millions)

	Investment Grade				
Carrying Value(2)	**Double-A**	**Single-A**	**Triple-B**	**Unrated**	**Total**
Domestic	$ 1,768	$ 26,523	$ 1,537	$ 141	$ 29,969
U.S. subsidiaries of foreign commercial banks	1,553	2,110	—	—	3,663
Total domestic and U.S. subsidiaries of foreign commercial banks	3,321	28,633	1,537	141	33,632
U.S. branches and agency offices of foreign commercial banks					
Canada	2,755	13,368	—	—	16,123
Australia	8,585	—	—	—	8,585
Netherlands	—	7,228	—	—	7,228
France	—	4,620	—	—	4,620
Finland	3,420	560	—	—	3,980
Switzerland	—	3,368	—	—	3,368
Germany	700	2,450	—	—	3,150
Sweden	2,430	650	—	—	3,080
Norway	2,695	—	—	—	2,695
Japan	—	1,530	—	—	1,530
United Kingdom	—	1,370	—	—	1,370
Austria	—	1,000	—	—	1,000
Total U.S. branches and agency offices of foreign commercial banks	20,585	36,144	—	—	56,729
Total unsecured investment credit exposure	$ 23,906	$ 64,777	$ 1,537	$ 141	$ 90,361

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after March 31, 2020.
(2) Excludes unsecured investment credit exposure to U.S. government, U.S. government agencies, government instrumentalities, government-sponsored enterprises, and supranational entities, and does not include related accrued interest.

Table 33 presents the contractual maturity of the FHLBanks' unsecured investment credit exposure by the domicile of the counterparty or the domicile of the counterparty's immediate parent for U.S. branches and agency offices of foreign commercial banks. The FHLBanks also reduce the credit risk on investments by generally investing in investments that have short-term maturities. At March 31, 2020, 97.6% of the carrying value of the total unsecured investments held by the FHLBanks had overnight maturities.

Table 33 - Contractual Maturity of Unsecured Investment Credit Exposure by Domicile of Counterparty at March 31, 2020
(dollars in millions)

Carrying Value(1)	Overnight	Due 2 days through 30 days	Due 31 days through 90 days	Total
Domestic	$ 29,969	$ —	$ —	$ 29,969
U.S. subsidiaries of foreign commercial banks	3,663	—	—	3,663
Total domestic and U.S. subsidiaries of foreign commercial banks	33,632	—	—	33,632
U.S. branches and agency offices of foreign commercial banks				
Canada	15,448	175	500	16,123
Australia	8,285	300	—	8,585
Netherlands	7,228	—	—	7,228
France	4,620	—	—	4,620
Finland	3,480	—	500	3,980
Switzerland	3,368	—	—	3,368
Germany	2,650	—	500	3,150
Sweden	2,905	175	—	3,080
Norway	2,695	—	—	2,695
Japan	1,530	—	—	1,530
United Kingdom	1,370	—	—	1,370
Austria	1,000	—	—	1,000
Total U.S. branches and agency offices of foreign commercial banks	54,579	650	1,500	56,729
Total unsecured investment credit exposure	$ 88,211	$ 650	$ 1,500	$ 90,361

(1) Excludes unsecured investment credit exposure to U.S. government, U.S. government agencies, government instrumentalities, government-sponsored enterprises, and supranational entities and does not include related accrued interest.

Mortgage Loans Held for Portfolio. The FHFA's Acquired Member Asset (AMA) regulation permits the FHLBanks to purchase and hold specified mortgage loans from their members. Each FHLBank has established or participated in the Acquired Member Asset programs such as the MPF Program and MPP as services to their members. Members and eligible housing associates may apply to become a participating financial institution (PFI) of their respective FHLBank. The mortgage loans purchased under these programs may carry more credit risk than advances, even though the respective member or housing associate provides credit enhancement and bears a portion of the credit risk.

In addition to credit risk associated with mortgage loans purchased or funded through the AMA programs, the FHLBanks are exposed to the risk of non-performance of mortgage insurers that provide primary mortgage insurance and supplemental mortgage insurance coverage on mortgage loans.

The FHFA's AMA regulation on credit risk sharing allows an FHLBank to utilize its choice of model and methodology to determine the credit enhancement for AMA loan assets and pool loans. The assets delivered must be credit enhanced by the members up to an FHLBank determined "AMA investment-grade" instead of a specific nationally recognized statistical rating organization's ratings.

Due to the negative economic impacts associated with the COVID-19 pandemic, including rising unemployment as a result of widespread business closures, the FHLBanks are implementing temporary relief provisions for MPP and MPF Program loans, including forbearance under the CARES Act, temporary moratoriums on foreclosures and evictions, and temporary alternative underwriting procedures.

Management at each FHLBank believes that it has adequate policies and procedures in place to manage credit risk on mortgage loans appropriately. (See *Note 5 - Mortgage Loans* to the accompanying combined financial statements for additional information about mortgage loan payment status, allowance for credit losses, and other delinquency statistics.)

See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Risk Management - Credit Risk - Mortgage Loans Held for Portfolio*, on pages 103 to 107 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for additional information on credit risk of mortgage loans held for portfolio, including loss allocation structures, mortgage insurance, and state concentrations for MPF Program and MPP loans.

Derivative Counterparties. Each FHLBank transacts most of its derivatives with large banks and major broker-dealers. Derivative transactions may be either executed with a counterparty (uncleared derivatives) or cleared through a Futures Commission Merchant (i.e., clearing agent) with a Derivative Clearing Organization (cleared derivatives).

Each FHLBank is subject to credit risk due to the risk of non-performance by counterparties to its derivative transactions. The amount of credit risk on derivatives depends on the extent to which netting procedures, collateral requirements, and other credit enhancements are used and are effective in mitigating the risk. Each FHLBank manages credit risk through credit analysis, collateral management, and other credit enhancements. The FHLBanks are also required to follow the requirements set forth by applicable regulation.

The contractual or notional amount of derivative transactions reflects the involvement of an FHLBank in the various classes of financial instruments. The maximum credit risk of an FHLBank with respect to derivative transactions is the estimated cost of replacing the derivative transactions if there is a default, minus the value of any related collateral. In determining maximum credit risk, each FHLBank considers accrued interest receivables and payables, as well as the netting requirements to net assets and liabilities.

Uncleared Derivatives. Each FHLBank is subject to the risk of non-performance by the counterparties to its uncleared derivative transactions. An FHLBank generally requires collateral on uncleared derivative transactions. Unless the collateral delivery threshold is set to zero, the amount of net unsecured credit exposure that is permissible with respect to each counterparty depends on the credit rating of that counterparty. A counterparty generally must deliver collateral if the total market value of the FHLBank's exposure to that counterparty rises above a specific threshold. As a result of these risk mitigation initiatives, the management of each FHLBank did not anticipate any credit losses on its uncleared derivative transactions as of March 31, 2020.

