FEDERAL HOME LOAN BANKS

Combined Financial Report
for the Quarterly Period Ended March 31, 2019

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 either the United States or any government agency.

The Securities Act of 1933, as amended, does not require the registration of consolidated obligations; therefore, no registration statement 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, 2019. This Combined Financial Report should be read in conjunction with the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, issued on March 27, 2019. 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 14, 2019.

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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, 2019	December 31, 2018
Assets		
Cash and due from banks	$ 539	$ 522
Interest-bearing deposits	9,766	17,182
Securities purchased under agreements to resell	51,655	45,325
Federal funds sold	75,357	54,216
Investment securities		
Trading securities *(Note 3)*	29,915	16,449
Available-for-sale securities *(Note 4)*	88,262	83,205
Held-to-maturity securities, fair value of $86,958 and $90,658 *(Note 5)*	86,461	90,413
Total investment securities	204,638	190,067
Advances, includes $6,694 and $6,168 at fair value held under fair value option *(Note 7)*	671,382	728,767
Mortgage loans held for portfolio, net of allowance for credit losses of $15 and $15 (*Note 8 and Note 9*)	64,076	62,534
Accrued interest receivable	2,292	2,087
Derivative assets, net *(Note 10)*	1,542	1,038
Other assets	1,209	1,112
Total assets	$ 1,082,456	$ 1,102,850
Liabilities		
Deposits *(Note 11)*	$ 8,329	$ 7,560
Consolidated obligations *(Note 12)*		
Discount notes, includes $1,993 and $4,172 at fair value held under fair value option	407,053	426,034
Bonds, includes $17,377 and $13,438 at fair value held under fair value option	602,535	603,491
Total consolidated obligations	1,009,588	1,029,525
Mandatorily redeemable capital stock	1,035	1,062
Accrued interest payable	2,077	1,878
Affordable Housing Program payable	1,119	1,096
Derivative liabilities, net *(Note 10)*	88	445
Other liabilities	4,059	2,940
Total liabilities	1,026,295	1,044,506
Commitments and contingencies (*Note 16*)		
Capital *(Note 13)*		
Capital stock		
Class B putable ($100 par value) issued and outstanding shares	35,587	38,251
Class A putable ($100 par value) issued and outstanding shares	198	247
Total capital stock	35,785	38,498
Retained earnings		
Unrestricted	15,408	15,241
Restricted	4,441	4,263
Total retained earnings	19,849	19,504
Accumulated other comprehensive income (loss) *(Note 14)*	527	342
Total capital	56,161	58,344
Total liabilities and capital	$ 1,082,456	$ 1,102,850

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, 2019	Three Months Ended March 31, 2018
Interest income		
Advances	$ 4,772	$ 3,347
Interest-bearing deposits	84	31
Securities purchased under agreements to resell	285	81
Federal funds sold	459	370
Investment securities		
Trading securities	128	49
Available-for-sale securities	668	532
Held-to-maturity securities	664	569
Total investment securities	1,460	1,150
Mortgage loans held for portfolio	562	463
Other	2	—
Total interest income	7,624	5,442
Interest expense		
Consolidated obligations		
Discount notes	2,561	1,515
Bonds	3,733	2,621
Total consolidated obligations	6,294	4,136
Deposits	40	24
Mandatorily redeemable capital stock	16	17
Total interest expense	6,350	4,177
Net interest income	1,274	1,265
Provision (reversal) for credit losses	1	2
Net interest income after provision (reversal) for credit losses	1,273	1,263
Non-interest income		
Net other-than-temporary impairment losses	(2)	(2)
Net gains (losses) on investment securities	105	(61)
Net gains (losses) on financial instruments held under fair value option	23	(29)
Net gains (losses) on derivatives and hedging activities	(108)	55
Net gains (losses) on debt extinguishments	(10)	—
Other, net	55	41
Total non-interest income (loss)	63	4
Non-interest expense		
Compensation and benefits	180	170
Other operating expenses	107	93
Federal Housing Finance Agency	18	16
Office of Finance	15	15
Other	14	18
Total non-interest expense	334	312
Net income before assessments	1,002	955
Affordable Housing Program assessments	102	97
Net income	$ 900	$ 858

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)	2019	2018
Net income	$ 900	$ 858
Other comprehensive income		
Net unrealized gains (losses) on available-for-sale securities	230	17
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	19	17
Net unrealized gains (losses) relating to hedging activities	(70)	136
Pension and postretirement benefits	6	1
Total other comprehensive income (loss)	185	171
Comprehensive income	$ 1,085	$ 1,029

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, 2019 AND 2018
(Unaudited)

	Capital Stock - Putable			
	Class B		Class A	
(dollars and shares in millions)	Shares	Par Value	Shares	Par Value
Balance, December 31, 2017	374	$ 37,422	2	$ 235
Adjustment for cumulative effect of accounting change	—	—	—	—
Comprehensive income (loss)	—	—	—	—
Proceeds from issuance of capital stock	109	10,948	—	—
Repurchases/redemptions of capital stock	(110)	(10,982)	(2)	(237)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(1)	(99)	—	(39)
Transfers between Class B and Class A shares	(2)	(207)	2	207
Dividends on capital stock				
Cash	—	—	—	—
Stock	—	37	—	—
Balance, March 31, 2018	370	$ 37,119	2	$ 166
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		
376	$ 37,657	$ 14,549	$ 3,550	$ 18,099	$ 724	$ 56,480
—	—	5	—	5	(5)	—
—	—	686	172	858	171	1,029
109	10,948	—	—	—	—	10,948
(112)	(11,219)	—	—	—	—	(11,219)
(1)	(138)	—	—	—	—	(138)
—	—	—	—	—	—	—
—	—	(462)	—	(462)	—	(462)
—	37	(37)	—	(37)	—	—
372	$ 37,285	$ 14,741	$ 3,722	$ 18,463	$ 890	$ 56,638
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)	2019	2018
Operating activities		
Net income	$ 900	$ 858
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	52	93
Net change in derivatives and hedging activities	(1,684)	1,025
Net other-than-temporary impairment losses	2	2
Net change in fair value adjustments on trading securities	(94)	53
Net change in fair value adjustments on financial instruments held under fair value option	(23)	29
Other adjustments	29	4
Net change in		
Trading securities	(602)	9
Accrued interest receivable	(239)	(182)
Other assets	76	46
Accrued interest payable	196	76
Other liabilities	(59)	(69)
Total adjustments	(2,346)	1,086
Net cash provided by (used in) operating activities	(1,446)	1,944
Investing activities		
Net change in		
Interest-bearing deposits	7,085	(1,429)
Securities purchased under agreements to resell	(6,330)	10,554
Federal funds sold	(21,141)	(27,799)
Trading securities		
Net decrease (increase) in short-term	(3,024)	(715)
Proceeds from long-term	3,726	818
Purchases of long-term	(12,997)	(3,904)
Available-for-sale securities		
Net decrease (increase) in short-term	1,400	400
Proceeds from long-term	3,832	2,374
Purchases of long-term	(6,898)	(1,369)
Held-to-maturity securities		
Net decrease (increase) in short-term	447	885
Proceeds from long-term	4,372	4,217
Purchases of long-term	(2,464)	(7,061)
Advances		
Repaid	2,423,023	3,222,752
Originated	(2,364,379)	(3,189,619)
Mortgage loans held for portfolio		
Principal collected	1,402	1,516
Purchases	(2,967)	(2,638)
Other investing activities	(9)	—
Net cash provided by (used in) investing activities	25,078	8,982

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

	Three Months Ended March 31,	
(dollars in millions)	2019	2018
Financing activities		
Net change in deposits and pass-through reserves, and other financing activities	$ 558	$ 727
Net proceeds (payments) on derivative contracts with financing element	(74)	36
Net proceeds from issuance of consolidated obligations		
Discount notes	1,787,253	1,783,715
Bonds	129,520	130,643
Payments for maturing and retiring consolidated obligations		
Discount notes	(1,806,335)	(1,786,211)
Bonds	(131,225)	(143,415)
Proceeds from issuance of capital stock	8,893	10,948
Payments for repurchases/redemptions of capital stock	(11,592)	(11,219)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(86)	(173)
Cash dividends paid	(527)	(462)
Net cash provided by (used in) financing activities	(23,615)	(15,411)
Net increase (decrease) in cash and due from banks	17	(4,485)
Cash and due from banks at beginning of the period	522	7,175
Cash and due from banks at end of the period	$ 539	$ 2,690
Supplemental disclosures		
Interest paid	$ 6,057	$ 4,006
Affordable Housing Program payments, net	$ 78	$ 74
Transfer of held-to-maturity securities to available-for-sale securities with the adoption of ASU 2017-12	$ 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" and "MPF" 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, 2018. 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, 2019.

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. The more significant transactions between the FHLBanks are:

1. *Transfers of Direct Liability on Consolidated Bonds between FHLBanks.* These transfers occur when the primary obligation under consolidated bonds issued on behalf of one FHLBank is transferred to and assumed by another FHLBank. The transferring FHLBank treats the transfer as a debt extinguishment because it is released from being the primary obligor when the Office of Finance records the transfer, pursuant to its duties under applicable regulations. The assuming FHLBank then becomes the primary obligor while the transferring FHLBank has a contingent liability because it still has joint and several liability with respect to repaying the transferred consolidated bonds.

   The FHLBank assuming the consolidated bond liability initially records the consolidated bond at fair value, which represents the amount paid to the assuming FHLBank by the transferring FHLBank to assume the debt. A premium or discount exists for the amount paid above or below face value. Because these transfers represent inter-company transfers under combination accounting principles, an inter-company elimination is made for any gain or loss on the transfer. As a result, the subsequent amortization of premium or discount, amortization of concession fees, and recognition of hedging-related adjustments in the combined financial statements represent those of the transferring FHLBank.

2. *Purchases of Consolidated Bonds.* These purchases occur when consolidated bonds issued on behalf of one FHLBank are purchased by another FHLBank in the open market. All purchase transactions occur at market prices with third parties and the purchasing FHLBanks treat these consolidated bonds as investments. Under combination accounting principles, the investment and the consolidated bonds, and related contractual interest income and expense, are eliminated in combination.

No other transactions among the FHLBanks had a material effect on operating results. (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.)

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 other-than-temporary impairments for investment securities, fair value estimates, derivative hedging relationships, amortization of premiums and accretion of discounts on investment securities and purchased mortgage loans, and calculation of allowance for credit losses for each identified portfolio segment of financing receivables. Actual results could differ from these estimates significantly.

Fair Value. The fair value amounts, recorded on the Combined Statement of Condition and in the footnotes 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. Although an FHLBank uses its best judgment in estimating the fair value of these financial instruments, there are inherent limitations in any valuation technique. Therefore, these fair values may not be indicative of the amounts that would have been realized in market transactions at the reporting dates. (See *Note 15 - Fair Value* for more information.)

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 10 - Derivatives and Hedging Activities* for additional information regarding these agreements.)

At March 31, 2019 and December 31, 2018, the FHLBanks had $51,655 million and $45,325 million in securities purchased under agreements to resell. Based on the fair value of the related collateral held, the 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, 2019 or December 31, 2018.

Investment Securities

Available-for-Sale. Securities that are not classified as held-to-maturity (HTM) or trading are classified as available-for-sale (AFS) and are carried at fair value. Generally, the FHLBanks record changes in the fair value of these securities in other comprehensive income (loss) (OCI) as net unrealized gains (losses) on available-for-sale securities. Beginning January 1, 2019, the FHLBanks adopted new hedge accounting guidance, which, among other things, impacts the presentation of gains (losses) on derivatives and hedging activities for qualifying hedges, including fair value and cash flow hedges of AFS securities. For AFS securities in hedge relationships that qualify as fair value hedges, the FHLBanks record the portion of the change in the fair value of the investment related to the risk being hedged in interest income on AFS securities together with the related change in the fair value of the derivative, and record the remainder of the change in the fair value of the investment in OCI as net unrealized gains (losses) on available-for-sale securities. For AFS securities in hedge relationships that qualify as cash flow hedges, the FHLBanks record the entire change in the fair value of the derivative related to the risk being hedged in OCI as net unrealized gains (losses) relating to hedging activities.

Prior to January 1, 2019, for AFS securities in hedge relationships that qualify as a fair value hedge, the FHLBanks recorded the portion of the change in the fair value of the investment related to the risk being hedged in non-interest income as net gains (losses) on derivatives and hedging activities together with the related change in the fair value of the derivative, and recorded the remainder of the change in the fair value of the investment in OCI as net unrealized gains (losses) on available-for-sale securities. For AFS securities in hedge relationships that qualify as a cash flow hedge, the FHLBanks recorded the effective portion of the change in the fair value of the derivative related to the risk being hedged in OCI as net unrealized gains (losses) relating to hedging activities. The ineffective portion was recorded in non-interest income and presented as net gains (losses) on derivatives and hedging activities.

Advances

If a new advance qualifies as a modification of an existing advance, any prepayment fee, net of hedging adjustments, is deferred, recorded in the basis of the modified advance, and amortized using a level-yield methodology over the life of the modified advance to advance interest income. If the modified advance is hedged and meets hedge accounting requirements, the modified advance is marked to fair value, depending on the risk being hedged, and subsequent fair value changes that are attributable to the hedged risk are recorded in interest income on advances effective January 1, 2019. Prior to January 1, 2019, subsequent fair value changes were recorded in non-interest income.

Derivatives and Hedging Activities

Accounting for Fair Value or Cash Flow Hedges. If hedging relationships meet certain criteria, including, but not limited to, formal documentation of the hedging relationship and an expectation to be highly effective, they qualify for fair value or cash flow hedge accounting. For cash flow hedges, the FHLBanks measure effectiveness using the hypothetical derivative method, which compares the cumulative change in fair value of the actual derivative designated as the hedging instrument to the cumulative change in fair value of a hypothetical derivative having terms that identically match the critical terms of the hedged forecasted transaction.

Two approaches to hedge accounting include:

- *Long-haul hedge accounting.* The application of long-haul hedge accounting requires an FHLBank to assess (both at the hedge's inception and at least quarterly) whether the derivatives that are used in hedging transactions have been highly effective in offsetting changes in the fair value or cash flows of hedged items or forecasted transactions attributable to the hedged risk and whether those derivatives may be expected to remain highly effective in future periods.

- *Short-cut hedge accounting*. Transactions that meet certain criteria qualify for the short-cut method of hedge accounting in which an assumption can be made that the change in fair value of a hedged item, due to changes in the benchmark rate, exactly offsets the change in fair value of the related derivative. Under the short-cut method, the entire change in fair value of the interest-rate swap is considered to be highly effective at achieving offsetting changes in fair values or cash flows of the hedged asset or liability.

Derivatives are typically executed at the same time as the hedged item, and each FHLBank designates the hedged item in a qualifying hedge relationship at the trade date. In many hedging relationships, an FHLBank may designate the hedging relationship upon its commitment to disburse an advance or trade a consolidated obligation in which settlement occurs within the shortest period of time possible for the type of instrument based on market settlement conventions. An FHLBank then records the changes in fair value of the derivative and the hedged item beginning on the trade date.

Beginning January 1, 2019, the FHLBanks adopted new hedge accounting guidance, which, among other things, impacts the presentation of gains (losses) on derivatives and hedging activities for qualifying hedges. Changes in the fair value of a derivative that is designated and qualifies as a fair value hedge, along with changes in the fair value of the hedged asset or liability that are attributable to the hedged risk, are recorded in net interest income in the same line as the earnings effect of the hedged item. Changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge are recorded in OCI. These amounts remain in accumulated other comprehensive income (AOCI) until earnings are affected by the variability of the cash flows of the hedged transaction, at which time these amounts are reclassified from AOCI to the same income statement line as the earnings effect of the hedged item. Net gains (losses) on derivatives and hedging activities for qualifying hedges recorded in net interest income include unrealized and realized gains (losses), which include net interest settlements.

Prior to January 1, 2019, for both fair value and cash flow hedges, any hedge ineffectiveness (which represented the amount by which the change in the fair value of the derivative differed from the change in the fair value of the hedged item or the variability in the cash flows of the forecasted transaction attributable to the hedged risk) was recorded in non-interest income as net gains (losses) on derivatives and hedging activities. Additionally, changes in the fair value of a derivative that was designated and qualifies as a cash flow hedge, to the extent that the hedge was highly effective, were recorded in OCI. These amounts remained in AOCI until earnings were affected by the variability of the cash flows of the hedged transaction, at which time these amounts are reclassified from AOCI to the same income statement line as the earnings effect of the hedged item.

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
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 becomes effective for the FHLBanks for the interim and annual periods beginning on January 1, 2020. Early adoption is permitted.	The FHLBanks do not intend to adopt this guidance early. 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 modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans to improve disclosure effectiveness.	This guidance becomes effective for the FHLBanks for the annual period ended December 31, 2020, and the annual periods thereafter. Early adoption is permitted.	The FHLBanks do not intend to adopt this guidance early. 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.
Changes to the Disclosure Requirements for Fair Value Measurement (ASU 2018-13)	This guidance modifies the disclosure requirements for fair value measurements to improve disclosure effectiveness.	This guidance becomes effective for the FHLBanks for the interim and annual periods beginning on January 1, 2020. Early adoption is permitted.	The FHLBanks do not intend to adopt this guidance early. 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.
Measurement of Credit Losses on Financial Instruments, as amended (ASU 2016-13)	The guidance replaces the current incurred loss 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.	This guidance becomes effective for the FHLBanks for the interim and annual periods beginning on January 1, 2020. Early adoption is permitted.	The FHLBanks do not intend to adopt this guidance early. Based on the FHLBanks' preliminary assessments, this guidance is expected to have no effect on advances, U.S. obligations, or GSE investments, and an immaterial effect on their remaining investment portfolio given the specific terms, issuer guarantees, and collateralized/ securitized nature of these instruments. The FHLBanks are in the process of assessing the effect of this guidance on their mortgage loans on the combined financial statements. However, the ultimate effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows will depend upon the composition of financial assets held by the individual FHLBanks at the adoption date, as well as the economic conditions and forecasts at that time.

Recently Adopted Accounting Guidance:

ASU	Description	Effective Date	Effect on the Combined Financial Statements or Other Significant Matters
Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes (ASU 2018-16)	This guidance permits the OIS rate based on SOFR as an eligible U.S. benchmark interest rate for hedge accounting purposes, to facilitate the London Interbank Offered Rate (LIBOR) to SOFR transition.	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2019, concurrent with the adoption of ASU 2017-12.	This guidance was adopted prospectively for qualifying new or re-designated hedging relationships entered into on or after January 1, 2019. However, 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.
Targeted Improvements to Accounting for Hedging Activities, as amended (ASU 2017-12)	This guidance amends the accounting for derivatives and hedging activities to better portray the economic results of an entity's risk management activities in its financial statements.	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2019.	This guidance was applied to all existing hedging relationships as of January 1, 2019. Upon adoption, the FHLBanks modified the presentation of fair value and cash flow hedge results on the FHLBanks' Combined Statements of Income and Comprehensive Income, as well as relevant disclosures, prospectively. The FHLBanks also transferred $1.6 billion from HTM securities to AFS securities upon adoption. 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.
Premium Amortization on Purchased Callable Debt Securities (ASU 2017-08)	This guidance shortens the amortization period for certain purchased callable debt securities held at a premium by requiring the premium to be amortized to the earliest call date rather than contractual maturity. This guidance does not require an accounting change for securities held at a discount, which continue to be amortized to their contractual maturity.	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2019.	This guidance was adopted on a modified retrospective basis as of January 1, 2019. However, 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.
Leases, as amended (ASU 2016-02)	This guidance amends the accounting for lease arrangements. In particular, it requires a lessee of operating and financing leases to recognize on the statement of condition, a right-of-use asset and a lease liability for leases.	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2019.	This guidance was adopted on a modified retrospective basis as of January 1, 2019. Upon adoption, the FHLBanks recognized right-of-use assets of $198 million and lease liabilities of $215 million on their existing leases. However, 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 - Trading Securities

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

Fair Value	March 31, 2019	December 31, 2018
Non-mortgage-backed securities		
Certificates of deposit	$ 1,210	$ —
U.S. obligations	24,526	11,991
GSE and Tennessee Valley Authority obligations	2,414	2,671
Other	278	275
Total non-mortgage-backed securities	28,428	14,937
Mortgage-backed securities		
U.S. obligations single-family MBS	12	12
GSE single-family MBS	73	76
GSE multifamily MBS	1,402	1,424
Total mortgage-backed securities	1,487	1,512
Total	$ 29,915	$ 16,449

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

	Three Months Ended March 31,	
	2019	2018
Net unrealized gains (losses) on trading securities held at period-end	$ 93	$ (61)
Net unrealized and realized gains (losses) on trading securities sold/matured during the period	12	—
Net gains (losses) on trading securities	$ 105	$ (61)

Note 4 - Available-for-Sale Securities

Table 4.1 - Available-for-Sale (AFS) Securities by Major Security Type
(dollars in millions)

	March 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	$ 950	$ —	$ —	$ —	$ 950
U.S. obligations	5,869	—	34	(2)	5,901
GSE and Tennessee Valley Authority obligations	12,971	—	193	(39)	13,125
State or local housing agency obligations	1,140	—	5	(13)	1,132
Federal Family Education Loan Program ABS	3,486	—	183	—	3,669
Other	738	—	11	(14)	735
Total non-mortgage-backed securities	25,154	—	426	(68)	25,512
Mortgage-backed securities					
U.S. obligations single-family MBS	5,300	—	36	(5)	5,331
U.S. obligations multifamily MBS	353	—	—	(6)	347
GSE single-family MBS	7,100	—	22	(60)	7,062
GSE multifamily MBS	45,502	—	292	(96)	45,698
Private-label residential MBS	3,875	(16)	454	(1)	4,312
Total mortgage-backed securities	62,130	(16)	804	(168)	62,750
Total	$ 87,284	$ (16)	$ 1,230	$ (236)	$ 88,262

	December 31, 2018									
		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	$	2,350	$	—	$	—	$	—	$	2,350
U.S. obligations		3,495		—		27		(3)		3,519
GSE and Tennessee Valley Authority obligations		13,182		—		161		(36)		13,307
State or local housing agency obligations		1,142		—		2		(19)		1,125
Federal Family Education Loan Program ABS		3,578		—		203		—		3,781
Other		854		—		12		(14)		852
Total non-mortgage-backed securities		24,601		—		405		(72)		24,934
Mortgage-backed securities										
U.S. obligations single-family MBS		5,412		—		40		(5)		5,447
U.S. obligations multifamily MBS		368		—		—		(7)		361
GSE single-family MBS		7,451		—		24		(98)		7,377
GSE multifamily MBS		40,589		—		181		(157)		40,613
Private-label residential MBS		4,041		(20)		455		(3)		4,473
Total mortgage-backed securities		57,861		(20)		700		(270)		58,271
Total	$	82,462	$	(20)	$	1,105	$	(342)	$	83,205

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(1) Amortized cost of AFS securities includes adjustments made to the cost basis of an investment for accretion, amortization, OTTI recognized in earnings, and/or fair value hedge accounting adjustments.

(2) OTTI recognized in AOCI does not include $446 million and $445 million in subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at March 31, 2019 and December 31, 2018, which is included in net non-credit portion of OTTI losses on AFS securities in *Note 14 - Accumulated Other Comprehensive Income (Loss)*.

(3) Gross unrealized gains and gross unrealized losses on AFS securities include $446 million and $445 million in subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at March 31, 2019 and December 31, 2018, which is not included in net unrealized gains (losses) on AFS securities in *Note 14 - Accumulated Other Comprehensive Income (Loss)*.

Table 4.2 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 4.2 - AFS Securities in a Continuous Unrealized Loss Position
(dollars in millions)

	March 31, 2019											
	Less than 12 Months				12 months or more				Total			
		Fair Value		Unrealized Losses		Fair Value		Unrealized Losses		Fair Value		Unrealized Losses(1)
Non-mortgage-backed securities												
U.S. obligations	$	1,181	$	(1)	$	303	$	(1)	$	1,484	$	(2)
GSE and Tennessee Valley Authority obligations		131		(1)		572		(38)		703		(39)
State or local housing agency obligations		150		(2)		616		(11)		766		(13)
Other		—		—		411		(14)		411		(14)
Total non-mortgage-backed securities		1,462		(4)		1,902		(64)		3,364		(68)
Mortgage-backed securities												
U.S. obligations single-family MBS		785		(2)		55		(3)		840		(5)
U.S. obligations multifamily MBS		—		—		347		(6)		347		(6)
GSE single-family MBS		678		(1)		3,629		(59)		4,307		(60)
GSE multifamily MBS		14,470		(67)		4,418		(29)		18,888		(96)
Private-label residential MBS		153		(2)		233		(15)		386		(17)
Total mortgage-backed securities		16,086		(72)		8,682		(112)		24,768		(184)
Total	$	17,548	$	(76)	$	10,584	$	(176)	$	28,132	$	(252)

	December 31, 2018					
	Less than 12 Months		12 months or more		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses(1)
Non-mortgage-backed securities						
U.S. obligations	$ 592	$ (1)	$ 314	$ (2)	$ 906	$ (3)
GSE and Tennessee Valley Authority obligations	298	(2)	662	(34)	960	(36)
State or local housing agency obligations	243	(2)	750	(17)	993	(19)
Other	—	—	405	(14)	405	(14)
Total non-mortgage-backed securities	1,133	(5)	2,131	(67)	3,264	(72)
Mortgage-backed securities						
U.S. obligations single-family MBS	739	(1)	58	(4)	797	(5)
U.S. obligations multifamily MBS	—	—	361	(7)	361	(7)
GSE single-family MBS	668	(2)	3,812	(96)	4,480	(98)
GSE multifamily MBS	20,258	(146)	1,329	(11)	21,587	(157)
Private-label residential MBS	214	(3)	364	(20)	578	(23)
Total mortgage-backed securities	21,879	(152)	5,924	(138)	27,803	(290)
Total	$ 23,012	$ (157)	$ 8,055	$ (205)	$ 31,067	$ (362)

(1) Total unrealized losses in Table 4.2 will not agree to total gross unrealized losses in Table 4.1. Total unrealized losses in Table 4.2 includes non-credit-related OTTI recognized in AOCI.

See *Note 6 - Other-than-Temporary Impairment Analysis* for analysis related to OTTI as well as additional information on AFS securities in unrealized loss positions that are not considered to be other-than-temporarily impaired.

Table 4.3 - AFS Securities by Contractual Maturity
(dollars in millions)

	March 31, 2019		December 31, 2018	
Year of Maturity	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Non-mortgage-backed securities				
Due in one year or less	$ 2,107	$ 2,108	$ 3,715	$ 3,715
Due after one year through five years	8,725	8,772	6,141	6,184
Due after five years through ten years	8,447	8,560	8,734	8,815
Due after ten years	2,389	2,403	2,433	2,439
Federal Family Education Loan Program ABS(1)	3,486	3,669	3,578	3,781
Total non-mortgage-backed securities	25,154	25,512	24,601	24,934
Mortgage-backed securities(1)	62,130	62,750	57,861	58,271
Total	$ 87,284	$ 88,262	$ 82,462	$ 83,205

(1) Federal Family Education Loan Program ABS and 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.

Table 4.4 - Proceeds from Sale and Gross Gains and Losses on AFS Securities
(dollars in millions)

	Three Months Ended March 31,	
	2019	2018
Proceeds from sale of AFS securities	$ 411	$ —
Gross gains on sale of AFS securities	$ —	$ —
Gross losses on sale of AFS securities	—	—
Net realized gains/(losses) from sale of AFS securities	$ —	$ —

Note 5 - Held-to-Maturity Securities

Table 5.1 - HTM Securities by Major Security Type
(dollars in millions)

	March 31, 2019					
	Amortized Cost(1)	OTTI Recognized in AOCI(2)	Carrying Value(2)	Gross Unrecognized Holding Gains(3)	Gross Unrecognized Holding Losses(3)	Fair Value
Non-mortgage-backed securities						
Certificates of deposit	$ 300	$ —	$ 300	$ —	$ —	$ 300
U.S. obligations	749	—	749	11	—	760
GSE and Tennessee Valley Authority obligations	3,559	—	3,559	61	(2)	3,618
State or local housing agency obligations	2,038	—	2,038	2	(38)	2,002
Total non-mortgage-backed securities	6,646	—	6,646	74	(40)	6,680
Mortgage-backed securities						
U.S. obligations single-family MBS	6,802	—	6,802	15	(35)	6,782
U.S. obligations multifamily MBS	1	—	1	—	—	1
GSE single-family MBS	29,534	—	29,534	168	(218)	29,484
GSE multifamily MBS	41,230	—	41,230	138	(101)	41,267
Private-label residential MBS	2,365	(244)	2,121	478	(12)	2,587
Private-label manufactured housing loan ABS	33	—	33	1	—	34
Private-label home equity loan ABS	104	(10)	94	29	—	123
Total mortgage-backed securities	80,069	(254)	79,815	829	(366)	80,278
Total	$ 86,715	$ (254)	$ 86,461	$ 903	$ (406)	$ 86,958

	December 31, 2018					
	Amortized Cost(1)	OTTI Recognized in AOCI(2)	Carrying Value(2)	Gross Unrecognized Holding Gains(3)	Gross Unrecognized Holding Losses(3)	Fair Value
Non-mortgage-backed securities						
Certificates of deposit	$ 700	$ —	$ 700	$ —	$ —	$ 700
U.S. obligations	1,349	—	1,349	17	(1)	1,365
GSE and Tennessee Valley Authority obligations	3,060	—	3,060	54	(3)	3,111
State or local housing agency obligations	2,096	—	2,096	1	(42)	2,055
Total non-mortgage-backed securities	7,205	—	7,205	72	(46)	7,231
Mortgage-backed securities						
U.S. obligations single-family MBS	7,069	—	7,069	18	(55)	7,032
U.S. obligations multifamily MBS	1	—	1	—	—	1
GSE single-family MBS	30,712	—	30,712	160	(302)	30,570
GSE multifamily MBS	43,046	—	43,046	85	(195)	42,936
Private-label residential MBS	2,493	(257)	2,236	493	(16)	2,713
Private-label manufactured housing loan ABS	36	—	36	1	—	37
Private-label home equity loan ABS	119	(11)	108	31	(1)	138
Total mortgage-backed securities	83,476	(268)	83,208	788	(569)	83,427
Total	$ 90,681	$ (268)	$ 90,413	$ 860	$ (615)	$ 90,658

(1) Amortized cost of HTM securities includes adjustments made to the cost basis of an investment for accretion, amortization, and/or OTTI recognized in earnings.
(2) Carrying value of HTM securities represents amortized cost after adjustment for the non-credit-related OTTI recognized in AOCI.
(3) Gross unrecognized holding gains (losses) represent the difference between fair value and carrying value.

Table 5.2 presents the HTM securities with unrealized losses, which are aggregated by major security type and length of time that individual securities have been in a continuous unrealized loss position.

Table 5.2 - HTM Securities in a Continuous Unrealized Loss Position
(dollars in millions)

	March 31, 2019					
	Less than 12 Months		12 months or more		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses(1)
Non-mortgage-backed securities						
GSE and Tennessee Valley Authority obligations	$ 1,204	$ (2)	$ 100	$ —	$ 1,304	$ (2)
State or local housing agency obligations	162	—	689	(38)	851	(38)
Total non-mortgage-backed securities	1,366	(2)	789	(38)	2,155	(40)
Mortgage-backed securities						
U.S. obligations single-family MBS	1,493	(7)	2,644	(28)	4,137	(35)
GSE single-family MBS	5,649	(20)	11,001	(198)	16,650	(218)
GSE multifamily MBS	19,395	(72)	7,393	(29)	26,788	(101)
Private-label residential MBS	345	(3)	989	(123)	1,334	(126)
Total mortgage-backed securities	26,882	(102)	22,027	(378)	48,909	(480)
Total	$ 28,248	$ (104)	$ 22,816	$ (416)	$ 51,064	$ (520)

	December 31, 2018					
	Less than 12 Months		12 months or more		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses(1)
Non-mortgage-backed securities						
U.S. obligations	$ 495	$ —	$ 23	$ (1)	$ 518	$ (1)
GSE and Tennessee Valley Authority obligations	1,304	(2)	99	(1)	1,403	(3)
State or local housing agency obligations	361	(1)	718	(41)	1,079	(42)
Total non-mortgage-backed securities	2,160	(3)	840	(43)	3,000	(46)
Mortgage-backed securities						
U.S. obligations single-family MBS	1,230	(3)	2,505	(52)	3,735	(55)
GSE single-family MBS	7,257	(27)	9,930	(275)	17,187	(302)
GSE multifamily MBS	23,316	(84)	7,753	(111)	31,069	(195)
Private-label residential MBS	450	(4)	1,019	(132)	1,469	(136)
Private-label home equity loan ABS	3	—	25	(1)	28	(1)
Total mortgage-backed securities	32,256	(118)	21,232	(571)	53,488	(689)
Total	$ 34,416	$ (121)	$ 22,072	$ (614)	$ 56,488	$ (735)

(1) Total unrealized losses in Table 5.2 will not agree to total gross unrecognized holding losses in Table 5.1. Total unrealized losses in Table 5.2 includes non-credit-related OTTI recognized in AOCI and gross unrecognized holding gains on previously other-than-temporarily impaired securities.

See *Note 6 - Other-than-Temporary Impairment Analysis* for analysis related to OTTI as well as additional information on HTM securities in unrealized loss positions that are not considered to be other-than-temporarily impaired.

Table 5.3 - HTM Securities by Contractual Maturity
(dollars in millions)

	March 31, 2019			December 31, 2018		
Year of Maturity	**Amortized Cost**	**Carrying Value(1)**	**Fair Value**	**Amortized Cost**	**Carrying Value(1)**	**Fair Value**
Non-mortgage-backed securities						
Due in one year or less	$ 1,031	$ 1,031	$ 1,032	$ 1,610	$ 1,610	$ 1,610
Due after one year through five years	2,480	2,480	2,481	2,244	2,244	2,246
Due after five years through ten years	706	706	734	853	853	875
Due after ten years	2,429	2,429	2,433	2,498	2,498	2,500
Total non-mortgage-backed securities	6,646	6,646	6,680	7,205	7,205	7,231
Mortgage-backed securities(2)	80,069	79,815	80,278	83,476	83,208	83,427
Total	$ 86,715	$ 86,461	$ 86,958	$ 90,681	$ 90,413	$ 90,658

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(1) Carrying value of HTM securities represents amortized cost after adjustment for non-credit-related OTTI recognized in AOCI.
(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.

Realized Gains and Losses

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

	Three Months Ended March 31,	
	2019	**2018**
Proceeds from sale of HTM securities	$ —	$ 8
Carrying value of HTM securities sold	—	8
Net realized gains (losses) from sale of HTM securities	$ —	$ —

Note 6 - Other-than-Temporary Impairment Analysis

Each FHLBank evaluates its individual AFS and HTM investment securities holdings in an unrealized loss position for OTTI on a quarterly basis. A description of the OTTI evaluation process is disclosed in *Note 1 - Summary of Significant Accounting Policies*, page F-15, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018. The FHLBanks' uniform framework is disclosed in *Note 7 - Other-than-Temporary Impairment Analysis*, pages F-31 to F-32, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018.

Certain Private-label MBS

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.

The FHLBanks' system-wide governance committee developed a short-term housing price forecast with geographically projected changes ranging from a decrease of 6.0% to an increase of 14.0% over the twelve-month period beginning January 1, 2019. For the vast majority of markets, the projected short-term housing price changes range from an increase of 2.0% to an increase of 6.0%. Thereafter, a unique path is projected for each geographic area based on an internally developed framework derived from historical data.

Table 6.1 presents the March 31, 2019 balance of the total HTM and AFS MBS with OTTI charges during the life of the security, which represents securities other-than-temporarily impaired prior to and at March 31, 2019, based on each individual FHLBank's impairment analyses of its investment portfolio.

Table 6.1 - Total MBS Other-than-Temporarily Impaired during the Life of the Security at March 31, 2019(1)
(dollars in millions)

	Held-to-Maturity Securities				Available-for-Sale Securities		
	Unpaid Principal Balance	Amortized Cost	Carrying Value	Fair Value	Unpaid Principal Balance	Amortized Cost	Fair Value
Private-label residential MBS(2)							
Prime	$ 461	$ 370	$ 277	$ 409	$ 1,252	$ 1,026	$ 1,137
Alt-A	837	613	489	721	3,564	2,845	3,171
Subprime	300	144	117	221	—	—	—
Total private-label residential MBS	1,598	1,127	883	1,351	4,816	3,871	4,308
Private-label home equity loan ABS(2)							
Subprime	65	47	37	64	—	—	—
Total private-label home equity loan ABS	65	47	37	64	—	—	—
Total	$ 1,663	$ 1,174	$ 920	$ 1,415	$ 4,816	$ 3,871	$ 4,308

(1) Table 6.1 does not include all HTM and AFS securities that are in an unrealized loss position as of March 31, 2019. This table includes only HTM and AFS MBS with OTTI charges during the life of the security.
(2) The FHLBanks classify securities as prime, Alt-A, and subprime based on the originator's classification at the time of origination or based on classification by a nationally recognized statistical rating organization upon issuance of the securities.

Table 6.2 - Rollforward of the Amounts Related to Credit Losses Recognized into Earnings
(dollars in millions)

	Three Months Ended March 31,	
	2019	2018
Balance, at beginning of period	$ 2,495	$ 2,749
Additions		
Additional OTTI credit losses for securities upon which an OTTI charge was previously recognized	2	2
Reductions		
Increases in cash flows expected to be collected (accreted as interest income over the remaining lives of the applicable securities)	(50)	(58)
Balance, at end of period	$ 2,447	$ 2,693

All other AFS and HTM Investment Securities

At March 31, 2019, the FHLBanks held certain other AFS and HTM securities in unrealized loss positions. These unrealized losses are due primarily to interest rate volatility and/or illiquidity. These losses are considered temporary as each FHLBank expects to recover the entire amortized cost basis on its remaining AFS and HTM securities in unrealized loss positions 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. As a result, each FHLBank does not consider these other AFS and HTM investment securities to be other-than-temporarily impaired at March 31, 2019.

Note 7 - 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 LIBOR or other specified indices, or consolidated obligation yields.

Table 7.1 - Advances by Redemption Term
(dollars in millions)

	March 31, 2019		December 31, 2018	
Redemption Term	**Amount**	**Weighted-Average Interest Rate**	**Amount**	**Weighted-Average Interest Rate**
Overdrawn demand and overnight deposit accounts	$ 6	2.71%	$ 52	2.70%
Due in 1 year or less	356,921	2.55%	407,861	2.52%
Due after 1 year through 2 years	123,493	2.60%	121,416	2.52%
Due after 2 years through 3 years	57,593	2.66%	68,888	2.61%
Due after 3 years through 4 years	29,934	2.63%	35,649	2.57%
Due after 4 years through 5 years	39,144	2.75%	33,011	2.72%
Thereafter	63,765	2.70%	62,624	2.67%
Total principal amount	670,856	2.60%	729,501	2.55%
Commitment fees	(1)		(1)	
Discounts on AHP advances	(27)		(28)	
Premiums	48		61	
Discounts	(56)		(44)	
Hedging adjustments	547		(681)	
Fair value option valuation adjustments	15		(41)	
Total	$ 671,382		$ 728,767	

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 or other specified indices. 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 7.2 - 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, 2019	December 31, 2018	March 31, 2019	December 31, 2018
Overdrawn demand and overnight deposit accounts	$ 6	$ 52	$ 6	$ 52
Due in 1 year or less	461,589	510,711	367,302	415,962
Due after 1 year through 2 years	84,239	89,542	129,360	126,864
Due after 2 years through 3 years	45,278	51,104	61,153	73,768
Due after 3 years through 4 years	22,825	23,137	30,573	35,884
Due after 4 years through 5 years	19,366	18,367	37,160	32,119
Thereafter	37,553	36,588	45,302	44,852
Total principal amount	$ 670,856	$ 729,501	$ 670,856	$ 729,501

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

	March 31, 2019	December 31, 2018
Total fixed-rate	$ 379,310	$ 412,348
Total variable-rate	291,546	317,153
Total principal amount	$ 670,856	$ 729,501

Credit Risk Exposure and Security Terms

The FHLBanks' potential credit risk from advances is concentrated in commercial banks. The FHLBanks' advances outstanding that were greater than or equal to $1.0 billion per borrower were $486.9 billion and $529.7 billion at March 31, 2019 and December 31, 2018. These advances were made to 104 and 113 borrowers (members and non-members), and represented 72.6% of total advances outstanding at both March 31, 2019 and December 31, 2018. (See *Note 9 - Allowance for Credit Losses* for information related to the FHLBanks' credit risk on advances and allowance methodology for credit losses.)

Note 8 - 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 8.1 - Mortgage Loans Held for Portfolio
(dollars in millions)

	March 31, 2019	December 31, 2018
Fixed-rate, long-term single-family mortgage loans	$ 57,893	$ 56,256
Fixed-rate, medium-term(1) single-family mortgage loans	5,008	5,138
Total unpaid principal balance	62,901	61,394
Premiums	1,180	1,152
Discounts	(38)	(39)
Hedging adjustments	48	42
Total mortgage loans held for portfolio	$ 64,091	$ 62,549

(1) Medium-term is defined as a term of 15 years or less.

Table 8.2 - Mortgage Loans Held for Portfolio by Collateral/Guarantee Type
(dollars in millions)

	March 31, 2019	December 31, 2018
Conventional MPF/MPP mortgage loans	$ 59,427	$ 57,862
Government-guaranteed or -insured mortgage loans	3,474	3,532
Total unpaid principal balance	$ 62,901	$ 61,394

Note 9 - Allowance for Credit Losses

Each FHLBank has established an allowance methodology for its applicable portfolio segments:

- credit products (advances, letters of credit, and other extensions of credit to borrowers);
- government-guaranteed or -insured mortgage loans held for portfolio;
- conventional MPF loans held for portfolio and conventional MPP loans held for portfolio;
- term federal funds sold; and
- term securities purchased under agreements to resell.

See *Note 1 - Summary of Significant Accounting Policies and Note 10 - Allowance for Credit Losses* on pages F-18 to F-19 and pages F-35 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, 2018, for a description of allowance methodologies related to the FHLBanks' portfolio segments as well as the FHLBanks' policies for impairing financing receivables, placing them on non-accrual status, and charging them off when necessary.

Credit Products

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 credit products. At March 31, 2019 and December 31, 2018, each FHLBank had rights to collateral on a borrower-by-borrower basis with an estimated value equal to, or greater than, its outstanding extensions of credit.

Each FHLBank continues to evaluate and make changes to its collateral guidelines, as necessary, based on current market conditions. At March 31, 2019 and December 31, 2018, none of the FHLBanks had any credit products that were past due, on non-accrual status, or considered impaired. In addition, there were no troubled debt restructurings related to credit products at any FHLBank during the three months ended March 31, 2019 and 2018.

Based on the collateral held as security, each FHLBank management's credit extension and collateral policies and repayment history on credit products, no FHLBank has incurred any losses on its credit products. Accordingly, at March 31, 2019 and December 31, 2018, no FHLBank recorded any allowance for credit losses on these credit products, and no FHLBank recorded any liability to reflect an allowance for credit losses for off-balance sheet credit exposures. (See *Note 16 - Commitments and Contingencies* for additional information on the FHLBanks' off-balance sheet credit exposure.)

Government-Guaranteed or -Insured Mortgage Loans Held for Portfolio

An FHLBank invests 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, no FHLBank established an allowance for credit losses for its government-guaranteed or -insured mortgage loan portfolio at March 31, 2019 and December 31, 2018. 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.

Conventional MPF and Conventional MPP Mortgage Loans Held for Portfolio

Allowance for Credit Losses on Mortgage Loans. Each FHLBank has established an allowance for credit losses on its conventional mortgage loans held for portfolio. Table 9.1 presents a rollforward of the allowance for credit losses on mortgage loans for the three months ended March 31, 2019 and 2018.

Table 9.1 - Rollforward of Allowance for Credit Losses on Conventional MPF/MPP Mortgage Loans
(dollars in millions)

	Three Months Ended March 31, 2019	Three Months Ended March 31, 2018
Balance, at beginning of period	$ 15	$ 16
Charge-offs, net of recoveries	(1)	(1)
Provision (reversal) for credit losses	1	2
Balance, at end of period	$ 15	$ 17

Table 9.2 presents the recorded investment in mortgage loans by impairment methodology at March 31, 2019 and December 31, 2018. The recorded investment in a loan is the unpaid principal balance of the loan, adjusted for accrued interest, net deferred loan fees or costs, unamortized premiums or discounts, fair value hedge adjustments, and direct write-downs. The recorded investment is not net of any valuation allowance.

Table 9.2 - Allowance for Credit Losses and Recorded Investment by Impairment Methodology on Conventional MPF/MPP Mortgage Loans
(dollars in millions)

	March 31, 2019	December 31, 2018
Allowance for credit losses		
Individually evaluated for impairment	$ 7	$ 7
Collectively evaluated for impairment	8	8
Total allowance for credit losses	$ 15	$ 15
Recorded investment		
Individually evaluated for impairment	$ 208	$ 211
Collectively evaluated for impairment	60,648	59,024
Total recorded investment	$ 60,856	$ 59,235

Credit Quality Indicators. Key credit quality indicators for mortgage loans include the migration of past due loans, non-accrual loans, loans in process of foreclosure, and impaired loans. Table 9.3 presents the FHLBanks' key credit quality indicators for mortgage loans at March 31, 2019 and December 31, 2018.