Cleared Derivatives. Each FHLBank is subject to the risk of non-performance by the Derivative Clearing Organization(s) (Clearinghouse) and the clearing agents. The requirement that an FHLBank posts initial and variation margin through the clearing agent, to the Clearinghouse, exposes an FHLBank to credit risk in the event that the clearing agent or the Clearinghouse fails to meet its obligations. However, the use of cleared derivatives is intended to mitigate an FHLBank's overall credit risk exposure because a central counterparty is substituted for individual counterparties and collateral/payment is posted daily for changes in the value of cleared derivatives through a clearing agent. Due to declines in market values of cleared derivatives during the three months ended March 31, 2020, there was an increase in variation margin posted on cleared derivatives to the Clearinghouses resulting in an increase in net cash used in operating activities reported on the Combined Statement of Cash Flows during the period. The management of each FHLBank did not anticipate any credit losses on its cleared derivatives as of March 31, 2020.

Table 34 presents the derivative positions with non-member counterparties and member institutions to which the FHLBanks had credit exposure at March 31, 2020. The ratings presented in this table represent the lowest long-term counterparty credit rating available for each counterparty of an individual FHLBank, based on the nationally recognized statistical rating organization(s) used by that FHLBank. Investors should not take the historical or current ratings displayed in this table as an indication of future ratings.

Table 34 - Derivative Counterparty Credit Exposure at March 31, 2020
(dollars in millions)

Credit Rating(1)	Notional Amount	Net Derivatives Fair Value Before Collateral	Cash Collateral Pledged To (From) Counterparties	Non-cash Collateral Pledged To (From) Counterparties	Net Credit Exposure to Counterparties
Non-member counterparties					
Asset positions with credit exposure					
Uncleared derivatives					
Double-A	$ 300	$ 5	$ (4)	$ —	$ 1
Single-A	8,485	45	76	(110)	11
Triple-B	1,224	33	(33)	—	—
Cleared derivatives(2)	527,199	195	2,406	2,367	4,968
Liability positions with credit exposure					
Uncleared derivatives					
Double-A	796	(94)	96	—	2
Single-A	62,688	(3,289)	3,380	22	113
Triple-B	29,954	(1,575)	1,649	—	74
Cleared derivatives(2)	70,223	(22)	338	—	316
Total derivative positions with credit exposure to non-member counterparties	700,869	(4,702)	7,908	2,279	5,485
Member institutions(3)	4,468	57	—	—	57
Total	$ 705,337	$ (4,645)	$ 7,908	$ 2,279	$ 5,542

(1) This table does not reflect any changes in rating, outlook, or watch status occurring after March 31, 2020.
(2) Represents derivative transactions cleared with LCH Ltd. and CME Clearing, the FHLBanks' clearinghouses. LCH Ltd. is rated AA- by S&P and CME Clearing is not rated, but its parent company, CME Group Inc., is rated Aa3 by Moody's and AA- by S&P.
(3) Member institutions include mortgage delivery commitments and derivatives with members where an FHLBank is acting as an intermediary. Collateral held with respect to derivatives with member institutions where an FHLBank is acting as an intermediary represents the amount of eligible collateral physically held by or on behalf of the FHLBank or collateral assigned to the FHLBank, as evidenced by a written security agreement, and held by the member institution for the benefit of that FHLBank.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Each FHLBank is responsible for establishing its own risk management philosophies, practices, and policies. Each FHLBank describes its risk management policies for its business, including quantitative and qualitative disclosures about its market risk, in its periodic reports filed with the SEC. (See *Explanatory Statement about Federal Home Loan Banks Combined Financial Report*.)

Each FHLBank has established policies and procedures to evaluate, manage, and mitigate market risks. The FHFA has established regulations governing the risk management practices of the FHLBanks. The FHLBanks must file periodic compliance reports with the FHFA. The FHFA conducts annual on-site examinations, interim on-site visits, and off-site analyses of each FHLBank and the Office of Finance.

Interest-Rate Risk

Interest-rate risk is the risk that relative and absolute changes in interest rates may adversely affect an institution's financial condition. The goal of an interest-rate risk management strategy is not necessarily to eliminate interest-rate risk, but to manage it by setting, and operating within, an appropriate framework and limits. The FHLBanks generally manage interest-rate risk by acquiring and maintaining a portfolio of assets and liabilities and entering into related derivative transactions to limit the expected mismatches in duration and market value of equity sensitivity. The FHLBanks measure and monitor interest-rate risk with commonly used methods, which include the calculations of market value of equity, duration of equity, and duration gap. (See *Quantitative and Qualitative Disclosures about Market Risk*, on pages 111 to 119 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for additional information.)

Transition from LIBOR to an Alternative Reference Rate

In July 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that after 2021 it will no longer persuade or compel banks to submit rates for the calculation of LIBOR. In response, the Federal Reserve Board and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee to identify a set of alternative reference interest rates for possible use as market benchmarks. This committee has proposed the Secured Overnight Financing Rate (SOFR) as its recommended alternative to U.S. dollar LIBOR, and the Federal Reserve Bank of New York began publishing SOFR rates in the second quarter of 2018. SOFR is based on a broad segment of the overnight Treasury repurchase market and is intended to be a measure of the cost of borrowing cash overnight collateralized by Treasury securities.

Many of the FHLBanks' assets and liabilities are indexed to LIBOR, with exposure extending past December 31, 2021. The FHLBanks are currently evaluating and planning for the eventual replacement of the LIBOR benchmark interest rate, including the possibility of SOFR as the dominant replacement. As a result, each of the FHLBanks and the Office of Finance has developed a LIBOR transition plan, which addresses considerations such as LIBOR exposure, fallback language, operational preparedness, and balance sheet management.

In assessing their current exposure to LIBOR, the FHLBanks have developed an inventory of affected financial instruments and identified contracts that may require adding or adjusting the fallback language, which includes advances, investment securities, consolidated bonds, and derivatives. The FHLBanks have added or adjusted fallback language related to a majority of their advances to members and have added or adjusted fallback language applicable to their consolidated bonds. The FHLBanks continue to monitor the market-wide efforts to address fallback language related to derivatives and investment securities, as well as fallback language for new activities and issuances of financial instruments. The FHLBanks are in the process of assessing their operational readiness, including updating their processes and information technology systems to support the transition from LIBOR to an alternative reference rate. In order to manage their balance sheet exposure to LIBOR-indexed assets and liabilities, including those with maturities beyond 2021, the FHLBanks continue to issue SOFR-indexed consolidated bonds and certain FHLBanks have begun to issue SOFR-linked advances. In addition, the FHLBanks have begun to execute derivative transactions to swap certain financial instruments to SOFR or other alternative reference rates.

Market activity in SOFR-indexed financial instruments continues to increase and the FHLBanks continue to issue SOFR-indexed consolidated bonds since the FHLBanks' initial issuance in the fourth quarter of 2018. During the three months ended March 31, 2020, the FHLBanks issued $80.4 billion in SOFR-linked consolidated bonds and during the year ended December 31, 2019, the FHLBanks issued $152.5 billion in SOFR-linked consolidated bonds. The FHLBanks continue to execute LIBOR-indexed derivative transactions to manage interest-rate risk. Certain FHLBanks have begun to implement Overnight Index Swap (OIS) as an alternative interest-rate hedging strategy for certain financial instruments rather than use LIBOR when entering into new derivative transactions. In addition, a SOFR-based derivative market has begun to emerge. Certain FHLBanks have begun to offer SOFR-linked advances to their members. During the three months ended March 31, 2020, the FHLBanks issued $18.8 billion in SOFR-linked advances and during the year ended December 31, 2019, the FHLBanks issued $2.3 billion in SOFR-linked advances.

In September 2019, the FHFA issued a Supervisory Letter to the FHLBanks providing LIBOR transition guidance. The Supervisory Letter states that by March 31, 2020, the FHLBanks should no longer enter into new financial assets, liabilities, and derivatives that reference LIBOR and mature after December 31, 2021, for all product types except investments. By December 31, 2019, the FHLBanks should stop purchasing investments that reference LIBOR and mature after December 31, 2021. On March 16, 2020, the FHFA extended to June 30, 2020, the FHLBanks' ability to enter into LIBOR-based instruments that mature after December 31, 2021, except for investments and option embedded products. (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Legislative and Regulatory Developments* on page 87 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019 for more information.)

The FHLBanks have LIBOR exposure related to advances, investment securities, consolidated bonds, and derivatives with interest rates indexed to LIBOR. Table 35 presents LIBOR-indexed variable-rate financial instruments and interest-rate swaps with LIBOR exposure at March 31, 2020 and December 31, 2019.

Table 35 - Financial Instruments and Interest-Rate Swaps with LIBOR Exposure
(*dollars in millions*)

	March 31, 2020			
	Due/Terminates in 2020	Due/Terminates in 2021	Due/Terminates in 2022 and Thereafter	Total
Assets with LIBOR exposure				
Advances by redemption term (principal amount)	$ 78,608	$ 67,925	$ 24,586	$ 171,119
Investment securities by contractual maturity (principal amount)(1)				
Non-mortgage-backed securities	792	160	7,291	8,243
Mortgage-backed securities	257	174	64,926	65,357
Total investment securities	1,049	334	72,217	73,600
LIBOR-indexed interest-rate swaps notional amount (receive leg)				
Cleared	51,351	46,165	75,819	173,335
Uncleared	3,142	3,559	59,283	65,984
Total interest-rate swaps	54,493	49,724	135,102	239,319
Total principal/notional amount	$ 134,150	$ 117,983	$ 231,905	$ 484,038
Liabilities with LIBOR exposure				
Consolidated bonds by contractual maturity (principal amount)	$ 154,726	$ 38,703	$ 290	$ 193,719
LIBOR-indexed interest-rate swaps notional amount (pay leg)				
Cleared	91,493	36,247	12,979	140,719
Uncleared	7,566	6,140	24,241	37,947
Total interest-rate swaps	99,059	42,387	37,220	178,666
Total principal/notional amount	$ 253,785	$ 81,090	$ 37,510	$ 372,385

	December 31, 2019			
	Due/Terminates in 2020	Due/Terminates in 2021	Due/Terminates in 2022 and Thereafter	Total
Assets with LIBOR exposure				
Advances by redemption term (principal amount)	$ 84,966	$ 34,577	$ 14,938	$ 134,481
Investment securities by contractual maturity (principal amount)(1)				
Non-mortgage-backed securities	1,166	160	7,445	8,771
Mortgage-backed securities	417	184	70,696	71,297
Total investment securities	1,583	344	78,141	80,068
LIBOR-indexed interest-rate swaps notional amount (receive leg)				
Cleared	59,346	33,455	76,002	168,803
Uncleared	4,900	3,759	53,698	62,357
Total interest-rate swaps	64,246	37,214	129,700	231,160
Total principal/notional amount	$ 150,795	$ 72,135	$ 222,779	$ 445,709
Liabilities with LIBOR exposure				
Consolidated bonds by contractual maturity (principal amount)	$ 197,533	$ 8,420	$ 644	$ 206,597
LIBOR-indexed interest-rate swaps notional amount (pay leg)				
Cleared	98,637	23,641	9,716	131,994
Uncleared	26,612	11,746	23,573	61,931
Total interest-rate swaps	125,249	35,387	33,289	193,925
Total principal/notional amount	$ 322,782	$ 43,807	$ 33,933	$ 400,522

(1) MBS and Federal Family Education Loan Program ABS are presented by contractual maturity. However, their expected maturities will likely differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment fees.

In addition to LIBOR-indexed interest-rate swaps included in Table 35, the FHLBanks have other derivatives with LIBOR exposure at March 31, 2020 and December 31, 2019. Table 36 presents the notional amount of other derivatives with LIBOR exposure at March 31, 2020 and December 31, 2019.

Table 36 - Notional Amount of Other Derivatives with LIBOR Exposure
(*dollars in millions*)

	March 31, 2020			
	Terminates in 2020	Terminates in 2021	Terminates in 2022 and Thereafter	Total
Interest-rate swaptions	$ 576	$ 1,106	$ 1,424	$ 3,106
Interest-rate caps or floors	618	4,005	6,913	11,536
Interest-rate futures or forwards	342	—	—	342
Other	348	—	—	348
Total notional amount of other derivatives with LIBOR exposure	$ 1,884	$ 5,111	$ 8,337	$ 15,332

	December 31, 2019			
	Terminates in 2020	Terminates in 2021	Terminates in 2022 and Thereafter	Total
Interest-rate swaptions	$ 2,925	$ 1,856	$ 1,364	$ 6,145
Interest-rate caps or floors	986	4,005	6,913	11,904
Interest-rate futures or forwards	122	—	—	122
Other	127	—	—	127
Total notional amount of other derivatives with LIBOR exposure	$ 4,160	$ 5,861	$ 8,277	$ 18,298

Market Value of Equity and Duration of Equity

Each FHLBank has an internal modeling system for measuring its duration of equity; therefore, individual FHLBank measurements may not be directly comparable. Generally, duration of equity equals the market value-weighted duration of assets minus the market value-weighted duration of liabilities (factoring in the effect of derivatives), divided by the market value of equity. Each FHLBank reports the results of its duration of equity calculations to the FHFA each quarter. However, not all FHLBanks manage to the duration of equity risk measure. The capital adequacy rules of the FHFA require each FHLBank to hold permanent capital in an amount sufficient to cover the sum of its credit, market, and operations risk-based capital requirements, which are defined by applicable regulations. Each FHLBank has implemented a market-risk model that calculates the market-risk component of this requirement.