Table 9.3 - Recorded Investment in Delinquent Mortgage Loans
(dollars in millions)

	March 31, 2019		
	Conventional MPF/MPP	Government-Guaranteed or -Insured(1)	Total
Past due 30-59 days	$ 383	$ 132	$ 515
Past due 60-89 days	82	36	118
Past due 90 days or more	135	59	194
Total past due mortgage loans	600	227	827
Total current mortgage loans	60,256	3,321	63,577
Total mortgage loans(2)	$ 60,856	$ 3,548	$ 64,404
Other delinquency statistics			
In process of foreclosure, included above(3)	$ 55	$ 20	$ 75
Serious delinquency rate(4)	0.23%	1.69%	0.31%
Past due 90 days or more and still accruing interest	$ 28	$ 59	$ 87
Loans on non-accrual status	$ 133	$ —	$ 133

	December 31, 2018		
	Conventional MPF/MPP	Government-Guaranteed or -Insured(1)	Total
Past due 30-59 days	$ 318	$ 134	$ 452
Past due 60-89 days	78	41	119
Past due 90 days or more	135	60	195
Total past due mortgage loans	531	235	766
Total current mortgage loans	58,704	3,372	62,076
Total mortgage loans(2)	$ 59,235	$ 3,607	$ 62,842
Other delinquency statistics			
In process of foreclosure, included above(3)	$ 59	$ 22	$ 81
Serious delinquency rate(4)	0.23%	1.69%	0.32%
Past due 90 days or more and still accruing interest	$ 30	$ 60	$ 90
Loans on non-accrual status	$ 134	$ —	$ 134

(1) Any losses incurred on these loans that are not recovered from the issuer or the guarantor are absorbed by the servicer.
(2) The difference between the recorded investment and the carrying value of total mortgage loans of $313 million and $293 million at March 31, 2019 and December 31, 2018, relates primarily to accrued interest. (See *Note 8 - Mortgage Loans* for details on the carrying values of total mortgage loans.)
(3) Includes loans where the decision of foreclosure or a similar alternative, such as pursuit of deed-in-lieu, has been reported. Loans in the process of foreclosure are included in past due or current loans depending on their delinquency status.
(4) 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 delinquent or loans that are in the process of foreclosure (including past due or current loans in the process of foreclosure).

Credit Enhancements. An FHLBank's allowance for credit losses considers the credit enhancements associated with conventional mortgage loans under the MPF Program and MPP. These credit enhancements apply after a homeowner's equity is exhausted. 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. The amount of credit enhancements estimated to protect an FHLBank against credit losses, within an FHLBank's risk tolerance, is determined through the use of a validated model. Any incurred losses that would be recovered from the credit enhancements are not reserved as part of an FHLBank's allowance for credit losses on mortgage loans. (See *Note 10 - Allowance for Credit Losses* on pages F-38 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, 2018, for additional information on credit enhancements for the Mortgage Partnership Finance Program and Mortgage Purchase Program.)

At March 31, 2019 and December 31, 2018, the amounts of First Loss Account remaining to cover the losses under the MPF program were $462 million and $454 million. This balance excludes amounts that may be recovered through the recapture of performance-based credit enhancement fees. The First Loss Account represents the first layer or portion of credit losses that each FHLBank participating in the MPF program (MPF FHLBank) absorbs with respect to its MPF loans after considering the borrower's equity, primary mortgage insurance, and recoverable credit enhancement fees. An FHLBank records credit enhancement fees paid to the participating financial institutions as a reduction to mortgage interest income.

At March 31, 2019 and December 31, 2018, the amounts of the Lender Risk Account remaining to cover future potential losses under the MPP were $392 million and $389 million. 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.

Troubled Debt Restructurings. A troubled debt restructuring is considered to have occurred when a concession is granted to a borrower for economic or legal reasons related to the borrower's financial difficulties and that concession would not have been considered otherwise. An FHLBank has granted a concession when it does not expect to collect all amounts due to the FHLBank under the original contract as a result of the restructuring. Loans that are discharged in Chapter 7 bankruptcy and have not been reaffirmed by the borrowers are also considered to be troubled debt restructurings, except in certain cases where supplemental mortgage insurance policies are held or where all contractual amounts due are still expected to be collected as a result of certain credit enhancements or government guarantees. (See *Note 10 - Allowance for Credit Losses* on page F-39 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, for additional information on trouble debt restructurings.)

Term Federal Funds Sold and Term Securities Purchased Under Agreements to Resell

Term federal funds sold and term securities purchased under agreements to resell are generally short-term, their recorded balance approximates fair value, and they are generally transacted with counterparties that are considered by an individual FHLBank to be of investment quality. FHLBank investments in term federal funds are evaluated for purposes of a reserve for credit losses only if the investment is not paid when due. All investments in term federal funds sold are unsecured and were repaid or expected to be repaid according to the contractual terms as of March 31, 2019 and December 31, 2018. Term securities purchased under agreements to resell are considered collateralized financing arrangements and effectively represent short-term loans. The terms of these loans are structured such that if the market value of the underlying securities decreases below the market value required as collateral, the counterparty must place an equivalent amount of additional securities as collateral or remit an equivalent amount of cash. If an agreement to resell is deemed to be impaired, the difference between the fair value of the collateral and the amortized cost of the agreement is charged to earnings. Based upon the collateral held as security, each FHLBank determined that no allowance for credit losses was needed for its term securities purchased under agreements to resell at March 31, 2019 and December 31, 2018.

Note 10 - 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-40 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, 2018, 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 10.1 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 10.1 - Fair Value of Derivative Instruments
(dollars in millions)

	March 31, 2019			December 31, 2018		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as hedging instruments						
Interest-rate swaps	$ 372,558	$ 934	$ 1,364	$ 378,352	$ 873	$ 1,680
Derivatives not designated as hedging instruments						
Interest-rate swaps	157,085	385	358	143,326	364	354
Interest-rate swaptions	4,905	16	—	4,335	18	—
Interest-rate caps or floors	14,553	5	2	15,481	11	4
Interest-rate futures or forwards	658	—	3	338	—	4
Mortgage delivery commitments	1,404	6	1	992	4	1
Other	807	13	11	1,315	6	11
Total derivatives not designated as hedging instruments	179,412	425	375	165,787	403	374
Total derivatives before netting and collateral adjustments	$ 551,970	$ 1,359	$ 1,739	$ 544,139	$ 1,276	$ 2,054
Netting adjustments and cash collateral(1)		183	(1,651)		(238)	(1,609)
Total derivative assets and total derivative liabilities		$ 1,542	$ 88		$ 1,038	$ 445

(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 $1,924 million and $1,737 million at March 31, 2019 and December 31, 2018. Cash collateral received and related accrued interest was $228 million and $254 million at March 31, 2019 and December 31, 2018.

With the adoption of the new hedge accounting guidance, beginning on January 1, 2019, changes in fair value of the derivative and the hedged item attributable to the hedged risk for designated fair value hedges are recorded in net interest income in the same line as the earnings effect of the hedged item. For designated cash flow hedges, the entire change in the fair value of the derivative (assuming it is included in the assessment of hedge effectiveness) is reported in OCI until the hedged transaction affects earnings. At that time, this amount is reclassified from AOCI and recorded in net interest income in the same income statement line as the earnings effect of the hedged item. Prior to January 1, 2019, for both fair value and cash flow hedges, any hedge ineffectiveness (which represented the amount by which the change in the fair value of the derivative differed from the change in the fair value of the hedge item or the variability in the cash flows of the forecasted transaction attributable to the hedged risk) was recorded in non-interest income as net gains (losses) on derivatives and hedging activities.

Table 10.2 presents the net gains (losses) on qualifying and discontinued fair value and cash flow hedging relationships. Beginning on January 1, 2019, gains (losses) on derivatives include unrealized changes in fair value, as well as net interest settlements. (See *Note 14 - Accumulated Other Comprehensive Income (Loss)* for more details on the effect of cash flow hedges on AOCI.)

Table 10.2 - Net Gains (Losses) on Fair Value and Cash Flow Hedging Relationships
(dollars in millions)

	Three Months Ended March 31, 2019				
	Interest Income (Expense)				
	Advances	Available-for-Sale Securities	Consolidated Discount Notes	Consolidated Bonds	Other Comprehensive Income
Total interest income (expense) presented in the Combined Statements of Income	$ 4,772	$ 668	$ 2,561	$ 3,733	
Gains (losses) on fair value hedging relationships					
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)

	Three Months Ended March 31, 2018(4)					
	Interest Income (Expense)(5)				Non-Interest Income	
	Advances	Available-for-Sale Securities	Consolidated Discount Notes	Consolidated Bonds	Net Gains (Losses) on Derivatives and Hedging Activities	Other Comprehensive Income
Total interest income (expense) presented in the Combined Statements of Income	$ 3,347	$ 532	$ 1,515	$ 2,621		
Gains (losses) on fair value hedging relationships						
Interest rate contracts						
Derivatives(1)	$ 1,290	$ 790	$ —	$ (911)		
Hedged items(6)	(1,271)	(773)	—	920		
Net fair value hedge ineffectiveness	$ 19	$ 17	$ —	$ 9	$ 45	
Net effect of derivatives on net interest income(7)	$ (21)	$ (68)	$ —	$ (36)		
Gains (losses) on cash flow hedging relationships(8)						
Interest rate contracts						
Reclassified from AOCI into interest income (expense)	$ 1	$ —	$ (1)	$ (2)		
Recognized in income for hedge ineffectiveness					$ 1	
Recognized in OCI for hedge effectiveness						$ 135

(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.
(4) Prior period amounts were not conformed to the new hedge accounting guidance adopted January 1, 2019.
(5) Prior to January 1, 2019, for both fair value and cash flow hedges, any hedge ineffectiveness (which represented the amount by which the change in the fair value of the derivative differed from the change in the fair value of the hedged item or the variability in the cash flows of the forecasted transaction attributable to the hedged risk) was recorded in non-interest income as net gains (losses) on derivatives and hedging activities.
(6) Includes changes in fair value.
(7) Includes net interest settlements and excludes amortization and accretion of basis adjustments on discontinued hedge relationships of $(1) million.
(8) Includes changes in fair value. Excludes the interest income (expense) of the respective hedged item and $(41) million for the effect of net interest settlements reclassified from AOCI to net interest income attributable to open cash flow hedges.

For the three months ended March 31, 2019 and 2018, 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, 2019, $1 million of deferred net gains on derivative instruments in AOCI is expected to be reclassified to earnings during the next twelve months. At March 31, 2019, the maximum length of time over which an FHLBank is hedging its exposure to the variability in future cash flows for forecasted transactions is thirteen years, excluding those forecasted transactions related to the payment of variable interest on existing financial instruments.

Table 10.3 presents the cumulative basis adjustments on hedged items designated in fair value hedging relationships and the related amortized cost of the hedged items.

Table 10.3 - Cumulative Basis Adjustments for Fair Value Hedges
(dollars in millions)

	March 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	$ 178,374	$ 510	$ 37	$ 547
Available-for-sale securities	50,992	537	2	539
Mortgage loans	744	—	14	14
Consolidated bonds	143,860	(228)	113	(115)
Consolidated discount notes	298	—	—	—

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

Table 10.4 presents net gains (losses) related to derivatives and hedging activities recorded in non-interest income. For fair value and cash flow hedging relationships, the portion of net gains (losses) representing hedge ineffectiveness were recorded in non-interest income for periods prior to January 1, 2019.

Table 10.4 - Net Gains (Losses) on Derivatives and Hedging Activities Recorded in Non-interest Income
(dollars in millions)

	Three Months Ended March 31,	
	2019	**2018**
Derivatives designated as hedging instruments		
Total net gains related to fair value hedge ineffectiveness(1)		$ 45
Total net gains related to cash flow hedge ineffectiveness		1
Derivatives not designated as hedging instruments		
Economic hedges		
Interest-rate swaps	$ (90)	21
Interest-rate swaptions	(11)	1
Interest-rate caps or floors	(4)	4
Interest-rate futures or forwards	(5)	7
Net interest settlements	(10)	(15)
Other	—	4
Mortgage delivery commitments	11	(9)
Total net gains (losses) related to derivatives not designated as hedging instruments	(109)	13
Price alignment amount(2)	1	(4)
Net gains (losses) on derivatives and hedging activities recorded in non-interest income	$ (108)	$ 55

(1) Consists of interest-rate swaps.
(2) 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, 2019, was $369 million, for which the FHLBanks have posted collateral with a fair value of $364 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 $8 million of collateral at fair value to their uncleared derivatives counterparties at March 31, 2019.

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 cash 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, 2019.

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 10.5 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 received from or pledged to counterparties.

Table 10.5 - Offsetting of Derivative Assets and Derivative Liabilities
(dollars in millions)

	March 31, 2019						
	Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Received or Pledged 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	$ 728	$ (526)	$ 6	$ 208	$ 1	$ 110	$ 97
Cleared	625	709	—	1,334	—	—	1,334
Total				$ 1,542			$ 1,431
Derivative Liabilities							
Uncleared	$ 1,295	$ (1,222)	$ 3	$ 76	$ 3	$ 6	$ 67
Cleared	441	(429)	—	12	5	7	—
Total				$ 88			$ 67

	December 31, 2018						
	Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Received or Pledged 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	$ 918	$ (772)	$ 4	$ 150	$ 1	$ 106	$ 43
Cleared	354	534	—	888	—	—	888
Total				$ 1,038			$ 931
Derivative Liabilities							
Uncleared	$ 1,536	$ (1,170)	$ 4	$ 370	$ 6	$ 237	$ 127
Cleared	514	(439)	—	75	37	9	29
Total				$ 445			$ 156

(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, 2019 and December 31, 2018, the FHLBanks had additional net credit exposure of $1,290 million and $1,175 million due to instances where an FHLBank's non-cash collateral to a counterparty exceeded the FHLBank's net derivative position.

Note 11 - 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 11.1 - Deposits
(dollars in millions)

	March 31, 2019	December 31, 2018
Interest-bearing		
Demand and overnight	$ 7,561	$ 6,795
Term	305	393
Other	8	9
Total interest-bearing	7,874	7,197
Non-interest-bearing		
Demand and overnight	177	138
Other	278	225
Total non-interest-bearing	455	363
Total deposits	$ 8,329	$ 7,560

Note 12 - 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 $1,011 billion and $1,032 billion at March 31, 2019 and December 31, 2018.

Table 12.1 - Consolidated Discount Notes Outstanding
(dollars in millions)

	Book Value	Principal Amount	Weighted-Average Interest Rate(1)
March 31, 2019	$ 407,053	$ 408,372	2.41%
December 31, 2018	$ 426,034	$ 427,367	2.33%

(1) Represents yield to maturity excluding concession fees.

Table 12.2 - Consolidated Bonds Outstanding by Contractual Maturity
(dollars in millions)

	March 31, 2019		December 31, 2018	
Year of Contractual Maturity	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
Due in 1 year or less	$ 369,974	2.32%	$ 359,133	2.19%
Due after 1 year through 2 years	91,964	2.31%	103,887	2.31%
Due after 2 years through 3 years	44,897	2.27%	47,648	2.19%
Due after 3 years through 4 years	28,993	2.39%	28,376	2.36%
Due after 4 years through 5 years	19,476	2.77%	19,321	2.72%
Thereafter	47,110	3.15%	45,776	3.13%
Total principal amount	602,414	2.40%	604,141	2.31%
Net premiums	209		250	
Hedging adjustments	(115)		(876)	
Fair value option valuation adjustments	27		(24)	
Total	$ 602,535		$ 603,491	

Consolidated bonds outstanding were issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms that are indexed primarily to LIBOR or SOFR. 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 12.3 - Consolidated Bonds Outstanding by Call Features
(dollars in millions)

Principal Amount of Consolidated Bonds	March 31, 2019	December 31, 2018
Non-callable/non-putable	$ 495,827	$ 500,416
Callable	106,587	103,725
Total principal amount	$ 602,414	$ 604,141

Table 12.4 - Consolidated Bonds Outstanding by Contractual Maturity or Next Call Date
(dollars in millions)

Year of Contractual Maturity or Next Call Date	March 31, 2019	December 31, 2018
Due in 1 year or less	$ 456,488	$ 443,750
Due after 1 year through 2 years	76,221	91,049
Due after 2 years through 3 years	27,723	28,948
Due after 3 years through 4 years	14,038	13,477
Due after 4 years through 5 years	10,446	9,756
Thereafter	17,498	17,161
Total principal amount	$ 602,414	$ 604,141

Note 13 - 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, 2019, each FHLBank was in compliance with FHFA regulatory capital requirements.

Table 13.1 - Risk-Based Capital Requirements at March 31, 2019
(dollars in millions)

	Risk-Based Capital	
FHLBank	Minimum Requirement	Actual
Boston	$ 584	$ 3,260
New York	812	7,405
Pittsburgh	1,066	5,074
Atlanta	1,633	6,880
Cincinnati	901	5,113
Indianapolis	806	3,244
Chicago	1,084	5,583
Des Moines	1,248	7,511
Dallas	1,045	3,560
Topeka	452	2,255
San Francisco	1,919	6,586

Table 13.2 - Regulatory Capital Requirements at March 31, 2019
(dollars in millions)

	Regulatory Capital Ratio		Regulatory Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	4.0%	6.2%	$ 2,093	$ 3,260
New York	4.0%	5.2%	5,703	7,405
Pittsburgh	4.0%	5.0%	4,071	5,074
Atlanta	4.0%	5.0%	5,558	6,880
Cincinnati	4.0%	5.0%	4,135	5,113
Indianapolis	4.0%	4.9%	2,655	3,244
Chicago	4.0%	5.9%	3,765	5,583
Des Moines	4.0%	5.1%	5,842	7,511
Dallas	4.0%	5.2%	2,762	3,560
Topeka	4.0%	4.3%	2,297	2,455
San Francisco	4.0%	6.0%	4,423	6,586

Table 13.3 - Leverage Capital Requirements at March 31, 2019
(dollars in millions)

	Leverage Capital Ratio		Leverage Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	5.0%	9.3%	$ 2,616	$ 4,890
New York	5.0%	7.8%	7,129	11,107
Pittsburgh	5.0%	7.5%	5,089	7,611
Atlanta	5.0%	7.4%	6,947	10,321
Cincinnati	5.0%	7.4%	5,169	7,670
Indianapolis	5.0%	7.3%	3,319	4,866
Chicago	5.0%	8.9%	4,706	8,375
Des Moines	5.0%	7.7%	7,302	11,266
Dallas	5.0%	7.7%	3,452	5,340
Topeka	5.0%	6.2%	2,871	3,582
San Francisco	5.0%	8.9%	5,529	9,879

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, 2019 and 2018, dividends on mandatorily redeemable capital stock of $16 million and $17 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 13.4 presents capital stock subject to mandatory redemption. Payment is contingent on 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 13.4 - Mandatorily Redeemable Capital Stock Rollforward
(dollars in millions)

	Three Months Ended March 31,	
	2019	2018
Balance, beginning of period	$ 1,062	$ 1,272
Net capital stock subject to mandatory redemption reclassified (to)/from capital	57	138
Redemption/repurchase of mandatorily redeemable capital stock	(86)	(173)
Other(1)	2	—
Balance, end of period	$ 1,035	$ 1,237

(1) Represents rounding adjustments. In addition, for the three months ended March 31, 2019, also includes a direct purchase of mandatorily redeemable capital stock by a member.

Table 13.5 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, if membership is terminated due to merger or consolidation, 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 13.5 - Mandatorily Redeemable Capital Stock by Contractual Year of Redemption
(dollars in millions)

	March 31, 2019	December 31, 2018
Year 1	$ 18	$ 34
Year 2	230	230
Year 3	29	18
Year 4	9	19
Year 5	69	78
Thereafter(1)	638	641
Past contractual redemption date due to remaining activity(2)	42	42
Total	$ 1,035	$ 1,062

(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. Captive insurance company members that were admitted as FHLBank members on or after September 12, 2014, had their memberships terminated no later than February 19, 2017. 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, 2019, 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 14 - Accumulated Other Comprehensive Income (Loss)

Table 14.1 presents a summary of changes in accumulated other comprehensive income (loss) for the three months ended March 31, 2019 and 2018.

Table 14.1 - Accumulated Other Comprehensive Income (Loss)
(dollars in millions)

	Net Unrealized Gains (Losses) on AFS Securities (Note 4)	Net Non-Credit Portion of OTTI Gains (Losses) on AFS Securities (Notes 4 and 6)	Net Non-Credit Portion of OTTI Gains (Losses) on HTM Securities (Notes 5 and 6)	Net Unrealized Gains (Losses) Relating to Hedging Activities (Note 10)	Pension and Postretirement Benefits	Total Accumulated Other Comprehensive Income (Loss)
Balance, December 31, 2017	$ 790	$ 573	$ (340)	$ (186)	$ (113)	$ 724
Other comprehensive income before reclassifications						
Unrealized gains (losses)	17	(9)	—	135	—	143
Non-credit OTTI losses	—	(2)	—	—	—	(2)
Change in fair value of other-than-temporarily impaired securities	—	10	—	—	—	10
Accretion of non-credit loss	—	—	17	—	—	17
Reclassifications from accumulated other comprehensive income (loss) to net income						
Non-credit OTTI to credit OTTI	—	1	—	—	—	1
Amortization on hedging activities	—	—	—	1	—	1
Amortization - pension and postretirement	—	—	—	—	1	1
Net current period other comprehensive income (loss)	17	—	17	136	1	171
Adjustment for cumulative effect of accounting change	(5)	—	—	—	—	(5)
Balance, March 31, 2018	$ 802	$ 573	$ (323)	$ (50)	$ (112)	$ 890
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

Note 15 - 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, 2019 and December 31, 2018. 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.

- 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. These reclassifications would be reported as transfers in/out at fair value at the beginning of the quarter in which the changes occur. The FHLBanks had no transfers of assets or liabilities between fair value levels during the three months ended March 31, 2019 and 2018.

Table 15.1 presents the carrying value, fair value, and fair value hierarchy of financial assets and liabilities of the FHLBanks at March 31, 2019 and December 31, 2018. 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 15.2 for further details about the financial assets and liabilities held at fair value on either a recurring or non-recurring basis.