Table 37 presents each FHLBank that includes quantitative market value of equity and duration of equity information in its individual 2020 First Quarter SEC Form 10-Q.

Table 37 - Individual FHLBank's Market Value of Equity and Duration of Equity Disclosures

FHLBank	Market Value of Equity	Duration of Equity
Boston	✓	✓
New York	✓	✓
Pittsburgh	(1)	✓
Atlanta	✓	✓
Cincinnati	✓	✓
Indianapolis	✓	✓
Chicago	(2)	✓
Des Moines	(3)	(3)
Dallas	✓	(4)
Topeka	(5)	✓
San Francisco	✓	(6)

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(1) The FHLBank of Pittsburgh monitors and measures market value of equity to par value of capital stock, as described in its 2020 First Quarter SEC Form 10-Q. In addition, the FHLBank of Pittsburgh also monitors return on equity spread volatility relative to a return on equity spread volatility limit, established and approved by its board of directors.

(2) The FHLBank of Chicago disclosed the dollar loss limits on changes in market value of equity under parallel interest rate shocks in its 2020 First Quarter SEC Form 10-Q.

(3) Although the FHLBank of Des Moines measures and monitors market value of equity and duration of equity, those measures are not disclosed as key market risk measures. The FHLBank of Des Moines disclosed, in its 2020 First Quarter SEC Form 10-Q, market value of capital stock (MVCS) sensitivity and projected income sensitivity as key market risk measures and MVCS and regulatory capital as its key capital adequacy measures.

(4) The FHLBank of Dallas monitors and measures duration of equity and duration gap, as described in its 2020 First Quarter SEC Form 10-Q. In addition, the FHLBank of Dallas also monitors adjusted duration of equity and adjusted duration gap, which measurements more closely align the put dates on its putable advances with the projected call dates of associated interest-rate swaps. See the FHLBank of Dallas 2020 First Quarter SEC Form 10-Q for additional information.

(5) The FHLBank of Topeka measures and monitors market value of equity (MVE); however, the FHLBank of Topeka measures market value risk in terms of its MVE in relation to its total regulatory capital stock outstanding instead of to its book value of equity. As described in its 2020 First Quarter SEC Form 10-Q, the FHLBank of Topeka believes this is a reasonable metric because, as a cooperative, the metric reflects the market value of the FHLBank of Topeka relative to the book value of its capital stock.

(6) The FHLBank of San Francisco does not disclose duration of equity, rather it discloses a comparable metric, "Market Value of Capital Sensitivity" as a key market risk measure.

Table 38 presents the duration of equity reported by each FHLBank to the FHFA in accordance with the FHFA's guidance, which prescribes that down and up interest-rate shocks equal 200 basis points. However, the applicable guidance restricts the down rate from assuming a negative interest rate. Therefore, each FHLBank adjusts the down rate accordingly in periods of very low levels of interest rates.

Table 38 - Duration of Equity
(in years)

	March 31, 2020			December 31, 2019		
FHLBank	**Down**	**Base**	**Up**	**Down**	**Base**	**Up**
Boston	(0.9)	1.3	1.7	5.7	1.1	3.0
New York	(0.1)	(3.2)	(0.2)	0.1	(0.9)	0.4
Pittsburgh	0.3	(1.2)	1.4	1.5	0.1	2.3
Atlanta	2.3	(2.5)	0.4	0.5	0.4	2.4
Cincinnati	0.0	(4.5)	0.6	0.6	(1.2)	1.7
Indianapolis	(0.5)	(1.7)	1.2	2.0	2.4	0.5
Chicago	1.6	(2.1)	(0.3)	2.2	1.2	2.4
Des Moines	(0.4)	(0.1)	1.9	0.4	(0.1)	1.9
Dallas	(17.7)	(6.0)	(0.5)	(3.8)	(2.1)	1.4
Topeka	0.7	(2.3)	(0.5)	2.4	(0.9)	0.8
San Francisco	0.2	(0.5)	(0.3)	4.2	1.0	1.5

Duration Gap

A related measure of interest-rate risk is duration gap, which is the difference between the estimated durations (market value sensitivity) of assets and liabilities, and reflects the extent to which estimated maturity and repricing cash flows for assets and liabilities are matched. Duration gap determines the sensitivity of assets and liabilities to interest-rate changes. Each FHLBank has an internal modeling system for measuring its duration gap; therefore, individual FHLBank measurements may not be directly comparable. Duration generally indicates the expected change in an instrument's market value resulting from an increase or a decrease in interest rates. Higher duration numbers, whether positive or negative, indicate greater volatility in the market value of equity in response to changing interest rates. Duration gap numbers in Table 39 include the effect of derivative transactions.

Table 39 - Duration Gap
(in months)

FHLBank	March 31, 2020	December 31, 2019
Boston	0.8	0.7
New York	(2.0)	(0.8)
Pittsburgh	(0.2)	(0.2)
Atlanta	(1.4)	0.1
Cincinnati	(0.3)	(0.1)
Indianapolis	(1.1)	1.0
Chicago	(1.3)	0.8
Des Moines	(0.5)	(0.4)
Dallas	(3.3)	(1.5)
Topeka	(1.3)	(0.5)
San Francisco	(0.5)	0.7

Use of Derivatives to Manage Interest-Rate Risk

An FHLBank enters into derivatives to manage interest-rate risk, prepayment risk, and other exposure inherent in otherwise unhedged assets and funding positions. An FHLBank attempts to use derivatives to reduce interest-rate exposure in the most cost-efficient manner. Derivatives are also used to manage the effective maturity, repricing frequency, or option characteristics of financial instruments to achieve risk-management objectives. (See *Note 6 - Derivatives and Hedging Activities* to the accompanying combined financial statements for a discussion of managing interest-rate risk exposure and *Financial Discussion and Analysis - Combined Results of Operations* for the effect of derivatives and hedging activities on net interest income and non-interest income resulting from the FHLBanks' hedging strategies.)

Table 40 presents the notional amount of the pay and receive leg of interest-rate swaps by interest-rate index at March 31, 2020 and December 31, 2019. The pay and receive legs are equal as both sides of the derivative transaction are being presented. (See *Quantitative and Qualitative Disclosures about Market Risk* for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 40 - Notional Amount of Interest-Rate Swaps by Interest-Rate Index
(dollars in millions)

	March 31, 2020		December 31, 2019	
	Pay Leg	Receive Leg	Pay Leg	Receive Leg
Interest-Rate Index				
Fixed	$ 386,833	$ 248,864	$ 321,090	$ 252,154
LIBOR	178,666	239,319	193,925	231,160
OIS	105,618	123,739	93,691	71,901
SOFR	43,213	101,808	6,142	57,633
Other interest-rate index	5	605	5	2,005
Total notional amount of interest-rate swaps	$ 714,335	$ 714,335	$ 614,853	$ 614,853

In addition to the interest-rate swaps included in Table 40, the FHLBanks have other derivatives at March 31, 2020 and December 31, 2019. Table 41 presents the notional amount of other derivatives at March 31, 2020 and December 31, 2019.

Table 41 - Notional Amount of Other Derivatives
(dollars in millions)

	March 31, 2020	December 31, 2019
Interest-rate caps or floors	$ 13,165	$ 13,575
Mortgage delivery commitments	8,176	2,537
Interest-rate swaptions	3,906	6,995
Interest-rate futures or forwards	2,274	1,141
Other	378	187
Total notional amount of other derivatives	$ 27,899	$ 24,435

CONTROLS AND PROCEDURES

FHLBanks

The management of each FHLBank is required under applicable laws and regulations to establish and maintain effective disclosure controls and procedures as well as effective internal control over financial reporting, as such disclosure controls and procedures and internal control over financial reporting relate to that FHLBank only. Each FHLBank's management assessed the effectiveness of its individual internal control over financial reporting as of December 31, 2019 based on the criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management of each FHLBank, other than the FHLBank of Des Moines, concluded, as of December 31, 2019 that its individual internal control over financial reporting was effective based on the criteria established in *Internal Control-Integrated Framework.* Additionally, the independent registered public accounting firm of each FHLBank, other than the FHLBank of Des Moines, opined that the respective individual FHLBank maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019. (See *Part II. Item 8 - Financial Statements and Supplementary Data* or *Item 9A - Controls and Procedures* of each FHLBank's 2019 SEC Form 10-K for its *Management's Report on Internal Control over Financial Reporting*.)

The management of each FHLBank, other than the FHLBank of Des Moines, concluded that its disclosure controls and procedures were effective at a reasonable assurance level as of the end of the period covered by its 2020 First Quarter SEC Form 10-Q. Additionally, each FHLBank, other than the FHLBank of Des Moines, indicated that there were no changes to its internal control over financial reporting during the quarter ended March 31, 2020, that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. (See *Part I. Item 4 - Controls and Procedures* of each FHLBank's 2020 First Quarter SEC Form 10-Q.)

FHLBank of Des Moines

The FHLBank of Des Moines' management concluded that it had two material weaknesses in its internal control over financial reporting as of December 31, 2019: (1) ineffective user access controls needed to ensure appropriate segregation of duties and adequate restrictions on user and privileged access to the FHLBank's information technology applications, programs, and data, and (2) ineffective control over information technology change management, including controls to monitor developers' access to production and testing of program changes. (See *Part II. Item 8 - Financial Statements and Supplementary Data and Item 9A - Controls and Procedures* of the FHLBank of Des Moines' 2019 SEC Form 10-K for additional information.)

The FHLBank of Des Moines' management concluded, based on its identification of material weaknesses in its internal control over financial reporting at December 31, 2019, that its disclosure controls and procedures were not effective at a reasonable assurance level as of the end of the period covered by its 2020 First Quarter SEC Form 10-Q. During the quarter ended March 31, 2020, the management of the FHLBank of Des Moines has taken remediation steps related to the implementation of user access controls that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. (See *Part I. Item 4 - Controls and Procedures* of the FHLBank of Des Moines' 2020 First Quarter SEC Form 10-Q.)

Office of Finance Controls and Procedures over the Combined Financial Reporting Combining Process

The Office of Finance is not responsible for the preparation, accuracy, or adequacy of the information or financial data provided by the FHLBanks to the Office of Finance for use in preparing the combined financial reports, or for the quality or effectiveness of the disclosure controls and procedures or internal control over financial reporting of the FHLBanks as they relate to that information and financial data. Each FHLBank is responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting with respect to the information and financial data provided to the Office of Finance. Although the Office of Finance is not an SEC registrant, FHFA regulations require that the combined financial report form and content generally be consistent with SEC Regulations S-K and S-X, as interpreted by the FHFA. The Office of Finance is not required to establish and maintain, and in light of the nature of its role has not established and maintained, disclosure controls and procedures and internal control over financial reporting in the same manner as those maintained by each FHLBank. The Office of Finance has established controls and procedures concerning the FHLBanks' submission of information and financial data to the Office of Finance, the process of combining the financial statements and other financial information of the individual FHLBanks, and the review of that information.

The Office of Finance does not independently verify the financial information submitted by each FHLBank that comprise the combined financial statements, the condensed combining schedules, and other disclosures included in this Combined Financial Report. Instead, the Office of Finance relies on each FHLBank management's certification and representation regarding the accuracy and completeness, in all material respects, of its data submitted to the Office of Finance for use in preparing this Combined Financial Report.

Audit Committee Charter

The charter of the audit committee of the Office of Finance's board of directors is available on the Office of Finance's web site at fhlb-of.com. This web site address is provided as a matter of convenience only, and its contents are not made part of or incorporated by reference into this report.

LEGAL PROCEEDINGS

The FHLBanks are subject to various pending legal proceedings arising in the normal course of business. The FHLBanks and the Office of Finance do not believe they are a party to, or subject to, any pending legal proceedings where the ultimate liability of the FHLBanks, if any, arising out of these proceedings is likely to have a material effect on the results of operations, financial condition, or liquidity of the FHLBanks on a combined basis or that are otherwise material to the FHLBanks on a combined basis. (See each FHLBank's 2020 First Quarter SEC Form 10-Q under *Part II. Item 1 - Legal Proceedings* for additional information, including updates, to its legal proceedings.)

Legal Proceedings Relating to the Purchase of Certain Private-label MBS

As of March 31, 2020, each of the FHLBanks of Boston, Chicago, and Des Moines is a plaintiff in continued legal proceedings that relate to the purchases of certain private-label MBS. Defendants in these lawsuits include entities and their affiliates that buy, sell, or distribute the FHLBanks' consolidated obligations or are derivative counterparties. These defendants and their affiliates may be members or former members of the plaintiff FHLBanks or other FHLBanks.

RISK FACTORS

There were no material changes to the risk factors disclosed in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, except as follows. (See each FHLBank's 2020 First Quarter SEC Form 10-Q for any updates to the risk factors included in the FHLBank's 2019 SEC Form 10-K under *Part I. Item 1A - Risk Factors*.)

The COVID-19 pandemic and related developments have created substantial economic and financial disruptions and uncertainties as well as significant operational challenges, which could increase many of the risks faced by the FHLBanks and adversely affect the FHLBanks' businesses, financial condition, and results of operations.