Table 15.1 - Fair Value Summary
(dollars in millions)

	March 31, 2019					
		Fair Value				
Financial Instruments	Carrying Value	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Assets						
Cash and due from banks	$ 539	$ 539	$ 539	$ —	$ —	$ —
Interest-bearing deposits	9,766	9,766	4,446	5,320	—	—
Securities purchased under agreements to resell	51,655	51,655	—	51,655	—	—
Federal funds sold	75,357	75,358	—	75,358	—	—
Trading securities	29,915	29,915	7,117	22,798	—	—
Available-for-sale securities	88,262	88,262	—	83,900	4,362	—
Held-to-maturity securities	86,461	86,958	—	82,826	4,132	—
Advances(2)	671,382	671,687	—	671,687	—	—
Mortgage loans held for portfolio, net	64,076	64,335	—	64,225	110	—
Mortgage loans held for sale(3)	36	36	—	36	—	—
Accrued interest receivable	2,292	2,292	—	2,292	—	—
Derivative assets, net	1,542	1,542	—	1,359	—	183
Other assets	260	258	210	48	—	—
Liabilities						
Deposits	8,329	8,329	—	8,329	—	—
Consolidated obligations						
Discount notes(4)	407,053	407,034	—	407,034	—	—
Bonds(5)	602,535	602,882	—	602,882	—	—
Total consolidated obligations	1,009,588	1,009,916	—	1,009,916	—	—
Mandatorily redeemable capital stock	1,035	1,035	1,035	—	—	—
Accrued interest payable	2,077	2,077	—	2,077	—	—
Derivative liabilities, net	88	88	—	1,739	—	(1,651)
Other liabilities	115	113	80	33	—	—

		December 31, 2018				
		Fair Value				
Financial Instruments	Carrying Value	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Assets						
Cash and due from banks	$ 522	$ 522	$ 522	$ —	$ —	$ —
Interest-bearing deposits	17,182	17,182	7,250	9,932	—	—
Securities purchased under agreements to resell	45,325	45,325	—	45,325	—	—
Federal funds sold	54,216	54,217	—	54,217	—	—
Trading securities	16,449	16,449	5,304	11,145	—	—
Available-for-sale securities	83,205	83,205	—	78,682	4,523	—
Held-to-maturity securities	90,413	90,658	—	86,345	4,313	—
Advances(2)	728,767	728,435	—	728,435	—	—
Mortgage loans held for portfolio, net	62,534	61,820	—	61,704	116	—
Mortgage loans held for sale(3)	108	108	—	108	—	—
Accrued interest receivable	2,087	2,087	—	2,087	—	—
Derivative assets, net	1,038	1,038	—	1,276	—	(238)
Other assets	249	245	198	47	—	—
Liabilities						
Deposits	7,560	7,560	—	7,560	—	—
Consolidated obligations						
Discount notes(4)	426,034	425,987	—	425,987	—	—
Bonds(5)	603,491	602,116	—	602,116	—	—
Total consolidated obligations	1,029,525	1,028,103	—	1,028,103	—	—
Mandatorily redeemable capital stock	1,062	1,062	1,062	—	—	—
Accrued interest payable	1,878	1,878	—	1,878	—	—
Derivative liabilities, net	445	445	—	2,054	—	(1,609)
Other liabilities	121	118	86	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) Includes $6,694 million and $6,168 million of advances recorded under fair value option at March 31, 2019 and December 31, 2018.
(3) Represents mortgage loans held for sale recorded under fair value option, included in other assets on the Combined Statement of Condition.
(4) Includes $1,993 million and $4,172 million of consolidated discount notes recorded under fair value option at March 31, 2019 and December 31, 2018.
(5) Includes $17,377 million and $13,438 million of consolidated bonds recorded under fair value option at March 31, 2019 and December 31, 2018.

Summary of Valuation Methodologies and Primary Inputs

A description of the valuation methodologies and primary inputs is disclosed in *Note 19 - Fair Value,* pages F-66 to F-68, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018. There were no significant changes in these valuation methodologies and primary inputs during the three months ended March 31, 2019.

Fair Value Measurements

Table 15.2 presents the fair value of assets and liabilities that are recorded on a recurring or non-recurring basis at March 31, 2019 and December 31, 2018, 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 15.2 - Fair Value Measurements
(dollars in millions)

	March 31, 2019				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Recurring fair value measurements - Assets					
Trading securities					
Certificates of deposit	$ 1,210	$ —	$ 1,210	$ —	$ —
U.S. obligations	24,526	7,117	17,409	—	—
GSE and Tennessee Valley Authority obligations	2,414	—	2,414	—	—
Other non-MBS	278	—	278	—	—
Other U.S. obligations single-family MBS	12	—	12	—	—
GSE single-family MBS	73	—	73	—	—
GSE multifamily MBS	1,402	—	1,402	—	—
Total trading securities	29,915	7,117	22,798	—	—
Available-for-sale securities					
Certificates of deposit	950	—	950	—	—
U.S. obligations	5,901	—	5,901	—	—
GSE and Tennessee Valley Authority obligations	13,125	—	13,125	—	—
State or local housing agency obligations	1,132	—	1,082	50	—
Federal Family Education Loan Program ABS	3,669	—	3,669	—	—
Other non-MBS	735	—	735	—	—
Other U.S. obligations single-family MBS	5,331	—	5,331	—	—
Other U.S. obligations multifamily MBS	347	—	347	—	—
GSE single-family MBS	7,062	—	7,062	—	—
GSE multifamily MBS	45,698	—	45,698	—	—
Private-label residential MBS	4,312	—	—	4,312	—
Total available-for-sale securities	88,262	—	83,900	4,362	—
Advances(2)	6,694	—	6,694	—	—
Mortgage loans held for sale(2)	36	—	36	—	—
Derivative assets, net					
Interest-rate related	1,536	—	1,353	—	183
Mortgage delivery commitments	6	—	6	—	—
Total derivative assets, net	1,542	—	1,359	—	183
Other assets	225	210	15	—	—
Total recurring assets at fair value	$ 126,674	$ 7,327	$ 114,802	$ 4,362	$ 183
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(2)	$ 1,993	$ —	$ 1,993	$ —	$ —
Bonds(2)	17,377	—	17,377	—	—
Total consolidated obligations	19,370	—	19,370	—	—
Derivative liabilities, net					
Interest-rate related	87	—	1,738	—	(1,651)
Mortgage delivery commitments	1	—	1	—	—
Total derivative liabilities, net	88	—	1,739	—	(1,651)
Total recurring liabilities at fair value	$ 19,458	$ —	$ 21,109	$ —	$ (1,651)
Non-recurring fair value measurements - Assets(3)					
Held-to-maturity securities					
Private-label residential MBS	$ 3	$ —	$ —	$ 3	
Mortgage loans held for portfolio	10	—	—	10	
Real estate owned	1	—	—	1	
Total non-recurring assets at fair value	$ 14	$ —	$ —	$ 14	

	December 31, 2018				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Recurring fair value measurements - Assets					
Trading securities					
U.S. obligations	$ 11,991	$ 5,304	$ 6,687	$ —	$ —
GSE and Tennessee Valley Authority obligations	2,671	—	2,671	—	—
Other non-MBS	275	—	275	—	—
Other U.S. obligations single-family MBS	12	—	12	—	—
GSE single-family MBS	76	—	76	—	—
GSE multifamily MBS	1,424	—	1,424	—	—
Total trading securities	16,449	5,304	11,145	—	—
Available-for-sale securities					
Certificates of deposit	2,350	—	2,350	—	—
U.S. obligations	3,519	—	3,519	—	—
GSE and Tennessee Valley Authority obligations	13,307	—	13,307	—	—
State or local housing agency obligations	1,125	—	1,075	50	—
Federal Family Education Loan Program ABS	3,781	—	3,781	—	—
Other non-MBS	852	—	852	—	—
Other U.S. obligations single-family MBS	5,447	—	5,447	—	—
Other U.S. obligations multifamily MBS	361	—	361	—	—
GSE single-family MBS	7,377	—	7,377	—	—
GSE multifamily MBS	40,613	—	40,613	—	—
Private-label residential MBS	4,473	—	—	4,473	—
Total available-for-sale securities	83,205	—	78,682	4,523	—
Advances(2)	6,168	—	6,168	—	—
Mortgage loans held for sale(2)	108	—	108	—	—
Derivative assets, net					
Interest-rate related	1,034	—	1,272	—	(238)
Mortgage delivery commitments	4	—	4	—	—
Total derivative assets, net	1,038	—	1,276	—	(238)
Other assets	213	198	15	—	—
Total recurring assets at fair value	$ 107,181	$ 5,502	$ 97,394	$ 4,523	$ (238)
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(2)	$ 4,172	$ —	$ 4,172	$ —	$ —
Bonds(2)	13,438	—	13,438	—	—
Total consolidated obligations	17,610	—	17,610	—	—
Derivative liabilities, net					
Interest-rate related	444	—	2,053	—	(1,609)
Mortgage delivery commitments	1	—	1	—	—
Total derivative liabilities, net	445	—	2,054	—	(1,609)
Total recurring liabilities at fair value	$ 18,055	$ —	$ 19,664	$ —	$ (1,609)
Non-recurring fair value measurements - Assets(4)					
Held-to-maturity securities					
Private-label residential MBS	$ 2	$ —	$ —	$ 2	
Mortgage loans held for portfolio	24	—	1	23	
Real estate owned	10	—	—	10	
Total non-recurring assets at fair value	$ 36	$ —	$ 1	$ 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) Represents financial instruments recorded under fair value option at March 31, 2019 and December 31, 2018.
(3) The fair value information presented is as of the date the fair value adjustment was recorded during the three months ended March 31, 2019.
(4) The fair value information presented is as of the date the fair value adjustment was recorded during the year ended December 31, 2018.

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

Table 15.3 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, 2019 and 2018.

Table 15.3 - Rollforward of Level 3 Assets and Liabilities
(dollars in millions)

	Three Months Ended March 31, 2019		Three Months Ended March 31, 2018	
Available-for-Sale Securities	**State and Local Housing Agency Obligations**	**Private-Label Residential MBS**	**State and Local Housing Agency Obligations**	**Private-Label Residential MBS**
Balance, at beginning of period	$ 50	$ 4,473	$ 37	$ 5,730
Total gains (losses) included in earnings				
Interest income	—	36	—	43
Net other-than-temporary impairment losses	—	(1)	—	(2)
Total gains (losses) included in other comprehensive income				
Net amount of impairment losses reclassified to (from) non-interest income	—	—	—	(1)
Net change in fair value of other-than-temporarily impaired securities	—	4	—	1
Purchases, issuances, sales, and settlements				
Settlements	—	(200)	—	(272)
Balance, at end of period	$ 50	$ 4,312	$ 37	$ 5,499
Total amount of gains (losses) for the period included in earnings attributable to the change in unrealized gains/losses relating to assets and liabilities held at end of period	$ —	$ 20	$ —	$ 25

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 15.4 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, 2019 and 2018.

Table 15.4 - 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	**2019**	**2018**
Advances	$ 55	$ (58)
Mortgage loans held for sale(1)	—	(4)
Consolidated bonds	(32)	33
Total net gains (losses)	$ 23	$ (29)

(1) Included in other assets 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, 2019 and 2018. 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 15.5 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, 2019 and December 31, 2018.

Table 15.5 - Aggregate Fair Value and Aggregate Unpaid Balance
(dollars in millions)

	March 31, 2019			December 31, 2018		
	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)	$ 6,694	$ 6,679	$ 15	$ 6,168	$ 6,209	$ (41)
Mortgage loans held for sale(2)	36	34	2	108	106	2
Consolidated discount notes	1,993	1,985	8	4,172	4,163	9
Consolidated bonds	17,377	17,350	27	13,438	13,462	(24)

(1) At March 31, 2019 and December 31, 2018, none of the advances were 90 days or more past due or had been placed on non-accrual status.
(2) Included in other assets on the Combined Statement of Condition.

Note 16 - Commitments and Contingencies

Off-Balance Sheet Commitments

Table 16.1 - Off-Balance Sheet Commitments
(dollars in millions)

	March 31, 2019			December 31, 2018
Notional amount	Expire Within One Year	Expire After One Year	Total	Total
Standby letters of credit notional amount(1)	$ 132,681	$ 29,511	$ 162,192	$ 165,839
Unsettled consolidated bonds, principal amount	8,176	—	8,176	1,283
Commitments for standby bond purchases	648	1,736	2,384	2,332
Unused lines of credit - advances	2,212	—	2,212	2,337
Commitments to fund additional advances	1,534	128	1,662	1,119
Unsettled consolidated discount notes, principal amount	1,292	—	1,292	4,958
Commitments to purchase mortgage loans	1,219	—	1,219	833
Other	1	—	1	2

(1) Excludes unconditional commitments to issue standby letters of credit of $2,042 million and $111 million at March 31, 2019 and December 31, 2018.

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, 2019, standby letters of credit have original expiration periods of up to 20 years, expiring no later than 2037. The carrying value of guarantees related to standby letters of credit are recorded in other liabilities and were $136 million and $150 million at March 31, 2019 and December 31, 2018.

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. As a result, each FHLBank has deemed it unnecessary to record any additional liability on these commitments.

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. 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, 2019 and December 31, 2018, the FHLBanks had standby bond-purchase commitments with 13 state housing authorities. During the three months ended March 31, 2019 and 2018, 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 10 - 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 17 - Subsequent Events

Subsequent events have been evaluated from April 1, 2019, 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, 2019
(Unaudited)

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 539	$ (1)	$ 28	$ 83
Investments	341,416	(125)	15,544	39,753
Advances	671,382	—	32,152	99,132
Mortgage loans held for portfolio, net	64,076	2	4,368	2,941
Other assets	5,043	(2)	236	666
Total assets	$ 1,082,456	$ (126)	$ 52,328	$ 142,575
Liabilities				
Deposits	$ 8,329	$ (12)	$ 555	$ 1,356
Consolidated obligations				
Discount notes	407,053	—	23,586	53,036
Bonds	602,535	(110)	24,914	80,150
Total consolidated obligations	1,009,588	(110)	48,500	133,186
Mandatorily redeemable capital stock	1,035	—	17	6
Other liabilities	7,343	(4)	292	652
Total liabilities	1,026,295	(126)	49,364	135,200
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	35,587	—	1,830	5,671
Class A putable ($100 par value) issued and outstanding	198	—	—	—
Total capital stock	35,785	—	1,830	5,671
Retained earnings				
Unrestricted	15,408	1	1,091	1,110
Restricted	4,441	(1)	321	618
Total retained earnings	19,849	—	1,412	1,728
Accumulated other comprehensive income (loss)	527	—	(278)	(24)
Total capital	56,161	—	2,964	7,375
Total liabilities and capital	$ 1,082,456	$ (126)	$ 52,328	$ 142,575

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 80	$ 70	$ 21	$ 73	$ 25	$ 81	$ 47	$ 13	$ 19
21,491	46,781	37,550	21,700	35,394	38,271	30,041	18,522	36,494
75,233	90,929	54,880	32,830	50,776	99,228	36,097	29,863	70,262
4,526	346	10,519	11,398	7,578	7,943	2,594	8,701	3,160
442	814	408	382	349	520	258	328	642
$ 101,772	$ 138,940	$ 103,378	$ 66,383	$ 94,122	$ 146,043	$ 69,037	$ 57,427	$ 110,577
$ 623	$ 1,163	$ 776	$ 699	$ 561	$ 962	$ 792	$ 544	$ 310
26,731	61,166	44,212	21,254	39,639	44,994	37,369	26,785	28,281
68,629	69,186	52,124	40,376	47,047	91,979	26,746	27,400	74,094
95,360	130,352	96,336	61,630	86,686	136,973	64,115	54,185	102,375
24	1	23	174	315	237	7	4	227
606	501	1,166	742	1,231	512	411	215	1,019
96,613	132,017	98,301	63,245	88,793	138,684	65,325	54,948	103,931
3,746	4,753	4,059	1,985	1,660	5,182	2,432	1,310	2,959
—	—	—	—	—	—	—	198	—
3,746	4,753	4,059	1,985	1,660	5,182	2,432	1,508	2,959
932	1,642	625	856	3,080	1,643	961	735	2,732
372	484	406	228	528	449	160	208	668
1,304	2,126	1,031	1,084	3,608	2,092	1,121	943	3,400
109	44	(13)	69	61	85	159	28	287
5,159	6,923	5,077	3,138	5,329	7,359	3,712	2,479	6,646
$ 101,772	$ 138,940	$ 103,378	$ 66,383	$ 94,122	$ 146,043	$ 69,037	$ 57,427	$ 110,577

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CONDITION
DECEMBER 31, 2018

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 522	$ (1)	$ 10	$ 85
Investments	306,790	(137)	15,900	35,443
Advances	728,767	(2)	43,193	105,179
Mortgage loans held for portfolio, net	62,534	—	4,299	2,927
Other assets	4,237	(748)	191	747
Total assets	$ 1,102,850	$ (888)	$ 63,593	$ 144,381
Liabilities				
Deposits	$ 7,560	$ (31)	$ 475	$ 1,063
Consolidated obligations				
Discount notes	426,034	—	33,066	50,640
Bonds	603,491	(109)	25,912	84,154
Total consolidated obligations	1,029,525	(109)	58,978	134,794
Mandatorily redeemable capital stock	1,062	1	32	6
Other liabilities	6,359	(750)	501	771
Total liabilities	1,044,506	(889)	59,986	136,634
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	38,251	(1)	2,529	6,066
Class A putable ($100 par value) issued and outstanding	247	—	—	—
Total capital stock	38,498	(1)	2,529	6,066
Retained earnings				
Unrestricted	15,241	1	1,084	1,103
Restricted	4,263	—	311	591
Total retained earnings	19,504	1	1,395	1,694
Accumulated other comprehensive income (loss)	342	1	(317)	(13)
Total capital	58,344	1	3,607	7,747
Total liabilities and capital	$ 1,102,850	$ (888)	$ 63,593	$ 144,381

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 72	$ 35	$ 10	$ 101	$ 28	$ 119	$ 35	$ 15	$ 13
20,076	44,309	33,614	20,886	32,684	31,777	29,551	10,306	32,381
82,476	108,462	54,822	32,728	52,628	106,323	40,794	28,730	73,434
4,462	360	10,501	11,385	7,103	7,835	2,186	8,410	3,066
401	1,310	256	312	414	461	207	254	432
$ 107,487	$ 154,476	$ 99,203	$ 65,412	$ 92,857	$ 146,515	$ 72,773	$ 47,715	$ 109,326
$ 387	$ 1,176	$ 669	$ 501	$ 551	$ 1,070	$ 964	$ 473	$ 262
36,897	66,025	46,944	20,895	43,166	42,879	35,732	20,608	29,182
64,299	79,114	45,659	40,265	42,250	93,772	31,932	23,967	72,276
101,196	145,139	92,603	61,160	85,416	136,651	67,664	44,575	101,458
24	1	23	169	313	255	7	4	227
504	513	578	532	1,288	991	373	209	849
102,111	146,829	93,873	62,362	87,568	138,967	69,008	45,261	102,796
4,027	5,486	4,320	1,931	1,698	5,414	2,555	1,277	2,949
—	—	—	—	—	—	—	247	—
4,027	5,486	4,320	1,931	1,698	5,414	2,555	1,524	2,949
924	1,647	632	855	3,023	1,623	933	717	2,699
352	463	391	222	513	427	149	197	647
1,276	2,110	1,023	1,077	3,536	2,050	1,082	914	3,346
73	51	(13)	42	55	84	128	16	235
5,376	7,647	5,330	3,050	5,289	7,548	3,765	2,454	6,530
$ 107,487	$ 154,476	$ 99,203	$ 65,412	$ 92,857	$ 146,515	$ 72,773	$ 47,715	$ 109,326

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF INCOME
THREE MONTHS ENDED MARCH 31, 2019 AND 2018
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
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	$ 900	$ 2	$ 54	$ 135
March 31, 2018				
Interest income				
Advances	$ 3,347	$ 2	$ 178	$ 546
Investments	1,632	(2)	95	200
Mortgage loans held for portfolio	463	(3)	33	24
Other interest income	—	—	—	—
Total interest income	5,442	(3)	306	770
Interest expense				
Consolidated obligations - Discount notes	1,515	1	105	207
Consolidated obligations - Bonds	2,621	2	119	366
Other interest expense	41	(1)	2	4
Total interest expense	4,177	2	226	577
Net interest income	1,265	(5)	80	193
Provision (reversal) for credit losses	2	—	—	—
Net interest income after provision (reversal) for credit losses	1,263	(5)	80	193
Non-interest income (loss)	4	(6)	2	(19)
Non-interest expense	312	(8)	21	34
Affordable Housing Program assessments	97	(1)	6	14
Net income	$ 858	$ (2)	$ 55	$ 126

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 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
$ 321	$ 455	$ 318	$ 144	$ 214	$ 502	$ 157	$ 141	$ 369
100	222	128	96	211	174	128	74	206
36	6	78	84	55	60	9	60	21
—	—	—	—	—	—	—	—	—
457	683	524	324	480	736	294	275	596
96	224	181	70	183	124	95	95	134
249	320	223	178	169	448	128	112	307
2	4	2	5	4	7	3	2	7
347	548	406	253	356	579	226	209	448
110	135	118	71	124	157	68	66	148
2	—	—	—	—	—	—	—	—
108	135	118	71	124	157	68	66	148
2	27	(4)	6	—	8	3	(7)	(8)
22	35	22	23	42	33	24	15	49
9	13	9	6	8	14	5	4	10
$ 79	$ 114	$ 83	$ 48	$ 74	$ 118	$ 42	$ 40	$ 81

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF COMPREHENSIVE INCOME
THREE MONTHS ENDED MARCH 31, 2019, AND 2018
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
March 31, 2019				
Net income	$ 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	$ 1,085	$ 1	$ 93	$ 124
March 31, 2018				
Net income	$ 858	$ (2)	$ 55	$ 126
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	17	1	(32)	—
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	17	—	8	1
Net unrealized gains (losses) relating to hedging activities	136	(1)	10	55
Pension and postretirement benefits	1	1	—	—
Total other comprehensive income (loss)	171	1	(14)	56
Comprehensive income	$ 1,029	$ (1)	$ 41	$ 182

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 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
$ 79	$ 114	$ 83	$ 48	$ 74	$ 118	$ 42	$ 40	$ 81
(14)	—	—	22	(49)	45	40	4	—
—	(16)	—	—	7	—	1	—	16
—	—	—	—	58	—	14	—	—
—	1	—	—	(2)	—	—	—	1
(14)	(15)	—	22	14	45	55	4	17
$ 65	$ 99	$ 83	$ 70	$ 88	$ 163	$ 97	$ 44	$ 98

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CAPITAL
THREE MONTHS ENDED MARCH 31, 2019 AND 2018
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Balance, December 31, 2017	$ 56,480	$ 2	$ 3,265	$ 8,241
Comprehensive income (loss)	1,029	(1)	41	182
Proceeds from issuance of capital stock	10,948	1	408	1,871
Repurchases/redemptions of capital stock	(11,219)	3	(368)	(2,310)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(138)	(2)	—	—
Dividends of capital stock	37	—	—	—
Dividends				
Cash	(462)	2	(28)	(102)
Stock	(37)	—	—	—
Balance, March 31, 2018	$ 56,638	$ 5	$ 3,318	$ 7,882
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
$ 4,928	$ 7,267	$ 5,165	$ 2,946	$ 4,852	$ 7,021	$ 3,480	$ 2,507	$ 6,806
65	99	83	70	88	163	97	44	98
1,025	3,495	283	23	823	2,013	481	272	253
(1,156)	(3,869)	—	—	(687)	(1,706)	(459)	(239)	(428)
—	(32)	—	—	—	(3)	—	(101)	—
—	—	—	—	—	—	11	26	—
(57)	(65)	(62)	(31)	(13)	(53)	—	—	(53)
—	—	—	—	—	—	(11)	(26)	—
$ 4,805	$ 6,895	$ 5,469	$ 3,008	$ 5,063	$ 7,435	$ 3,599	$ 2,483	$ 6,676
$ 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, 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