The recent outbreak of the COVID-19 pandemic, and governmental and public actions taken in response (such as shelter-in-place, stay-at-home or similar orders, travel restrictions, and business closures), have significantly reduced economic activity and created substantial uncertainty about the future economic environment. In addition, the COVID-19 pandemic and related developments have resulted in substantial disruptions in the financial markets, including dramatic increases in market volatilities. There are no comparable recent events that provide guidance as to the effect that the COVID-19 pandemic may have and, as a result, the ultimate impact of the outbreak, including the depth of the economic downturn and the timing and shape of the economic recovery, is highly uncertain. This could increase many of the risks faced by the FHLBanks, as described in the *Risk Factors* on pages 22 to 30 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, and adversely affect the businesses, financial condition, and results of operations of one or more FHLBanks and the FHLBanks on a combined basis.

A prolonged economic downturn, or periods of significant economic and financial disruptions and uncertainties resulting from the COVID-19 pandemic, may lead to an increased risk of credit losses for the FHLBanks, in particular due to decreases in the value of collateral securing their advances or of mortgage loans held in their portfolios or due to member financial difficulties or member failures, and may lead to an increased risk of counterparty defaults. For example, due to the recent turmoil in the financial markets associated with the COVID-19 pandemic, some financial institutions, including some FHLBank members with affiliates engaged in the mortgage real estate investment trust business, experienced financial difficulties. The risk of credit losses may be exacerbated by a downturn in the residential and commercial real estate markets, including higher delinquencies from rising unemployment and the effect of mortgage forbearance and other relief as well as financial difficulties or failures of mortgage servicers. A prolonged economic downturn may also lead to reduced demand for advances.

The disruptions to interest rates, credit spreads, and the availability of funds in the fixed income market in connection with the COVID-19 pandemic have adversely affected, and may continue to adversely affect, the FHLBanks’ cost of funding or access to funding such as reduced demand for longer-term consolidated obligations, as well as the valuation of and the yields on the FHLBanks’ assets. This, coupled with changes in FHLBank members’ demand for advances, may result in challenges in the FHLBanks’ ability to manage their assets and liabilities, including the pricing of advances and the funding gap, and adversely affect the FHLBanks’ profitability and liquidity. In particular, the effects of the COVID-19 pandemic on the FHLBanks’ cost of funding and the yields on the FHLBanks’ assets, as well as the FHLBanks’ needs to maintain sufficient liquidity in order to meet member demand, have contributed to, and may continue to cause, compression in their net interest income and net interest margin. To the extent interest rates continue to be low or negative interest rates arise, the FHLBanks’ businesses and profitability may be further adversely affected.

In addition, the shelter-in-place, stay-at-home or similar orders, travel restrictions, and business shutdowns as a result of the COVID-19 pandemic have led to substantial changes in normal business practices, such as the implementation of widespread work-from-home arrangements for the FHLBanks and the Office of Finance, as well as many FHLBank members, dealers, investors, and third-party service providers. These actions have resulted in significant operational challenges, including increased risk of operational errors, disruptions and failures, and of cybersecurity breaches, which could adversely affect the ability of the FHLBanks and the Office of Finance to conduct and manage their businesses.

The extent to which the COVID-19 pandemic impacts the FHLBanks’ businesses, financial condition, and results of operations will depend on many factors that are highly uncertain and difficult to predict, including, but not limited to: the duration, spread, and severity of the pandemic; the actions taken to contain the pandemic; and how quickly and to what extent normal economic and operating conditions can resume.

OTHER INFORMATION

In connection with the pending dissolution of the Financing Corporation (FICO), an aggregate of approximately $200 million in FICO’s surplus and remaining cash on hand is expected to be distributed in the second quarter of 2020 to the FHLBanks, as FICO's sole stockholders, in proportion to their ownership in FICO's nonvoting capital stock. The receipt by the FHLBanks of such distribution from FICO will be treated as a partial return of their prior capital contributions to FICO and credited to their unrestricted retained earnings. The FHLBanks do not expect any distribution from FICO to materially affect the FHLBanks' combined financial condition or combined results of operations. (See *Other Information* on page 124 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019 for additional information on the pending dissolution of FICO.)

MARKET FOR CAPITAL STOCK AND RELATED STOCKHOLDER MATTERS

As a cooperative, each FHLBank conducts its advances business and mortgage loan programs almost exclusively with its members. Members and certain former members own all of the FHLBanks' capital stock. There is no established marketplace for the FHLBanks' stock and it is not publicly traded. FHLBank stock is purchased by members at the stated par value of $100 per share and may be redeemed/repurchased at its stated par value of $100 per share, subject to applicable redemption periods and certain conditions and limitations. (See *Business - Capital, Capital Rules, and Dividends*, on pages 12 to 15 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for more information on the restrictions on capital stock redemptions and repurchases.)

At March 31, 2020, the FHLBanks had 428 million shares of capital stock outstanding, including mandatorily redeemable capital stock. The FHLBanks are not required to register their securities under the Securities Act of 1933, as amended; however, each FHLBank is required to register a class of its stock under the Securities Exchange Act of 1934, as amended. (See *Note 9 - Capital* to the accompanying combined financial statements for additional information on regulatory capital stock and mandatorily redeemable capital stock.)

Table 42 presents combined regulatory capital stock, which includes mandatorily redeemable capital stock, held by type of member and FHLBank membership by type of member.

Table 42 - Regulatory Capital Stock Held and Membership by Type of Member
(dollars in millions)

	March 31, 2020		December 31, 2019	
	Regulatory Capital Stock Amount	Number of Members	Regulatory Capital Stock Amount	Number of Members
Commercial banks	$ 25,743	3,976	$ 20,664	4,020
Insurance companies	6,024	475	5,185	471
Savings institutions	4,789	656	4,532	662
Credit unions	4,463	1,535	4,098	1,526
Community development financial institutions	18	61	16	60
Total	41,037	6,703	34,495	6,739
Mandatorily redeemable capital stock	1,726		1,378	
Total combined regulatory capital stock	$ 42,763		$ 35,873	

Figures 31 and 32 present the percentage of regulatory capital stock held, and membership, by type of member at March 31, 2020.