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CASH FLOWS
THREE MONTHS ENDED MARCH 31, 2018
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Operating activities				
Net cash provided by (used in) operating activities	$ 1,944	$ (3)	$ 119	$ 301
Investing activities				
Net change/net proceeds and payment in				
Loans to FHLBanks	—	(600)	400	—
Investments	(23,029)	(20)	(884)	(3,247)
Advances	33,133	2	(469)	9,969
Mortgage loans held for portfolio	(1,122)	—	(26)	16
Other investing activities	—	(1)	1	(2)
Net cash provided by (used in) investing activities	8,982	(619)	(978)	6,736
Financing activities				
Net change in deposits and pass-through reserves, and other financing activities	727	19	51	125
Net change in loans from FHLBanks	—	600	—	—
Net proceeds (payments) on derivative contracts with financing element	36	—	—	(3)
Net proceeds from issuance of consolidated obligations				
Discount notes	1,783,715	(2)	46,679	288,894
Bonds	130,643	1	2,321	26,598
Payments for maturing and retiring consolidated obligations				
Discount notes	(1,786,211)	(1)	(44,948)	(282,013)
Bonds	(143,415)	1	(3,491)	(40,136)
Proceeds from issuance of capital stock	10,948	1	408	1,871
Payments for repurchases/redemptions of capital stock	(11,219)	3	(368)	(2,310)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(173)	(2)	—	(1)
Cash dividends paid	(462)	2	(28)	(102)
Net cash provided by (used in) financing activities	(15,411)	622	624	(7,077)
Net increase (decrease) in cash and due from banks	(4,485)	—	(235)	(40)
Cash and due from banks at beginning of the period	7,175	—	262	127
Cash and due from banks at end of the period	$ 2,690	$ —	$ 27	$ 87

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 162	$ 269	$ 105	$ 164	$ 135	$ 132	$ 222	$ 97	$ 241
—	200	—	—	—	—	—	—	—
(998)	(6,944)	(8,955)	(88)	(4,220)	1,039	2,142	(4,485)	3,631
3,878	10,376	5,993	987	(2,847)	(5,763)	1,121	(737)	10,623
(103)	19	(62)	(150)	(168)	(22)	(142)	(187)	(297)
1	—	(1)	(1)	3	(2)	(1)	3	—
2,778	3,651	(3,025)	748	(7,232)	(4,748)	3,120	(5,406)	13,957
75	3	38	(44)	161	(58)	153	218	(14)
—	—	—	—	—	(600)	—	—	—
—	(1)	(1)	(2)	(5)	—	51	(3)	—
100,808	280,476	116,800	89,947	436,144	45,511	80,173	260,986	37,299
18,348	14,051	6,311	4,365	11,586	16,385	7,068	6,563	17,046
(113,065)	(275,982)	(109,940)	(90,752)	(435,852)	(48,244)	(86,049)	(258,808)	(40,557)
(12,080)	(24,275)	(8,681)	(4,396)	(5,062)	(8,909)	(4,804)	(3,822)	(27,760)
1,025	3,495	283	23	823	2,013	481	272	253
(1,156)	(3,869)	—	—	(687)	(1,706)	(459)	(239)	(428)
—	(30)	(2)	—	—	(32)	(5)	(101)	—
(57)	(65)	(62)	(31)	(13)	(53)	—	—	(53)
(6,102)	(6,197)	4,746	(890)	7,095	4,307	(3,391)	5,066	(14,214)
(3,162)	(2,277)	1,826	22	(2)	(309)	(49)	(243)	(16)
3,415	2,357	27	55	42	503	88	268	31
$ 253	$ 80	$ 1,853	$ 77	$ 40	$ 194	$ 39	$ 25	$ 15

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SELECTED FINANCIAL DATA

	2019	2018			
	March 31,	December 31,	September 30,	June 30,	March 31,
Selected Statement of Condition Data at					
Investments(1)	$ 341,416	$ 306,790	$ 318,285	$ 332,710	$ 329,412
Advances	671,382	728,767	706,005	734,457	697,066
Mortgage loans held for portfolio	64,091	62,549	60,090	57,225	54,915
Allowance for credit losses on mortgage loans	(15)	(15)	(15)	(16)	(17)
Total assets	1,082,456	1,102,850	1,089,255	1,130,235	1,087,860
Consolidated obligations					
Discount notes	407,053	426,034	402,823	412,839	389,052
Bonds	602,535	603,491	613,471	644,421	627,837
Total consolidated obligations	1,009,588	1,029,525	1,016,294	1,057,260	1,016,889
Mandatorily redeemable capital stock	1,035	1,062	1,078	1,206	1,237
Capital					
Total capital stock(2)	35,785	38,498	37,415	38,670	37,285
Retained earnings	19,849	19,504	19,308	18,914	18,463
Accumulated other comprehensive income (loss)	527	342	861	806	890
Total capital	56,161	58,344	57,584	58,390	56,638
Selected Statement of Income Data for the quarter ended					
Net interest income	$ 1,274	$ 1,319	$ 1,340	$ 1,332	$ 1,265
Provision (reversal) for credit losses	1	1	—	(1)	2
Net interest income after provision (reversal) for credit losses	1,273	1,318	1,340	1,333	1,263
Non-interest income (loss)	63	(76)	40	59	4
Non-interest expense	334	361	331	311	312
Affordable Housing Program Assessments	102	90	107	110	97
Net income	$ 900	$ 791	$ 942	$ 971	$ 858
Selected Other Data for the quarter ended					
Cash and stock dividends	$ 570	$ 595	$ 548	$ 520	$ 499
Dividend payout ratio(3)	63.33%	75.22%	58.17%	53.55%	58.16%
Return on average equity(4)(5)	6.40%	5.45%	6.52%	6.73%	6.01%
Return on average assets	0.33%	0.29%	0.34%	0.35%	0.30%
Average equity to average assets(5)	5.20%	5.29%	5.24%	5.20%	5.06%
Net interest margin(6)	0.47%	0.45%	0.49%	0.48%	0.45%
Selected Other Data at					
GAAP capital-to-asset ratio	5.19%	5.29%	5.29%	5.17%	5.21%
Regulatory capital-to-assets ratio(7)	5.24%	5.36%	5.31%	5.20%	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 13 - 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 13 - 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, 2019, or for any future period. The unaudited 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, 2018, included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018.

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 registrant's financial statements that enables investors to see the registrant 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 among the FHLBanks have been eliminated in accordance with combination accounting principles related to consolidation under GAAP. (See *Note 1 - Summary of Significant Accounting Policies* to the accompanying combined financial statements for more information.)

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 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 the *Risk Factors* on pages 21-29 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018. 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;

- 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, including changes in the Federal Home Loan Bank Act of 1932, as amended (FHLBank Act), housing finance and government-sponsored enterprise (GSE) reform, Federal Housing Finance Agency (FHFA) actions, or regulations that affect FHLBank operations, regulatory oversight, and changes to, and replacement of, the London Interbank Offered Rate (LIBOR) benchmark interest rate;

- 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 overview 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. All 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 either the United States or any government agency. Moody's Investors Service (Moody's), S&P Global Ratings (S&P), 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 Moody's and S&P. 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.

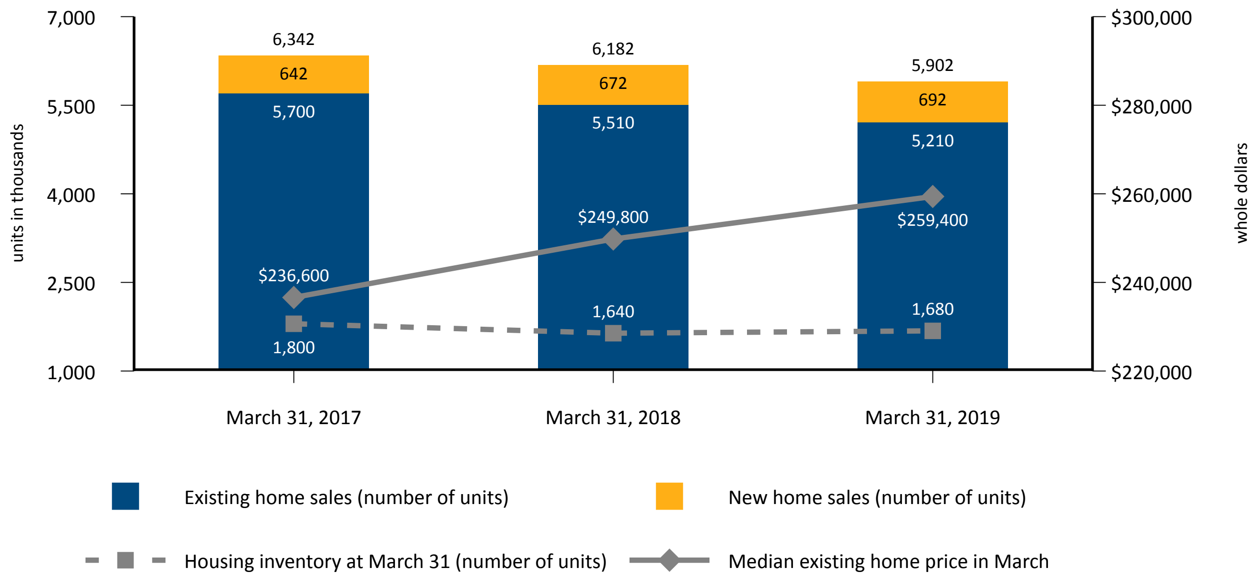
Economy and Financial Markets. The FHLBanks' overall results of operations are influenced by the economy and financial markets, and, in particular, by FHLBank members' demand for advances and the FHLBanks' ability to maintain sufficient access to diverse sources of funding at relatively favorable costs. The FHLBanks' flexibility in utilizing various funding tools, in combination with a 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. The FHLBanks continued to meet their funding needs in response to demand for advances during the three months ended March 31, 2019.

Economic and market data received by the Federal Reserve, prior to the Federal Open Market Committee meeting in March 2019, indicated that the U.S. labor market remains strong, but that growth of U.S. economic activity has slowed from the fourth quarter of 2018, and on a 12-month basis, overall inflation has declined. The Federal Open Market Committee, at its March 2019 meeting, stated that continued expansion of economic activity, strong labor market conditions, and inflation around two percent to be the most likely outcomes.

The Bureau of Labor Statistics reported that the U.S. unemployment rate was 3.8% in March 2019, compared to 3.9% in December 2018. U.S. real gross domestic product increased at an annual rate of 3.2% in the first quarter of 2019, according to the advance estimate reported by the Bureau of Economic Analysis, compared to an annual rate of 2.2% (third estimate) in the fourth quarter of 2018.

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 in March 2019, compared to March 2018 and 2017, driven by increases in home prices.

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. 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, 2019. In the United States, overall economic conditions, monetary policy, and financial regulation continue to be influencing factors. In March 2019, the Federal Reserve Board, acting through its Federal Open Market Committee, decided to maintain the target range for the federal funds rate at 2.25% to 2.50%. The Federal Open Market Committee stated it will assess realized and expected economic conditions relative to its objectives of maximum employment and two percent inflation when determining the timing and size of future adjustments to the target range for the federal funds rate. Figures 2 and 3 present the quarterly average and quarter-end rates for certain key interest rates. These figures illustrate short-term interest rates trending higher.

Figure 2 - Quarterly Average Rates

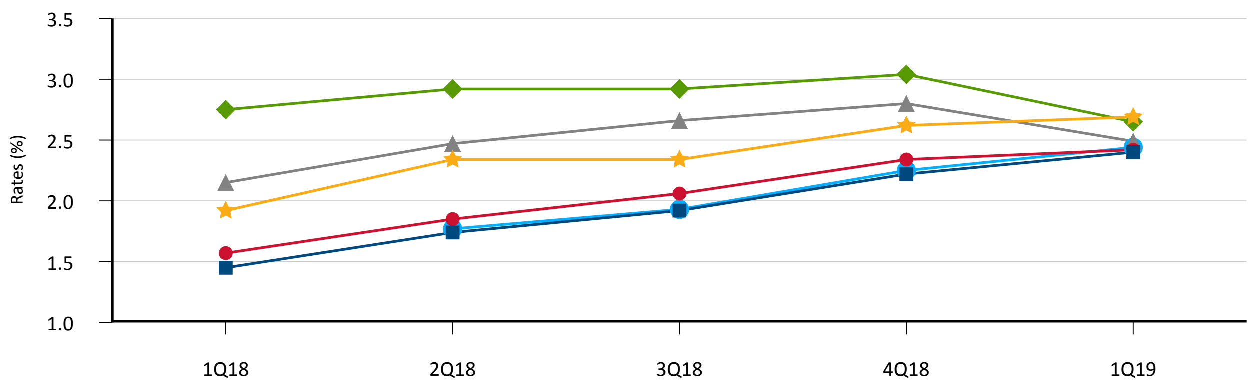
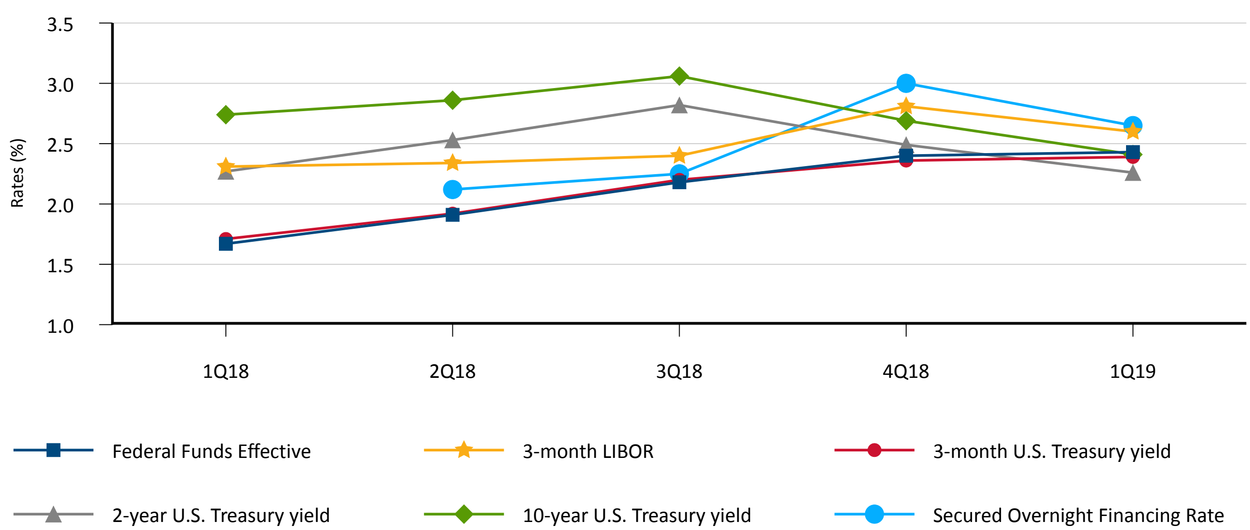


Figure 3 - Quarter-End Rates



Source: Bloomberg

During the three months ended March 31, 2019, the cost of consolidated obligations increased, as measured by the average spreads to three-month LIBOR, compared to the three months ended March 31, 2018.

Table 1 - Funding Spreads to Three-Month LIBOR
(in basis points)

	Three-Month Average		Ending Spread	
Borrowing Term	**March 31, 2019**	**March 31, 2018**	**March 31, 2019**	**December 31, 2018**
3-months	(24.2)	(33.0)	(17.5)	(33.2)
2-years	(6.5)	(15.7)	(5.3)	(8.9)
5-years	7.1	(1.0)	2.7	11.8
10-years	41.1	29.6	35.3	45.4

Source: Funding spreads are derived using Office of Finance indications compared to LIBOR.

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. As of March 31, 2019, each of the FHLBanks and the Office of Finance have developed a LIBOR transition plan. (See *Risk Factors* on page 22 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018 and *Combined Financial Condition - Consolidated Obligations* for more information.)

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 $1,082.5 billion at March 31, 2019, a decrease of 1.8% from $1,102.9 billion at December 31, 2018.

- Advances totaled $671.4 billion at March 31, 2019, a decrease of 7.9% from $728.8 billion at December 31, 2018. Commercial banks were the largest member borrowers with 62.8% of the total principal amount of advances outstanding at March 31, 2019, compared to 64.5% at December 31, 2018. The top 10 advance holding company borrowers represented 36.3% of the total principal amount of advances outstanding at March 31, 2019, compared to 34.7% at December 31, 2018. The FHLBanks protect against credit risk on advances by collateralizing all advances. At March 31, 2019, each FHLBank had rights to collateral with an estimated value greater than the related outstanding advances.

- Investments were $341.4 billion at March 31, 2019, an increase of 11.3% from $306.8 billion at December 31, 2018, driven by an increase in liquidity investments, primarily federal funds sold and U.S. Treasury obligations. 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, increased to $64.1 billion at March 31, 2019, an increase of 2.5% from $62.5 billion at December 31, 2018, as the FHLBanks continued to grow their mortgage loan portfolios. Mortgage loan purchases of $3.0 billion outpaced principal repayments of $1.4 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 $1,026.3 billion at March 31, 2019, a decrease of 1.7% from $1,044.5 billion at December 31, 2018, primarily the result of a decrease in consolidated obligations.

- Consolidated obligations totaled $1,009.6 billion at March 31, 2019, a decrease of 1.9% from $1,029.5 billion at December 31, 2018, in line with the decrease in total assets, and mainly consisted of a 4.5% decrease in consolidated discount notes. 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 $56.2 billion at March 31, 2019, a decrease of 3.7% from $58.3 billion at December 31, 2018. This decrease was due primarily to a decrease in capital stock. The GAAP capital-to-assets ratio was 5.19% and the regulatory capital-to-assets ratio was 5.24% at March 31, 2019, compared to 5.29% and 5.36% at December 31, 2018. Each FHLBank was in compliance with FHFA regulatory capital requirements at March 31, 2019.

- Capital stock was $35.8 billion at March 31, 2019, a decrease of 7.0% from $38.5 billion at December 31, 2018, resulting from the net repurchases and redemptions of activity-based capital stock driven by the decrease in advances.

Combined Results of Operations. Net income was $900 million for the three months ended March 31, 2019, an increase of $42 million, or 4.9%, compared to the three months ended March 31, 2018, primarily resulting from an increase in non-interest income.

Net interest income after provision for credit losses was $1,273 million for the three months ended March 31, 2019, an increase of $10 million, or 0.8%, compared to the three months ended March 31, 2018. Net interest margin improved to 0.47% for the three months ended March 31, 2019, an increase of 2 basis points compared to the three months ended March 31, 2018.

Non-interest income was $63 million for the three months ended March 31, 2019, an increase of $59 million, compared to the three months ended March 31, 2018, due primarily to net gains on investment securities and net gains on financial instruments held under fair value option, partially offset by net losses on derivatives and hedging activities. Non-interest expense was $334 million for the three months ended March 31, 2019, an increase of $22 million, or 7.1%, compared to the three months ended March 31, 2018.

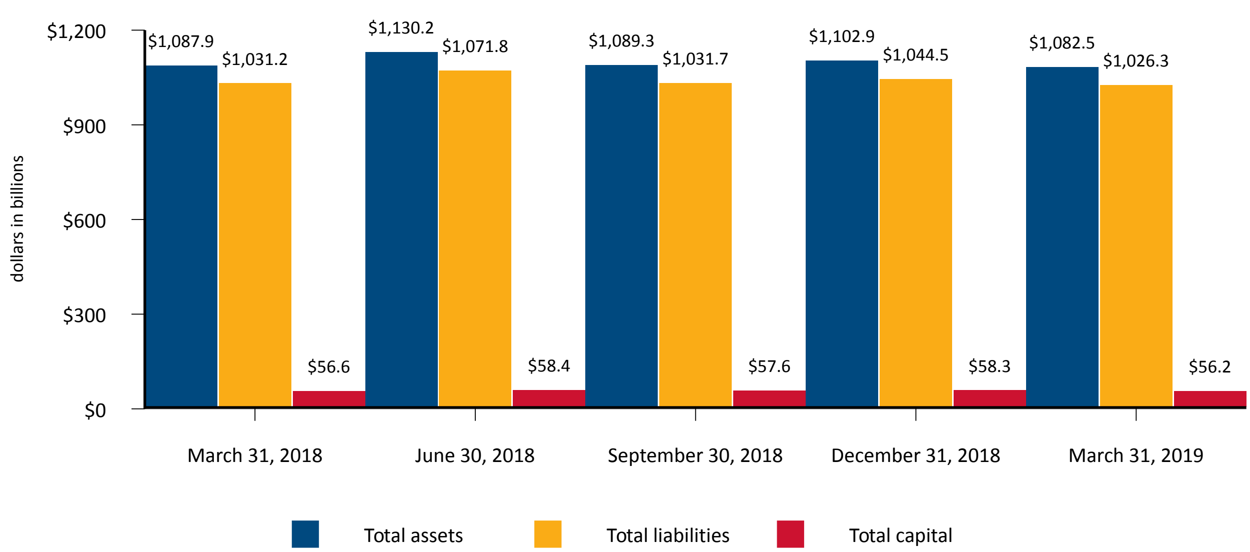
Affordable Housing Program assessments result from individual FHLBank income subject to assessment. Affordable Housing Program assessments were $102 million for the three months ended March 31, 2019, an increase of $5 million, or 5.2%, compared to the three months ended March 31, 2018.

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 4 presents the total assets, liabilities, and capital for the most recent five quarters.

Figure 4 - Total Assets, Liabilities, and Capital



Figures 5 and 6 present the total assets and total liabilities and capital composition at March 31, 2019.

Figure 5 - Total Assets (dollars in billions)

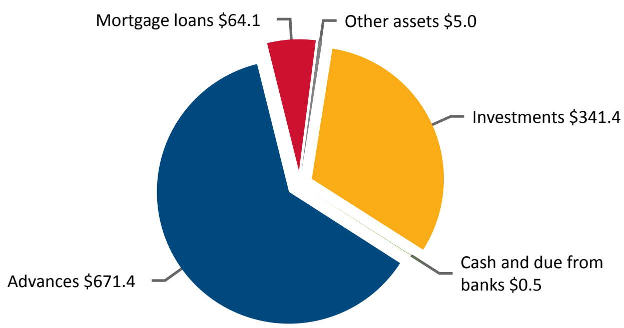
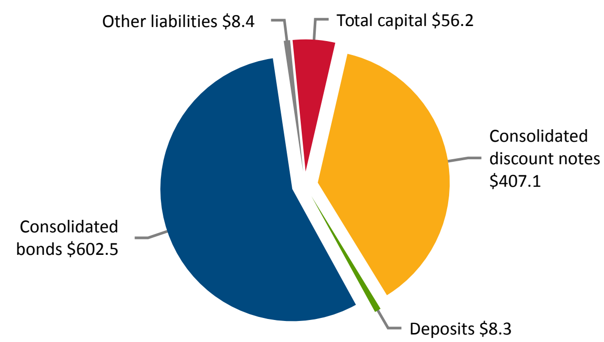


Figure 6 - Total Liabilities and Capital (dollars in billions)



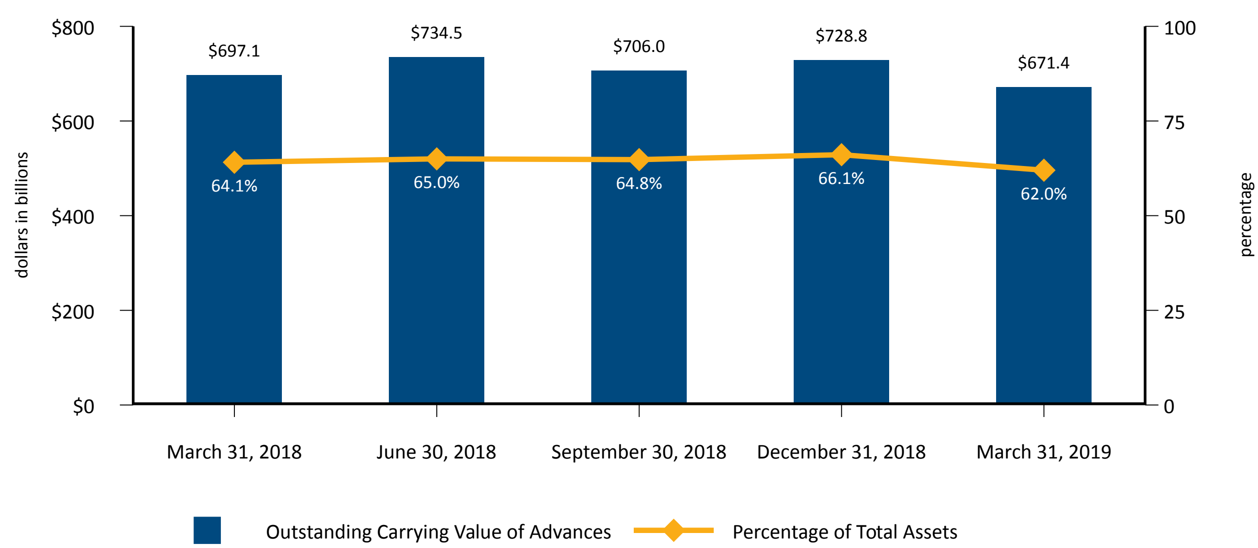
The following discussion contains information on the major categories of the Combined Statement of Condition: advances, investments, mortgage loans, consolidated obligations, deposits, and capital.

- Total assets were $1,082.5 billion at March 31, 2019, a decrease of 1.8% from $1,102.9 billion at December 31, 2018.
- Total liabilities were $1,026.3 billion at March 31, 2019, a decrease of 1.7% from $1,044.5 billion at December 31, 2018.
- Total GAAP capital was $56.2 billion at March 31, 2019, a decrease of 3.7% from $58.3 billion at December 31, 2018.

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 7 presents advances for the most recent five quarters.

Figure 7 - Advances Outstanding (Carrying Value)



The outstanding carrying value of advances totaled $671.4 billion at March 31, 2019, a decrease of $57.4 billion, or 7.9%, from $728.8 billion at December 31, 2018, due primarily to a decrease in short-term advances, principally those made to large members. The percentage of members with outstanding advances was 52.9% at March 31, 2019, compared to 56.8% at December 31, 2018. Figures 8 and 9 present the principal amount of advances by product type and by redemption term at March 31, 2019 and December 31, 2018.

Figure 8 - Advances by Product Type

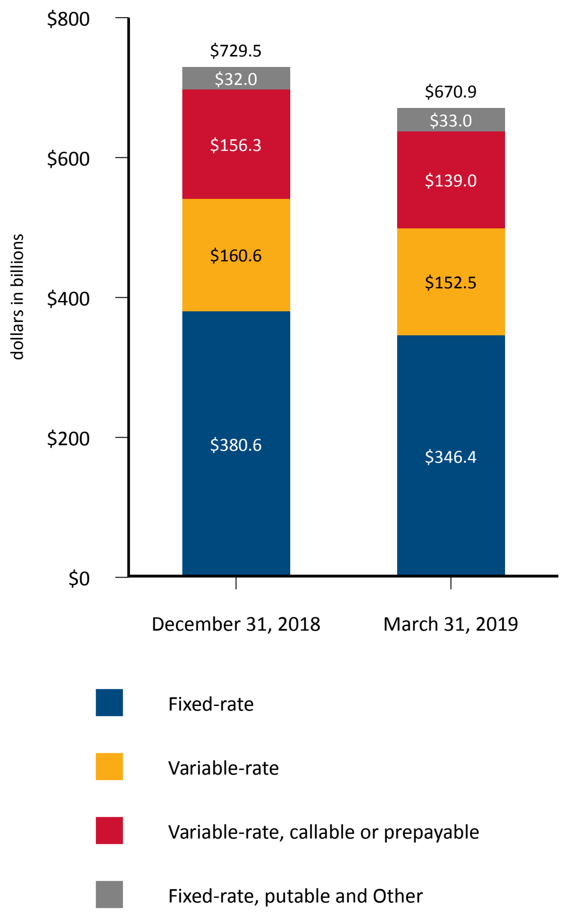


Figure 9 - Advances by Redemption Term

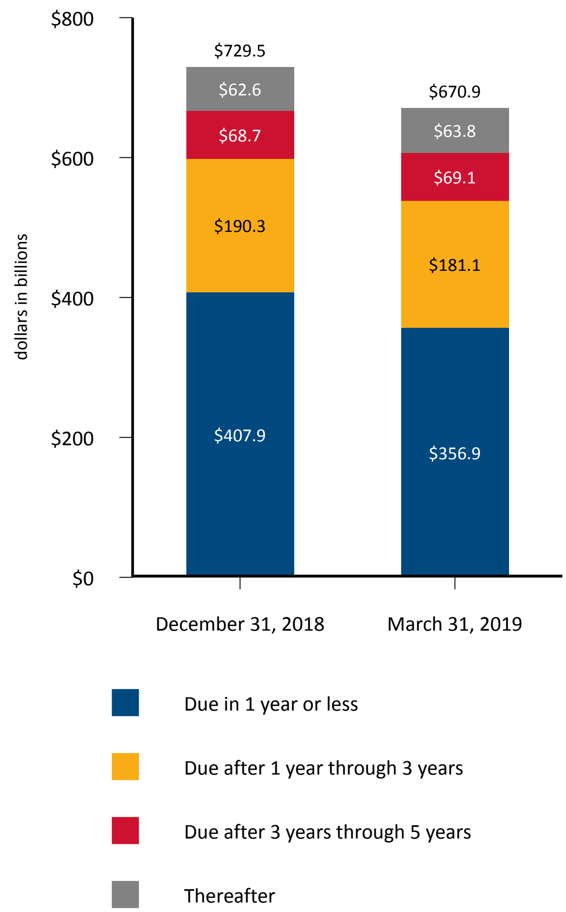


Table 2 presents advances outstanding by product type and redemption term, some of which include advances that contain embedded put or call options. A member either can sell an embedded option to an FHLBank or it can purchase an embedded option from an FHLBank. (See *Note 7 - Advances* to the accompanying combined financial statements for additional information on putable and callable advances and their potential effects on advance redemptions.)

Table 2 - Types of Advances by Redemption Term
(dollars in millions)

	March 31, 2019		December 31, 2018		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Fixed-rate						
Due in 1 year or less	$ 217,849	32.5%	$ 246,428	33.8%	$ (28,579)	(11.6)%
Due after 1 year through 3 years	76,705	11.4%	82,834	11.4%	(6,129)	(7.4)%
Due after 3 years through 5 years	36,021	5.4%	35,360	4.8%	661	1.9 %
Thereafter	15,841	2.4%	16,009	2.2%	(168)	(1.0)%
Total principal amount	346,416	51.7%	380,631	52.2%	(34,215)	(9.0)%
Fixed-rate, putable						
Due in 1 year or less	5	—	805	0.1%	(800)	(99.4)%
Due after 1 year through 3 years	432	0.1	276	—	156	56.5 %
Due after 3 years through 5 years	3,016	0.4%	2,211	0.3%	805	36.4 %
Thereafter	16,403	2.4%	15,616	2.1%	787	5.0 %
Total principal amount	19,856	2.9%	18,908	2.5%	948	5.0 %
Variable-rate						
Due in 1 year or less	108,268	16.1%	113,594	15.6%	(5,326)	(4.7)%
Due after 1 year through 3 years	41,035	6.1%	43,584	6.0%	(2,549)	(5.8)%
Due after 3 years through 5 years	1,444	0.2%	1,978	0.3%	(534)	(27.0)%
Thereafter	1,760	0.3%	1,448	0.2%	312	21.5 %
Total principal amount	152,507	22.7%	160,604	22.1%	(8,097)	(5.0)%
Variable-rate, callable or prepayable(1)						
Due in 1 year or less	27,852	4.2%	44,153	6.1%	(16,301)	(36.9)%
Due after 1 year through 3 years	58,729	8.8%	59,346	8.1%	(617)	(1.0)%
Due after 3 years through 5 years	26,485	3.9%	26,972	3.7%	(487)	(1.8)%
Thereafter	25,969	3.9%	25,789	3.5%	180	0.7 %
Total principal amount	139,035	20.8%	156,260	21.4%	(17,225)	(11.0)%
Other(2)						
Due in 1 year or less	2,947	0.4%	2,881	0.4%	66	2.3 %
Due after 1 year through 3 years	4,185	0.6%	4,264	0.6%	(79)	(1.9)%
Due after 3 years through 5 years	2,112	0.3%	2,139	0.3%	(27)	(1.3)%
Thereafter	3,792	0.6%	3,762	0.5%	30	0.8 %
Total principal amount	13,036	1.9%	13,046	1.8%	(10)	(0.1)%
Overdrawn and overnight deposit accounts	6	—	52	—	(46)	(88.5)%
Total principal amount advances	670,856	100.0%	729,501	100.0%	$ (58,645)	(8.0)%
Other adjustments(3)	526		(734)			
Total advances	$ 671,382		$ 728,767			

(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 3 presents cash flows related to advance originations and advance repayments. During the three months ended March 31, 2019, advance repayments exceeded originations, resulting in lower advances outstanding. Both advance originations and advance repayments decreased during the three months ended March 31, 2019, compared to the three months ended March 31, 2018, driven by a decrease in short-term advance activity.

Table 3 - Advance Originations and Repayments
(dollars in millions)

	Three Months Ended March 31, 2019	Three Months Ended March 31, 2018	Change
Advances originated	$ 2,364,379	$ 3,189,619	$ (825,240)
Advances repaid	2,423,023	3,222,752	(799,729)
Net change	$ (58,644)	$ (33,133)	

The FHLBanks make advances primarily to their members. Table 4 presents the principal amount of advances by type of borrower and member.

Table 4 - Principal Amount of Advances by Type of Borrower and Member
(dollars in millions)

	March 31, 2019		December 31, 2018	
	Principal Amount	Number of Members	Principal Amount	Number of Members
Commercial bank members	$ 421,075	2,375	$ 470,382	2,548
Insurance company members(1)	106,206	180	104,322	177
Savings institution members	81,745	484	85,702	499
Credit union members	50,726	553	57,746	649
Community development financial institution members	253	26	222	25
Total	660,005	3,618	718,374	3,898
Non-member borrowers	9,790		10,132	
Housing associates	1,061		995	
Total principal amount	$ 670,856		$ 729,501	
Total members		6,841		6,863

(1) Includes $20.9 billion of the principal amount of advances outstanding to captive insurance members at both March 31, 2019 and December 31, 2018.

Figures 10 and 11 present the percentage of principal amount of advances by type of borrower and percentage of member borrowers by type of member at March 31, 2019.

Figure 10 - Percentage of Principal Amount of Advances by Type of Borrower

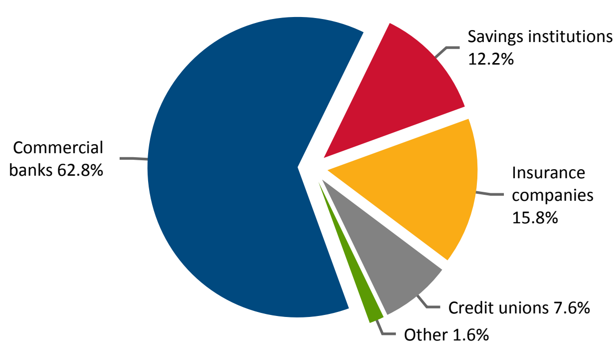


Figure 11 - Percentage of Member Borrowers by Type of Member

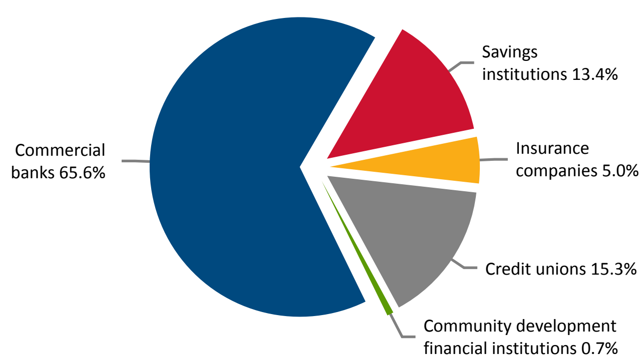


Table 5 presents the FHLBanks' top 10 advance holding borrowers at the holding-company level on a combined basis based on the principal amount of advances outstanding at March 31, 2019. The percentage of total advances for each holding company was computed by dividing the principal amount of advances 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 5 - Top 10 Advance Holding Borrowers by Holding Company at March 31, 2019
(dollars in millions)

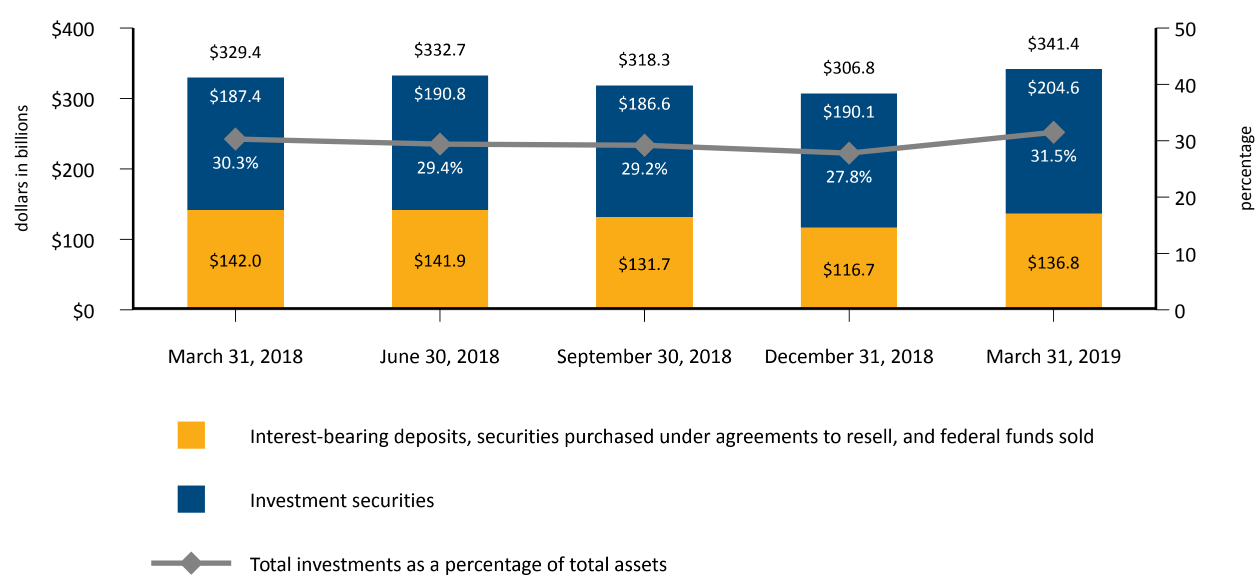
Holding Company Name(1)	FHLBank Districts(2)	Principal Amount	Percentage of Total Principal Amount of Advances
JPMorgan Chase & Co.	Pittsburgh, Cincinnati, Chicago, Des Moines, San Francisco	$ 57,324	8.5%
Wells Fargo & Company	Des Moines, San Francisco	56,620	8.4%
Citigroup Inc.	New York, Dallas	23,825	3.6%
The PNC Financial Services Group, Inc.	Pittsburgh, Atlanta, Cincinnati	20,501	3.1%
Ally Financial Inc.	Pittsburgh	17,525	2.6%
MetLife, Inc.	Boston, New York, Pittsburgh, Des Moines	15,970	2.4%
Mitsubishi UFJ Financial Group, Inc.	San Francisco	14,550	2.2%
Bank of America Corporation	Boston, Atlanta, Des Moines, San Francisco	12,624	1.9%
Navy Federal Credit Union	Atlanta	12,040	1.8%
New York Community Bancorp, Inc.	New York	11,804	1.8%
		$ 242,783	36.3%

(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, 2019, each holding company had subsidiaries with advance borrowings in these FHLBank districts.

Investments

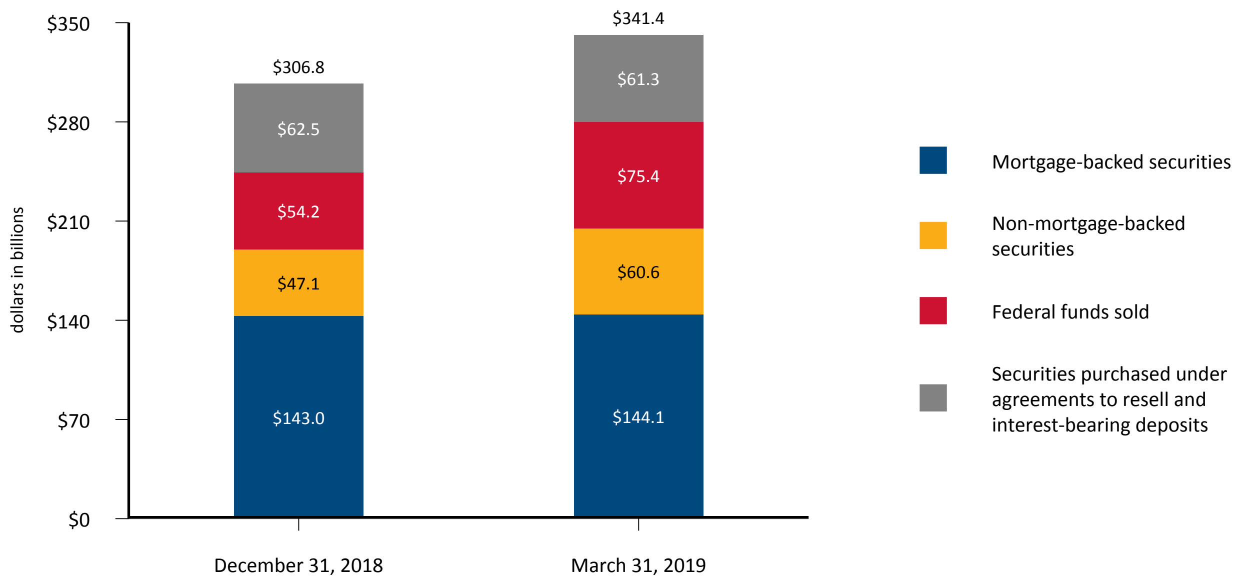
The FHLBanks maintain investment portfolios for liquidity purposes and to generate additional earnings. The income from these investment portfolios also bolsters the FHLBanks' capacity to support affordable housing and community investment. The FHLBanks invest in investment-quality securities to mitigate 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 *Risk Management - Credit Risk - Investments* for additional information.) Figure 12 presents total investments for the most recent five quarters.

Figure 12 - Total Investments (Carrying Value)



Total investments were $341.4 billion at March 31, 2019, an increase of $34.6 billion, or 11.3%, from $306.8 billion at December 31, 2018, driven by an increase in short-term investments, primarily federal funds sold and U.S. treasury obligations, due in part to new regulatory liquidity requirements from the FHFA. (See *Liquidity and Capital Resources* for additional information.) Figure 13 presents the composition of investments by product type at March 31, 2019 and December 31, 2018.

Figure 13 - Investments by Product Type



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. obligations; and
- GSE obligations.

The yield earned on these short-term investments is highly correlated with short-term market interest rates. At March 31, 2019, 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. obligations;
- GSE obligations;
- Agency obligations; and
- Other MBS and ABS.

Table 6 presents the composition of investments, including investment securities, at March 31, 2019 and December 31, 2018.

Table 6 - Total Investments
(dollars in millions)

Carrying Value	March 31, 2019	December 31, 2018	Change
Interest-bearing deposits	$ 9,766	$ 17,182	$ (7,416)
Securities purchased under agreements to resell	51,655	45,325	6,330
Federal funds sold	75,357	54,216	21,141
Total Investment Securities by Major Security Type			
Investment securities non-mortgage-backed securities			
Certificates of deposit	2,460	3,050	(590)
U.S. obligations	31,176	16,859	14,317
GSE and Tennessee Valley Authority obligations	19,098	19,038	60
State or local housing agency obligations	3,170	3,221	(51)
Federal Family Education Loan Program ABS	3,669	3,781	(112)
Other	1,013	1,127	(114)
Total investment securities non-mortgage-backed securities	60,586	47,076	13,510
Investment securities mortgage-backed securities			
U.S. obligations single-family MBS	12,145	12,528	(383)
U.S. obligations multifamily MBS	348	362	(14)
GSE single-family MBS	36,669	38,165	(1,496)
GSE multifamily MBS	88,330	85,083	3,247
Private-label residential MBS	6,433	6,709	(276)
Private-label manufactured housing loan ABS	33	36	(3)
Private-label home equity loan ABS	94	108	(14)
Total investment securities mortgage-backed securities	144,052	142,991	1,061
Total investment securities	204,638	190,067	14,571
Total investments	$ 341,416	$ 306,790	$ 34,626

The FHLBanks classify investment securities as held-to-maturity (HTM), available-for-sale (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. An FHLBank may manage the prepayment and interest-rate risks by funding investment securities with consolidated obligations that have call features or by hedging the prepayment risk with caps or floors, callable swaps, or swaptions. An FHLBank may manage prepayment and duration risk by funding investment securities with consolidated obligations that contain call features. An FHLBank may also manage the risk arising from changing market prices and volatility of investment securities by matching the cash outflow on the derivatives with the cash inflow on the investment securities. Derivatives held by an FHLBank that are associated with trading and HTM securities are designated as economic hedges, and derivatives held by an FHLBank associated with AFS securities may qualify as either a fair value hedge or a cash flow hedge, or may be designated as an economic hedge. (See *Note 10 - Derivatives and Hedging Activities* to the accompanying combined financial statements for additional information.) Figure 14 summarizes the interest-rate payment terms of investment securities by product type at March 31, 2019 and December 31, 2018. (Trading securities are presented at fair value; AFS and HTM securities are presented at amortized cost.)