Figure 31 - Percentage of Regulatory Capital Stock Held by Type of Member

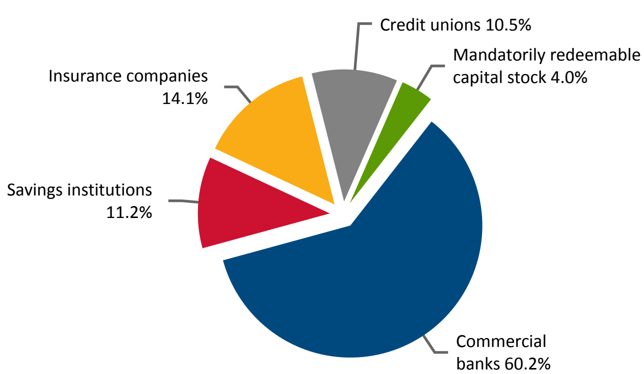
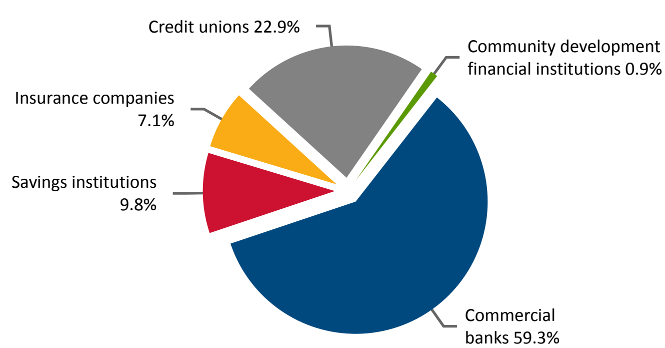


Figure 32 - Percentage of Membership by Type of Member



The information on regulatory capital stock presented in Table 43 is accumulated at the holding-company level. The percentage of total regulatory capital stock identified in Table 43 for each holding company was computed by dividing all regulatory capital stock owned by subsidiaries of that holding company by total combined regulatory capital stock. These percentage concentrations do not represent ownership concentrations in an individual FHLBank.

Table 43 - Top 10 Regulatory Capital Stockholders by Holding Company at March 31, 2020
(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Regulatory Capital Stock(3)	Percentage of Total Regulatory Capital Stock	Mandatorily Redeemable Capital Stock
Citigroup Inc.	New York	$ 1,869	4.4%	$ —
JPMorgan Chase & Co.	Cincinnati, Pittsburgh, Chicago, San Francisco, Des Moines	1,800	4.2%	1,167
Truist Financial Corporation	Atlanta	1,412	3.3%	—
The PNC Financial Services Group, Inc.	Pittsburgh, Cincinnati, Atlanta	1,081	2.5%	12
U.S. Bancorp	Cincinnati, Des Moines, Topeka	1,016	2.4%	1
Wells Fargo & Company	Des Moines, San Francisco, Dallas, Topeka	971	2.3%	15
MetLife, Inc.	New York, Pittsburgh, Boston, Des Moines	851	2.0%	6
Bank of America Corporation	Atlanta, San Francisco, Boston, Des Moines	845	2.0%	5
Ally Financial Inc.	Pittsburgh	793	1.9%	—
Navy Federal Credit Union	Atlanta	744	1.7%	—
		$ 11,382	26.7%	$ 1,206

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(1) Holding company information was obtained from the Federal Reserve System's web site, the National Information Center (NIC), and SEC filings. The NIC is a central repository of data about banks and other institutions for which the Federal Reserve System has a supervisory, regulatory, or research interest, including both domestic and foreign banking organizations operating in the United States.
(2) At March 31, 2020, each holding company had subsidiaries with regulatory capital stock holdings in these FHLBank districts.
(3) Includes FHLBank capital stock that is considered to be mandatorily redeemable, which is classified as a liability under GAAP.

SUPPLEMENTAL INFORMATION

Individual Federal Home Loan Bank Selected Financial Data and Financial Ratios

The following individual Federal Home Loan Bank (FHLBank) selected financial data and financial ratios are provided as a convenience to the reader. Please refer to *Explanatory Statement about Federal Home Loan Banks Combined Financial Report*, which discusses the independent management and operation of the FHLBanks; identifies the availability of other information about the FHLBanks; and describes where to find the periodic reports and other information filed by each FHLBank with the SEC.

Individual FHLBank Selected Financial Data and Financial Ratios

(dollars in millions)	Boston	New York	Pittsburgh
Selected Statement of Condition Data(1)			
At March 31, 2020			
Assets			
Investments(2)(3)	$ 18,072	$ 42,332	$ 27,900
Advances	45,076	136,151	78,093
Mortgage loans held for portfolio	4,532	3,214	5,242
Allowance for credit losses on mortgage loans	(4)	(4)	(4)
Total assets	68,901	182,733	115,658
Consolidated obligations(3)			
Discount notes	39,692	90,250	52,063
Bonds	24,577	81,089	56,954
Total consolidated obligations	64,269	171,339	109,017
Mandatorily redeemable capital stock	6	5	303
Total capital			
Capital stock(4)	2,266	7,313	3,630
Retained earnings	1,473	1,814	1,305
Accumulated other comprehensive income (loss)	(248)	(125)	24
Total capital	3,491	9,002	4,959
Asset composition (as a percentage of the individual FHLBank's total assets)			
Investments(2)(3)	26.2%	23.2%	24.1%
Advances	65.4%	74.5%	67.5%
Mortgage loans held for portfolio, net	6.6%	1.8%	4.5%
Total retained earnings as a percentage of FHLBank's total assets	2.1%	1.0%	1.1%
FHLBank's total assets as a percentage of FHLBank System's total assets	5.5%	14.5%	9.2%
At March 31, 2019			
Assets			
Investments(2)(3)	$ 15,544	$ 39,753	$ 21,491
Advances	32,152	99,132	75,233
Mortgage loans held for portfolio	4,369	2,942	4,534
Allowance for credit losses on mortgage loans	(1)	(1)	(8)
Total assets	52,328	142,575	101,772
Consolidated obligations(3)			
Discount notes	23,586	53,036	26,731
Bonds	24,914	80,150	68,629
Total consolidated obligations	48,500	133,186	95,360
Mandatorily redeemable capital stock	17	6	24
Total capital			
Capital stock(4)	1,830	5,671	3,746
Retained earnings	1,412	1,728	1,304
Accumulated other comprehensive income (loss)	(278)	(24)	109
Total capital	2,964	7,375	5,159
Asset composition (as a percentage of the individual FHLBank's total assets)			
Investments(2)(3)	29.7%	27.9%	21.1%
Advances	61.4%	69.5%	73.9%
Mortgage loans held for portfolio, net	8.3%	2.1%	4.4%
Total retained earnings as a percentage of individual FHLBank's total assets	2.7%	1.2%	1.3%
FHLBank's total assets as a percentage of FHLBank System's total assets	4.8%	13.2%	9.4%

(1) The sum or recalculation of individual FHLBank amounts may not agree or may not be recalculated from the Combined Statement of Condition amounts due to combining adjustments.
(2) Investments consist of interest-bearing deposits, deposits with other FHLBanks, securities purchased under agreements to resell, federal funds sold, trading securities, available-for-sale securities, and held-to-maturity securities.
(3) See *Note 1 - Summary of Significant Accounting Policies - Basis of Presentation* on pages F-12 to F-13 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2019, for more information about the elimination of interbank transactions.
(4) FHLBank capital stock is redeemable at the request of a member subject to the statutory redemption periods and other conditions and limitations. (See *Note 9 - Capital* to the accompanying combined financial statements for additional information on the statutory redemption periods and other conditions and limitations.)

Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 46,429	$ 25,665	$ 23,888	$ 37,249	$ 35,634	$ 31,035	$ 19,597	$ 43,016
137,037	80,425	38,927	55,005	79,757	46,923	31,678	77,872
282	11,923	10,649	10,649	9,547	4,286	11,024	3,242
(1)	—	—	(2)	(1)	(4)	(6)	(3)
189,392	122,510	78,666	103,443	126,068	83,807	63,190	124,870
96,490	79,660	29,653	47,095	33,071	43,953	25,564	39,102
81,856	34,668	42,079	48,593	84,266	34,186	33,730	77,937
178,346	114,328	71,732	95,688	117,337	78,139	59,294	117,039
1	572	323	328	96	7	2	83
6,652	4,739	2,098	1,954	4,653	2,700	1,802	3,231
2,185	1,153	1,124	3,822	2,199	1,267	981	3,404
(19)	(17)	(81)	(711)	(119)	(251)	(69)	(228)
8,818	5,875	3,141	5,065	6,733	3,716	2,714	6,407
24.5%	20.9%	30.4%	36.0%	28.3%	37.0%	31.0%	34.4%
72.4%	65.6%	49.5%	53.2%	63.3%	56.0%	50.1%	62.4%
0.1%	9.7%	13.5%	10.3%	7.6%	5.1%	17.4%	2.6%
1.2%	0.9%	1.4%	3.7%	1.7%	1.5%	1.6%	2.7%
15.0%	9.7%	6.2%	8.2%	10.0%	6.7%	5.0%	9.9%
$ 46,781	$ 37,550	$ 21,700	$ 35,394	$ 38,271	$ 30,041	$ 18,522	$ 36,494
90,929	54,880	32,830	50,776	99,228	36,097	29,863	70,262
347	10,520	11,399	7,579	7,944	2,595	8,702	3,160
(1)	(1)	(1)	(1)	(1)	(1)	(1)	—
138,940	103,378	66,383	94,122	146,043	69,037	57,427	110,577
61,166	44,212	21,254	39,639	44,994	37,369	26,785	28,281
69,186	52,124	40,376	47,047	91,979	26,746	27,400	74,094
130,352	96,336	61,630	86,686	136,973	64,115	54,185	102,375
1	23	174	315	237	7	4	227
4,753	4,059	1,985	1,660	5,182	2,432	1,508	2,959
2,126	1,031	1,084	3,608	2,092	1,121	943	3,400
44	(13)	69	61	85	159	28	287
6,923	5,077	3,138	5,329	7,359	3,712	2,479	6,646
33.7%	36.3%	32.7%	37.6%	26.2%	43.5%	32.3%	33.0%
65.4%	53.1%	49.5%	53.9%	67.9%	52.3%	52.0%	63.5%
0.2%	10.2%	17.2%	8.1%	5.4%	3.8%	15.1%	2.9%
1.5%	1.0%	1.6%	3.8%	1.4%	1.6%	1.6%	3.1%
12.8%	9.6%	6.1%	8.7%	13.5%	6.4%	5.3%	10.2%

Individual FHLBank Selected Financial Data and Financial Ratios (continued)

(dollars in millions)	Boston	New York	Pittsburgh
Selected Other Data			
March 31, 2020			
Advance concentrations - top five borrowers	43%	60%	78%
Regulatory capital stock concentrations - top five stockholders	37%	54%	70%
Regulatory capital-to-assets ratio(5)	5.4%	5.0%	4.5%
Cash and stock dividends			
Quarter-to-date March 31, 2020	$ 24	$ 88	$ 57
Quarter-to-date March 31, 2019	$ 37	$ 101	$ 70
Weighted average dividend rate			
Quarter-to-date March 31, 2020	5.46%	5.25%	7.43%
Quarter-to-date March 31, 2019	6.17%	6.35%	7.44%
Return on average equity(6)			
Quarter-to-date March 31, 2020	5.15%	5.57%	3.39%
Quarter-to-date March 31, 2019	6.94%	7.53%	7.66%
Return on average assets			
Quarter-to-date March 31, 2020	0.27%	0.27%	0.15%
Quarter-to-date March 31, 2019	0.37%	0.38%	0.38%
Net interest margin(7)			
Quarter-to-date March 31, 2020	0.20%	0.39%	0.41%
Quarter-to-date March 31, 2019	0.59%	0.51%	0.51%
Net interest spread			
Quarter-to-date March 31, 2020	0.12%	0.31%	0.34%
Quarter-to-date March 31, 2019	0.44%	0.38%	0.39%

(5) The regulatory capital-to-assets ratio is calculated based on the FHLBank's total regulatory capital as a percentage of total assets held at period-end. (See *Note 9 - Capital* to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

(6) Return on average equity is net income expressed as a percentage of average total capital. Mandatorily redeemable capital stock is not included in the calculation of return on average equity.

(7) Net interest margin is equal to net interest income represented as a percentage of average interest-earning assets.

Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
63%	64%	43%	49%	41%	36%	63%	62 %
56%	58%	36%	41%	29%	27%	54%	41 %
4.7%	5.3%	4.5%	5.9%	5.5%	4.7%	4.4%	5.4 %
$ 76	$ 21	$ 21	$ 21	$ 59	$ 15	$ 25	$ 52
$ 85	$ 65	$ 26	$ 21	$ 70	$ 19	$ 24	$ 50
5.93%	2.50%	4.25%	4.69%	5.14%	2.38%	5.94%	7.00 %
6.47%	6.00%	5.50%	4.76%	5.25%	2.96%	6.56%	7.00 %
5.97%	6.94%	3.81%	5.41%	5.51%	5.44%	1.75%	(0.46)%
5.72%	5.59%	4.37%	5.60%	6.16%	6.22%	8.77%	6.34 %
0.28%	0.34%	0.17%	0.30%	0.29%	0.28%	0.08%	(0.03)%
0.28%	0.28%	0.21%	0.32%	0.31%	0.35%	0.40%	0.37 %
0.23%	0.36%	0.36%	0.57%	0.35%	0.26%	0.36%	0.18 %
0.40%	0.47%	0.36%	0.50%	0.45%	0.42%	0.48%	0.52 %
0.16%	0.28%	0.24%	0.48%	0.25%	0.17%	0.28%	0.09 %
0.28%	0.35%	0.22%	0.36%	0.31%	0.26%	0.36%	0.38 %

INDEX OF TABLES AND FIGURES CONTAINED IN THE COMBINED FINANCIAL REPORT