Figure 14 - Interest-Rate Payment Terms of Investment Securities by Product Type

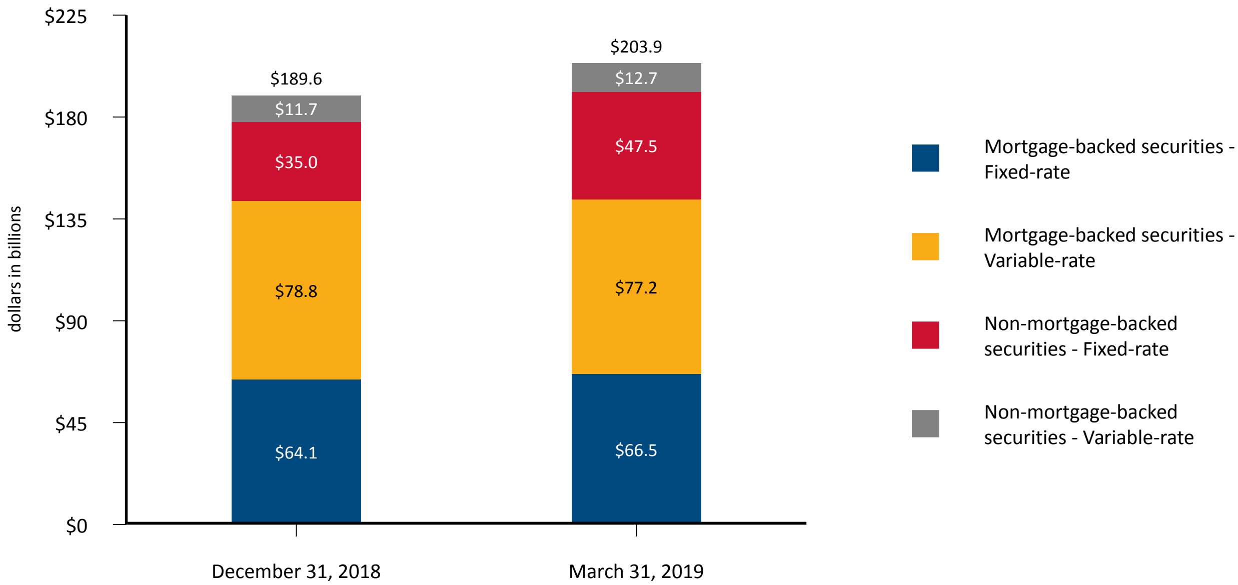


Table 7 presents the interest-rate payment terms of investment securities at March 31, 2019 and December 31, 2018.

Table 7 - Interest-Rate Payment Terms of Investment Securities
(dollars in millions)

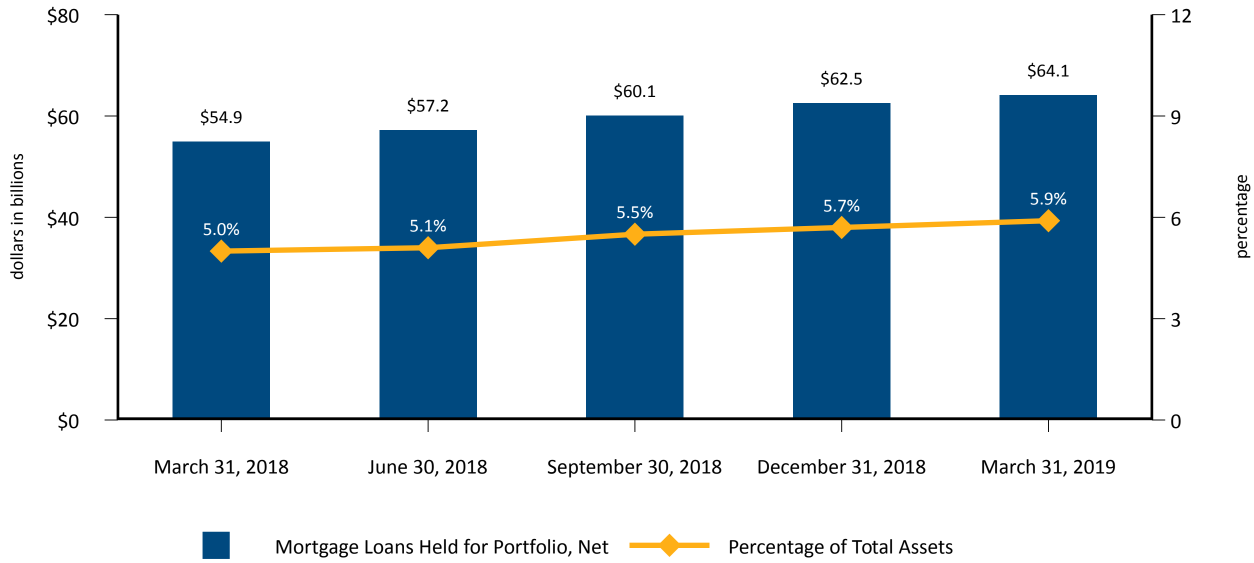
	March 31, 2019	December 31, 2018
Trading Securities at Fair Value		
Trading non-mortgage-backed securities		
Fixed-rate	$ 25,917	$ 13,673
Variable-rate	2,511	1,264
Total trading non-mortgage-backed securities	28,428	14,937
Trading mortgage-backed securities		
Fixed-rate	1,403	1,424
Variable-rate	84	88
Total trading mortgage-backed securities	1,487	1,512
Total trading securities	$ 29,915	$ 16,449
Available-for-Sale Securities at Amortized Cost		
Available-for-sale non-mortgage-backed securities		
Fixed-rate	$ 19,484	$ 18,693
Variable-rate	5,670	5,908
Total available-for-sale non-mortgage-backed securities	25,154	24,601
Available-for-sale mortgage-backed securities		
Fixed-rate	41,618	37,086
Variable-rate	20,512	20,775
Total available-for-sale mortgage-backed securities	62,130	57,861
Total available-for-sale securities	$ 87,284	$ 82,462
Held-to-Maturity Securities at Amortized Cost		
Held-to-maturity non-mortgage-backed securities		
Fixed-rate	$ 2,089	$ 2,591
Variable-rate	4,557	4,614
Total held-to-maturity non-mortgage-backed securities	6,646	7,205
Held-to-maturity mortgage-backed securities		
Fixed-rate	23,484	25,556
Variable-rate	56,585	57,920
Total held-to-maturity mortgage-backed securities	80,069	83,476
Total held-to-maturity securities	$ 86,715	$ 90,681

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 the regulatory requirement at the time of its respective securities purchases. However, at March 31, 2019, each of the FHLBanks of Atlanta and Dallas exceeded the 300% regulatory limit and were precluded from purchasing additional MBS/ABS investments until its respective MBS/ABS to total regulatory capital percentage declined below 300%. Neither of these FHLBanks was required to sell any previously purchased securities. On a combined basis, the FHLBanks' percentage of MBS/ABS (net of regulatory excluded MBS) was 260% of total combined regulatory capital at March 31, 2019.

Mortgage Loans Held for Portfolio, Net

An FHLBank may purchase 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® (MPF) Program. (See *Risk Management - Credit Risk - Mortgage Loans Held for Portfolio* for more information.) Figure 15 presents mortgage loans held for portfolio, net, for the most recent five quarters.

Figure 15 - Mortgage Loans Held for Portfolio, Net (Carrying Value)



Mortgage loans grew to $64.1 billion at March 31, 2019, an increase of 2.5% from $62.5 billion at December 31, 2018. Mortgage loan purchases of $3.0 billion outpaced principal repayments of $1.4 billion, as the FHLBanks continued to grow their mortgage loan portfolios. The allowance for credit losses on mortgage loans was $15 million at both March 31, 2019 and December 31, 2018.

Table 8 - Mortgage Loans Held for Portfolio, Net
(dollars in millions)

	March 31, 2019	December 31, 2018	Change
Mortgage loans held for portfolio	$ 64,091	$ 62,549	$ 1,542
Allowance for credit losses on mortgage loans	(15)	(15)	—
Mortgage loans held for portfolio, net	$ 64,076	$ 62,534	$ 1,542

Mortgage Loans Held for Portfolio. At March 31, 2019, the FHLBank of Atlanta was not accepting additional master commitments to acquire loans for its own portfolio. The FHLBank of Des Moines was not accepting additional master commitments to purchase mortgage loans under the MPP at March 31, 2019, and expects the balance of its existing MPP loans, acquired through the merger with the FHLBank of Seattle, to decrease as they are paid off. The remaining FHLBanks participating in the MPP and MPF Program continue to have the ability to purchase both conventional and government-guaranteed or -insured fixed-rate mortgage loans.

Allowance for Credit Losses on Mortgage Loans. Table 9 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 9 - Mortgage Loans Held for Portfolio - Risk Elements and Credit Losses
(dollars in millions)

Unpaid Principal Balance	March 31, 2019	December 31, 2018
Total past due 90 days or more and still accruing interest	$ 86	$ 87
Non-accrual loans	$ 133	$ 135
Troubled debt restructurings (TDRs), performing	$ 83	$ 84

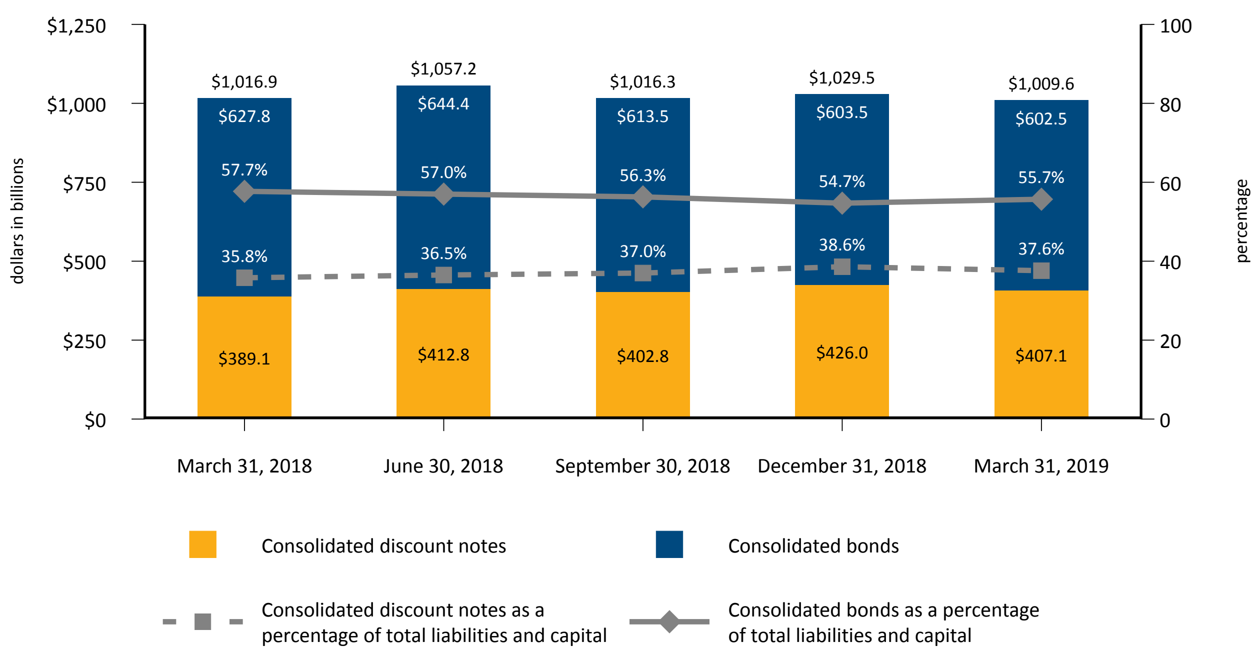
	Three Months Ended March 31, 2019	Year Ended December 31, 2018
Allowance for credit losses, beginning of period	$ 15	$ 16
Charge-offs, net of recoveries	(1)	(3)
Provision (reversal) for credit losses	1	2
Allowance for credit losses, end of period	$ 15	$ 15

See *Note 9 - Allowance for Credit Losses* to the accompanying combined financial statements and *Note 1 - Summary of Significant Accounting Policies* on pages F-18 to F-19 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, for more information.

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 16 presents consolidated bonds and consolidated discount notes for the most recent five quarters.

Figure 16 - Consolidated Obligations Outstanding (Carrying Value)



The carrying value of consolidated obligations totaled $1,009.6 billion at March 31, 2019, a decrease of $19.9 billion, or 1.9%, from $1,029.5 billion at December 31, 2018, in line with the decrease in total assets, and mainly consisted of a 4.5% decrease in consolidated discount notes.

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 primarily to LIBOR or SOFR, and have maturities ranging from three months to 30 years. The carrying value of consolidated bonds was $602.5 billion at March 31, 2019, a decrease of $1.0 billion, or 0.2%, from $603.5 billion at December 31, 2018. Consolidated bonds represented 59.7% and 58.6% of total consolidated obligations outstanding at March 31, 2019 and December 31, 2018.

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 $407.1 billion at March 31, 2019, a decrease of $19.0 billion, or 4.5%, from $426.0 billion at December 31, 2018. Consolidated discount notes represented 40.3% and 41.4% of total consolidated obligations outstanding at March 31, 2019 and December 31, 2018.

Figures 17 and 18 present the principal amount of consolidated obligations by product type and by contractual maturity at March 31, 2019 and December 31, 2018.

Figure 17 - Consolidated Obligations by Product Type

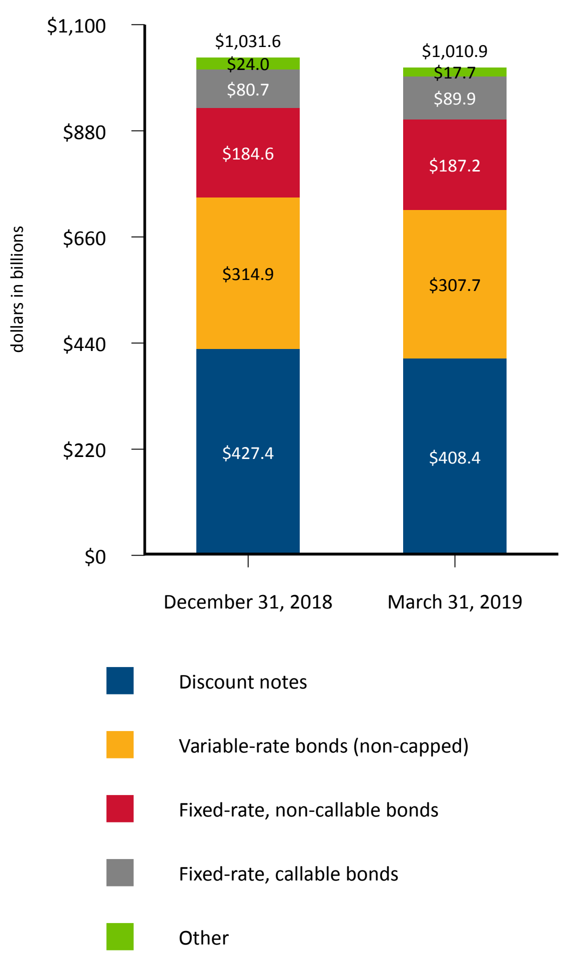


Figure 18 - Consolidated Obligations by Contractual Maturity

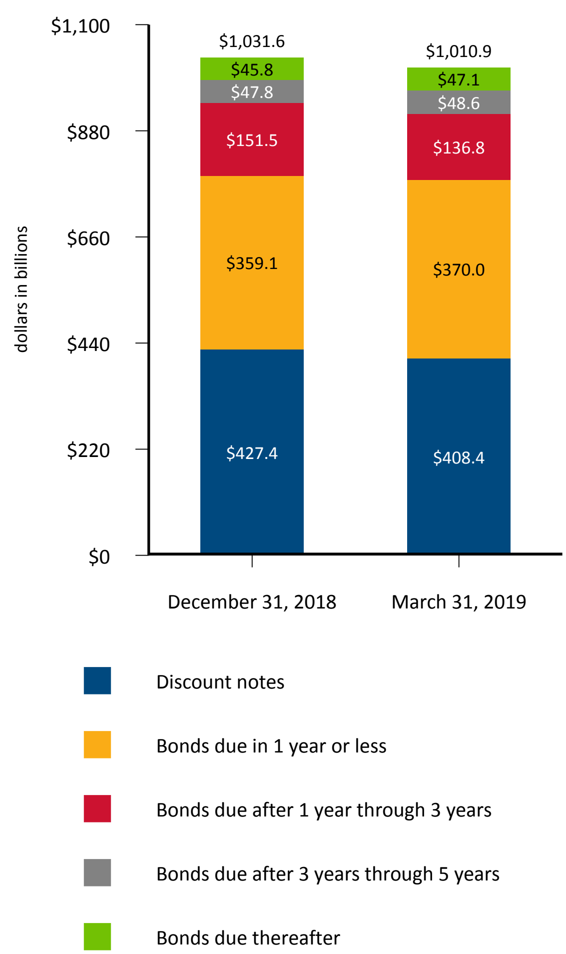


Table 10 presents the composition of consolidated obligations by product type and by contractual maturity at March 31, 2019 and December 31, 2018.

Table 10 - Types of Consolidated Obligations by Contractual Maturity
(dollars in millions)

	March 31, 2019		December 31, 2018		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Consolidated Discount Notes						
Overnight	$ 17,767	1.7%	$ 18,397	1.8%	$ (630)	(3.4)%
Due after 1 day through 30 days	151,178	15.0%	162,924	15.8%	(11,746)	(7.2)%
Due after 30 days through 90 days	185,082	18.3%	196,289	19.0%	(11,207)	(5.7)%
Due after 90 days through 1 year	54,345	5.3%	49,757	4.8%	4,588	9.2 %
Total principal amount	408,372	40.3%	427,367	41.4%	(18,995)	(4.4)%
Consolidated Bonds						
Fixed-rate, non-callable						
Due in 1 year or less	83,080	8.2%	73,303	7.1%	9,777	13.3 %
Due after 1 year through 3 years	63,128	6.3%	72,139	7.0%	(9,011)	(12.5)%
Due after 3 years through 5 years	23,528	2.3%	22,012	2.1%	1,516	6.9 %
Thereafter	17,498	1.7%	17,161	1.6%	337	2.0 %
Total principal amount	187,234	18.5%	184,615	17.8%	2,619	1.4 %
Fixed-rate, callable						
Due in 1 year or less	12,691	1.3%	6,194	0.6%	6,497	104.9 %
Due after 1 year through 3 years	31,979	3.2%	30,569	3.0%	1,410	4.6 %
Due after 3 years through 5 years	20,762	2.1%	20,634	2.0%	128	0.6 %
Thereafter	24,464	2.4%	23,372	2.3%	1,092	4.7 %
Total principal amount	89,896	9.0%	80,769	7.9%	9,127	11.3 %
Variable-rate (non-capped)(1)						
Due in 1 year or less	271,871	26.9%	272,116	26.4%	(245)	(0.1)%
Due after 1 year through 3 years	35,781	3.6%	42,533	4.1%	(6,752)	(15.9)%
Due after 3 years through 5 years	—	—	250	—	(250)	(100)%
Thereafter	—	—	—	—	—	—
Total principal amount	307,652	30.5%	314,899	30.5%	(7,247)	(2.3)%
Step-up/step-down, callable						
Due in 1 year or less	1,861	0.2%	7,085	0.7%	(5,224)	(73.7)%
Due after 1 year through 3 years	5,362	0.5%	5,704	0.6%	(342)	(6.0)%
Due after 3 years through 5 years	4,108	0.4%	4,713	0.5%	(605)	(12.8)%
Thereafter	4,135	0.4%	4,220	0.4%	(85)	(2.0)%
Total principal amount	15,466	1.5%	21,722	2.2%	(6,256)	(28.8)%
Other						
Due in 1 year or less	471	—	435	—	36	8.3 %
Due after 1 year through 3 years	610	0.1%	590	0.1%	20	3.4 %
Due after 3 years through 5 years	180	—	195	—	(15)	(7.7)%
Thereafter	1,014	0.1%	1,024	0.1%	(10)	(1.0)%
Total principal amount	2,275	0.2%	2,244	0.2%	31	1.4 %
Total principal amount consolidated bonds	602,523	59.7%	604,249	58.6%	(1,726)	(0.3)%
Total principal amount	1,010,895	100.0%	1,031,616	100.0%	$ (20,721)	(2.0)%
Other adjustments(2)	(1,307)		(2,091)			
Total consolidated obligations	$ 1,009,588		$ 1,029,525			

(1) Includes $39.2 billion and $11.6 billion of SOFR-linked consolidated bonds at March 31, 2019 and December 31, 2018.
(2) Consists of hedging and fair value option valuation adjustments, unamortized premiums and discounts, and combining adjustments.

Table 11 presents cash flows related to consolidated obligations, which illustrates payments exceeding proceeds for the three months ended March 31, 2019 and 2018, resulting in lower consolidated obligations outstanding. The volume of both net proceeds and total payments of discount notes increased and the volume of both net proceeds and total payments of bonds decreased during the three months ended March 31, 2019, as compared to the three months ended March 31, 2018, due to a change in demand from short-term bonds to discount notes.

Table 11 - Net Proceeds and Payments for Consolidated Obligations
(dollars in millions)

	Three Months Ended March 31,		
	2019	2018	Change
Net proceeds from issuance of consolidated obligations			
Discount notes	$ 1,787,253	$ 1,783,715	$ 3,538
Bonds	129,520	130,643	(1,123)
Net proceeds	1,916,773	1,914,358	$ 2,415
Payments for maturing and retiring consolidated obligations			
Discount notes	1,806,335	1,786,211	$ 20,124
Bonds	131,225	143,415	(12,190)
Total payments	1,937,560	1,929,626	$ 7,934
Net change	$ (20,787)	$ (15,268)	

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 12 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, 2019, investor preference for variable-rate consolidated obligations declined compared to the three months ended March 31, 2018. Investor expectations that interest rates will remain steady resulted in a decline in demand for variable-rate consolidated obligations.

Table 12 - Percentage of Total Consolidated Bonds Issued by Bond Type

	Three Months Ended March 31,	
	2019	2018
Single-index, variable-rate(1)	70.9%	82.7%
Fixed-rate, noncallable	15.9%	10.1%
Fixed-rate, callable	12.8%	5.8%
Step-up/step-down(2)	0.4%	1.4%
Total	100.0%	100.0%

(1) Includes $27.6 billion in SOFR-linked consolidated bonds issued during the three months ended March 31, 2019. SOFR-linked consolidated bonds represents 30.0% of the single-index variable-rate consolidated bonds issued during the three months ended March 31, 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 $8.3 billion at March 31, 2019, an increase of $0.8 billion, or 10.2%, from December 31, 2018. 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 90.8% and 89.9% of deposits at March 31, 2019 and December 31, 2018, 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 19 presents the components of GAAP capital and the GAAP capital-to-assets ratio for the most recent five quarters.

Figure 19 - GAAP Capital

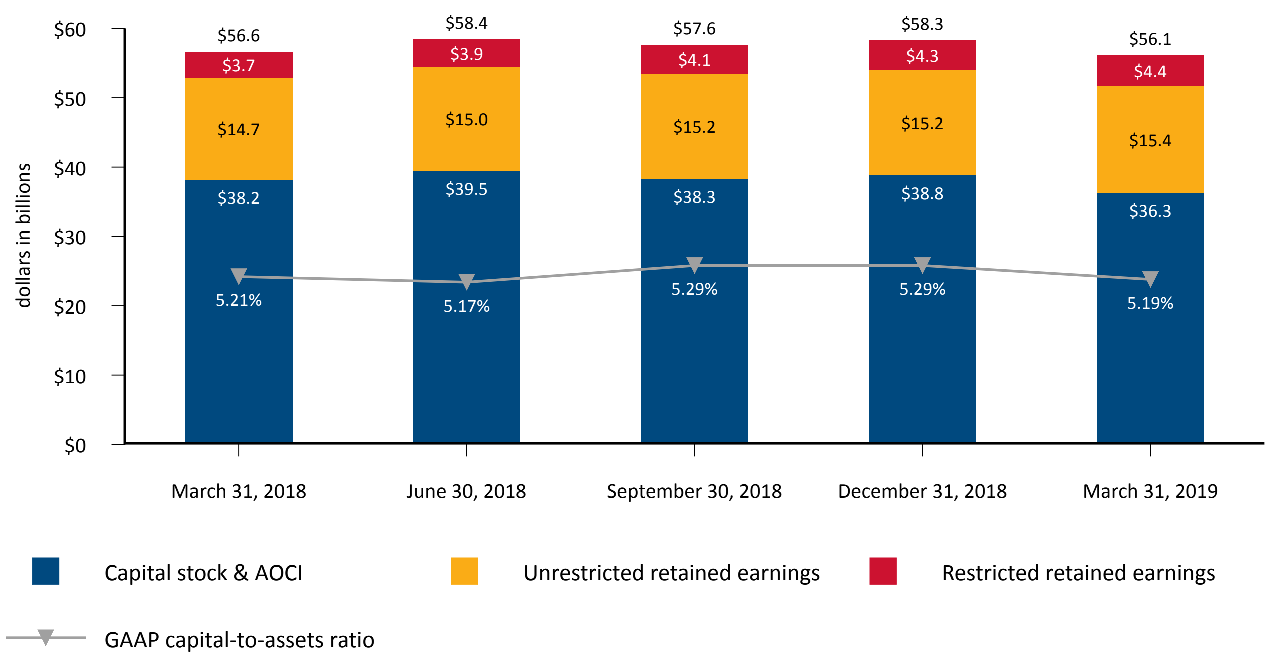


Table 13 - Total Capital and Capital-to-Assets Ratios
(dollars in millions)

	March 31, 2019	December 31, 2018	Change
Capital stock	$ 35,785	$ 38,498	$ (2,713)
Retained earnings:			
Unrestricted	15,408	15,241	167
Restricted	4,441	4,263	178
Total retained earnings	19,849	19,504	345
AOCI	527	342	185
Total GAAP capital	56,161	58,344	(2,183)
Exclude: AOCI	(527)	(342)	(185)
Add: Mandatorily redeemable capital stock	1,035	1,062	(27)
Total combined regulatory capital(1)	$ 56,669	$ 59,064	$ (2,395)
Total assets	$ 1,082,456	$ 1,102,850	$ (20,394)
Combined GAAP capital-to-assets ratio	5.19%	5.29%	
Combined regulatory capital-to-assets ratio(2)	5.24%	5.36%	

(1) 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.
(2) 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 13 - Capital* to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

GAAP Capital. Total GAAP capital was $56.2 billion at March 31, 2019, a decrease of 3.7% from $58.3 billion at December 31, 2018. This decrease was due primarily to a decrease in capital stock. The combined GAAP capital-to-assets ratio was 5.19% at March 31, 2019, a decrease of 10 basis points from 5.29% at December 31, 2018.

Capital Stock. Capital stock was $35.8 billion at March 31, 2019, a decrease of 7.0% from $38.5 billion at December 31, 2018, resulting from the net repurchases and redemptions of activity-based capital stock driven by the decrease in advances.

Retained Earnings. Retained earnings grew to $19.8 billion at March 31, 2019, an increase of 1.8% from $19.5 billion at December 31, 2018, resulting from net income of $900 million, partially offset by dividends of $570 million. Unrestricted retained earnings were $15.4 billion at March 31, 2019, a growth of 1.1% from $15.2 billion at December 31, 2018. Restricted retained earnings were $4.4 billion at March 31, 2019, a growth of 4.2% from $4.3 billion at December 31, 2018.

Figures 20 and 21 present the components of capital as a percentage of total GAAP capital at March 31, 2019 and December 31, 2018.

Figure 20 - Capital Components as a Percentage of Total GAAP Capital at March 31, 2019

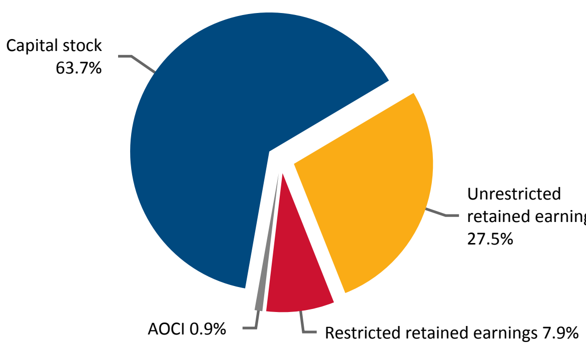
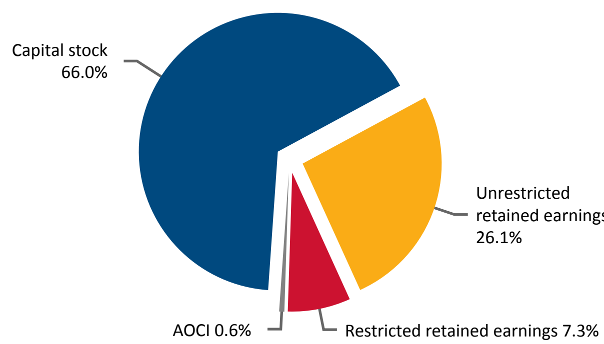


Figure 21 - Capital Components as a Percentage of Total GAAP Capital at December 31, 2018



Regulatory Capital. Total combined regulatory capital was $56.7 billion at March 31, 2019, a decrease of 4.1% from $59.1 billion at December 31, 2018, due primarily to a decrease in capital stock.

Combined Results of Operations

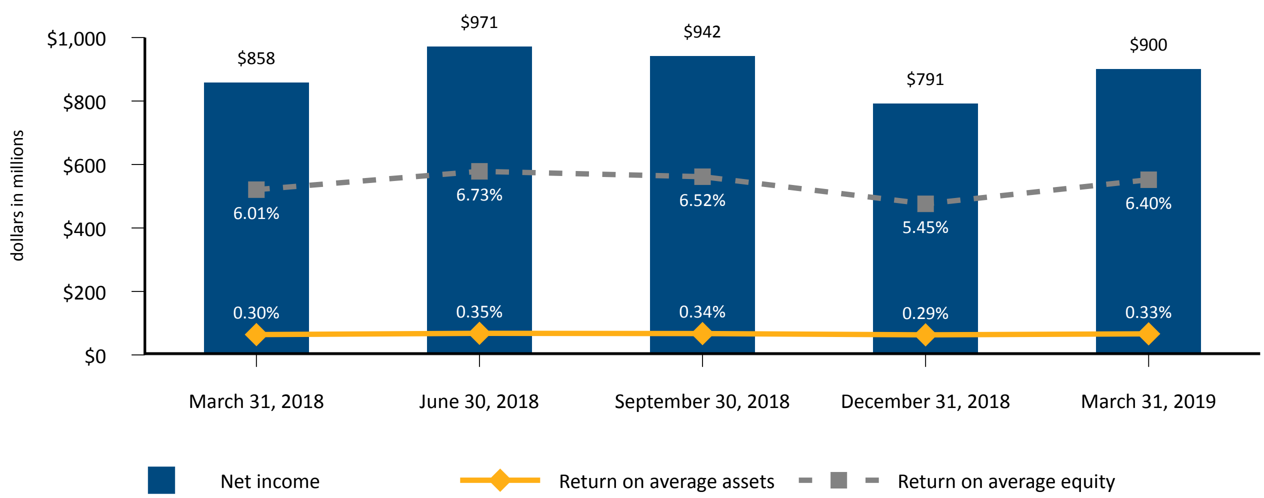
Net Income

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 structures, the FHLBanks generally earn a narrow net interest spread. Accordingly, the FHLBanks' net income is relatively small compared to total assets and total liabilities.

With the adoption of the new hedge accounting guidance, beginning on January 1, 2019, changes in fair value of the derivative and the hedged item attributable to the hedged risk for designated fair value hedges are recorded in net interest income in the same line as the earnings effect of the hedged item. For designated cash flow hedges, the entire change in the fair value of the derivative (assuming it is included in the assessment of hedge effectiveness) is reported in other comprehensive income (OCI) until the hedged transaction affects earnings. At that time, this amount is reclassified from AOCI and recorded in net interest income in the same income statement line as the earnings effect of the hedged item. Prior to January 1, 2019, for both fair value and cash flow hedges, any hedge ineffectiveness (which represented the amount by which the change in the fair value of the derivative differed from the change in the fair value of the hedge item or the variability in the cash flows of the forecasted transaction attributable to the hedged risk) was recorded in non-interest income as net gains (losses) on derivatives and hedging activities.

Figure 22 presents net income, return on average assets, and return on average equity for the most recent five quarters.

Figure 22 - Net Income



Net income was $900 million for the three months ended March 31, 2019, an increase of 4.9% compared to the three months ended March 31, 2018, resulting primarily from an increase in non-interest income.

Table 14 - Changes in Net Income
(dollars in millions)

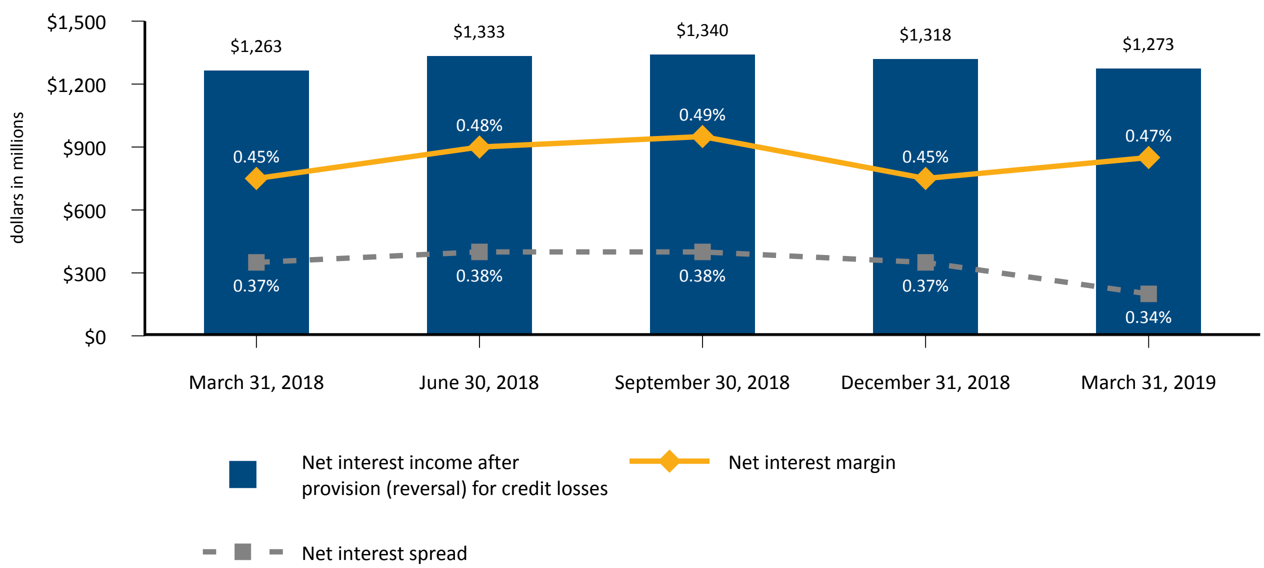
	Three Months Ended March 31,		
	2019	2018(1)	Change
Net interest income after provision (reversal) for credit losses	$ 1,273	$ 1,263	$ 10
Non-interest income	63	4	59
Non-interest expense	334	312	22
Affordable Housing Program assessments	102	97	5
Net income	$ 900	$ 858	$ 42

(1) Prior period amounts do not conform to new hedge accounting guidance adopted January 1, 2019.

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 23 presents net interest income after provision for credit losses, net interest margin, and net interest spread for the most recent five quarters.

Figure 23 - Net Interest Income after Provision (Reversal) for Credit Losses



Net interest income after provision (reversal) for credit losses was $1,273 million for the three months ended March 31, 2019, an increase of 0.8% compared to the three months ended March 31, 2018. Net interest margin was 0.47% for the three months ended March 31, 2019, an increase of 2 basis points compared to the three months ended March 31, 2018.

Table 15 - Net Interest Income after Provision (Reversal) for Credit Losses
(dollars in millions)

	Three Months Ended March 31,		
	2019	2018(1)	Change
Interest income			
Advances	$ 4,772	$ 3,347	$ 1,425
Investments and other	2,290	1,632	658
Mortgage loans held for portfolio	562	463	99
Total interest income	7,624	5,442	2,182
Interest expense			
Consolidated obligations - Discount notes	2,561	1,515	1,046
Consolidated obligations - Bonds	3,733	2,621	1,112
Total consolidated obligations	6,294	4,136	2,158
Deposits and mandatorily redeemable capital stock	56	41	15
Total interest expense	6,350	4,177	2,173
Net interest income	1,274	1,265	9
Provision (reversal) for credit losses	1	2	(1)
Net interest income after provision (reversal) for credit losses	$ 1,273	$ 1,263	$ 10

(1) Prior period amounts do not conform to new hedge accounting guidance adopted January 1, 2019.

Table 16 presents average balances of and yields on the major categories of interest-earning assets and interest-bearing liabilities; net interest spread, which is the difference between the annualized yield on total interest-earning assets and the annualized yield on total interest-bearing liabilities; and net interest margin, which is net interest income expressed as a percentage of the average balance of total interest-earning assets. Due to the FHLBanks' cooperative structures, the FHLBanks generally earn a narrow net interest spread.

Table 16 - Spread and Yield Analysis
(dollars in millions)

	Three Months Ended March 31,					
	2019			2018(1)		
	Average Balance	Interest	Annualized Yield	Average Balance	Interest	Annualized Yield
Interest-bearing deposits and other	$ 13,750	$ 86	2.54%	$ 7,821	$ 31	1.61%
Securities purchased under agreements to resell	46,528	285	2.48%	22,231	81	1.48%
Federal funds sold	75,757	459	2.46%	101,863	370	1.47%
Investment securities(2)(3)	191,506	1,460	3.09%	181,781	1,150	2.57%
Advances	697,747	4,772	2.77%	767,801	3,347	1.77%
Mortgage loans	63,227	562	3.60%	54,373	463	3.45%
Total interest-earning assets	1,088,515	7,624	2.84%	1,135,870	5,442	1.94%
Other non-interest-earning assets	6,872			5,693		
Fair-value adjustment on investment securities(3)	2,284			2,549		
Total assets	$ 1,097,671			$ 1,144,112		
Liabilities and Capital						
Consolidated obligations - Discount notes	$ 423,635	2,561	2.45%	$ 424,410	1,515	1.45%
Consolidated obligations - Bonds	598,884	3,733	2.53%	646,042	2,621	1.65%
Deposits and mandatorily redeemable capital stock	8,404	56	2.70%	8,704	41	1.91%
Total interest-bearing liabilities	1,030,923	6,350	2.50%	1,079,156	4,177	1.57%
Non-interest-bearing liabilities	9,722			7,030		
Total liabilities	1,040,645			1,086,186		
Capital	57,026			57,926		
Total liabilities and capital	$ 1,097,671			$ 1,144,112		
Net interest income		$ 1,274			$ 1,265	
Net interest spread			0.34%			0.37%
Net interest margin			0.47%			0.45%
Total interest-earning assets to total interest-bearing liabilities	105.59%			105.26%		

(1) Prior period amounts do not conform to new hedge accounting guidance adopted January 1, 2019.
(2) Investment securities consist of Trading, AFS, and HTM securities.
(3) The average balances of AFS securities and HTM securities are reflected at amortized cost; therefore, the resulting yields do not give effect to changes in fair value or the non-credit component of previously recognized other-than-temporary impairment (OTTI) reflected in AOCI.

Changes in both 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 17 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 17 - Rate and Volume Analysis
(dollars in millions)

	Three Months Ended March 31, 2019 vs. 2018		
	Volume	Rate	Total
Interest Income			
Interest-bearing deposits and other	$ 31	$ 24	$ 55
Securities purchased under agreements to resell	126	78	204
Federal funds sold	(113)	202	89
Investment securities(1)	65	245	310
Advances	(329)	1,754	1,425
Mortgage loans	78	21	99
Total interest income	(142)	2,324	2,182
Interest Expense			
Consolidated obligations - Discount notes	(3)	1,049	1,046
Consolidated obligations - Bonds	(204)	1,316	1,112
Deposits and mandatorily redeemable capital stock	(1)	16	15
Total interest expense	(208)	2,381	2,173
Changes in net interest income	$ 66	$ (57)	$ 9

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

Net interest income was $1,274 million for the three months ended March 31, 2019, an increase of 0.7% compared to the three months ended March 31, 2018. Interest income grew to $7,624 million for the three months ended March 31, 2019, an increase of 40.1% compared to the three months ended March 31, 2018, due primarily to a 90 basis point increase in the yield on interest-earning assets, principally advances. Interest expense was $6,350 million for the three months ended March 31, 2019, an increase of 52.0% compared to the three months ended March 31, 2018, due primarily to a 93 basis point increase in the yield on interest-bearing liabilities.

Factors Affecting Net Interest Income.

Advances. Interest income on advances was $4,772 million for the three months ended March 31, 2019, an increase of 42.6% compared to the three months ended March 31, 2018, resulting primarily from a 100 basis point increase in the yield on advances. The increase in yield on advances was the result of higher interest rates on advances and the effect of derivatives and hedging activities on interest income from advances, driven by the higher interest-rate environment. (See *Table 18* for additional information regarding the effect of derivatives and hedging activities on net interest income.)

Mortgage Loans. Interest income on mortgage loans was $562 million for the three months ended March 31, 2019, an increase of 21.4% compared to the three months ended March 31, 2018, resulting primarily from an increase in the average balance of mortgage loans. The average balance of mortgage loans was $63.2 billion, an increase of 16.3%, as the FHLBanks continued to grow their mortgage loan portfolios.

Total Investments. Interest income on investments was $2,290 million for the three months ended March 31, 2019, an increase of 40.3% compared to the three months ended March 31, 2018, resulting primarily from a 52 basis point increase in the yield on investment securities and a 99 basis point increase in the yield on federal funds sold. The increases in yields on investment securities and federal funds sold were driven by increases in market interest rates.

Consolidated Obligations. Interest expense on consolidated obligations was $6,294 million for the three months ended March 31, 2019, an increase of 52.2% compared to the three months ended March 31, 2018, resulting from an 88 basis point increase in the yield on consolidated bonds and a 100 basis point increase in the yield on consolidated discount notes. The increases in the yields on consolidated bonds and consolidated discount notes were due to higher interest rates and the effect of derivatives and hedging activities on interest expense from consolidated obligations, driven by the higher interest rate environment. (See *Table 18* 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. Table 18 presents the effect of derivatives and hedging activities on net interest income.

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.

With the adoption of the new hedge accounting guidance, beginning on January 1, 2019, changes in fair value of the derivative and the hedged item attributable to the hedged risk for designated fair value hedges are recorded in net interest income in the same line as the earnings effect of the hedged item. For designated cash flow hedges, the entire change in the fair value of the derivative is reported in OCI until the hedged transaction affects earnings. Prior to January 1, 2019, for both fair value and cash flow hedges, any hedge ineffectiveness was recorded in non-interest income as net gains (losses) on derivatives and hedging activities. The change in the hedging guidance decreased net interest income by $41 million during the three months ended March 31, 2019, prior to the adoption of the new hedge accounting guidance this amount would have been included in non-interest income.

(See *Note 10 - Derivatives and Hedging Activities* to the accompanying combined financial statements for additional information on the effect of derivatives and hedging activities.)

Table 18 - Effect of Derivatives and Hedging Activities on Net Interest Income
(dollars in millions)

	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)

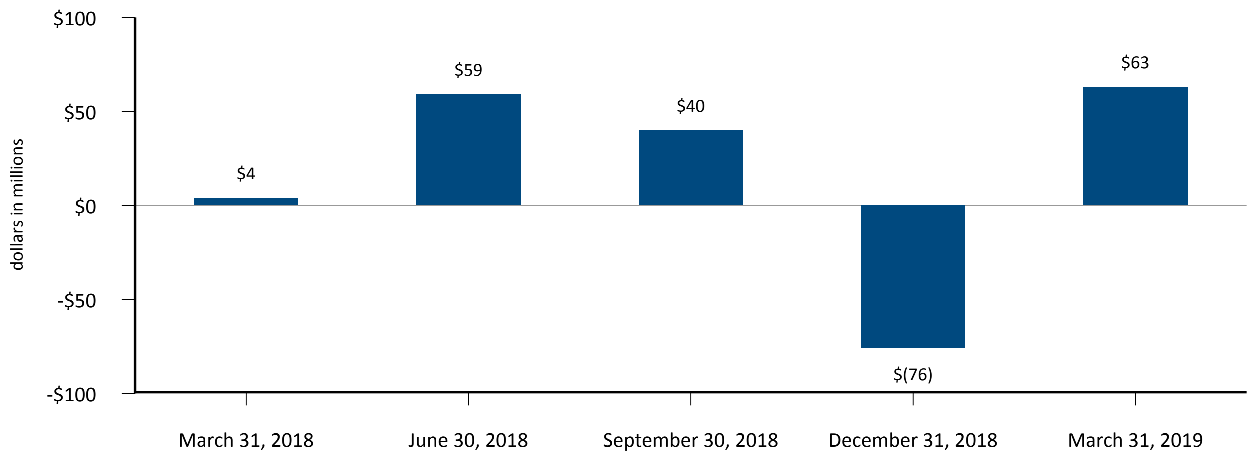
	Three Months Ended March 31, 2018(1)					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (8)	$ 12	$ (3)	$ (4)	$ —	$ (3)
Net interest settlements on derivatives	(21)	(68)	—	(36)	(41)	(166)
Total effect on net interest income	$ (29)	$ (56)	$ (3)	$ (40)	$ (41)	$ (169)

(1) Prior period amounts do not conform to new hedge accounting guidance adopted January 1, 2019.

Non-Interest Income

Non-interest income consists of certain realized and unrealized gains (losses) on investment securities and derivatives activities, gains on litigation settlements, and other non-interest-earning activities. Figure 24 presents non-interest income for the most recent five quarters.

Figure 24 - Non-Interest Income



Non-interest income was $63 million for the three months ended March 31, 2019, an increase of $59 million compared to the three months ended March 31, 2018, due primarily to net gains on investment securities and net gains on financial instruments held under fair value option, partially offset by net losses on derivatives and hedging activities.

Table 19 - Changes in Non-Interest Income
(dollars in millions)

	Three Months Ended March 31,		
	2019	2018	Change
Net other-than-temporary impairment losses	$ (2)	$ (2)	$ —
Net gains (losses) on investment securities	105	(61)	166
Net gains (losses) on financial instruments held under fair value option	23	(29)	52
Net gains (losses) on derivatives and hedging activities	(108)	55	(163)
Net gains (losses) on debt extinguishments	(10)	—	(10)
Other, net	55	41	14
Total non-interest income (loss)	$ 63	$ 4	$ 59

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 resulted from an increase in net gains on trading securities. Net gains on trading securities were $105 million for the three months ended March 31, 2019, an increase of $166 million compared to the three months ended March 31, 2018.

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 20* 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.)

Gains (Losses) on Derivatives and Hedging Activities. Fair value estimates for an FHLBank's derivatives and hedging positions fluctuate with changes in market conditions. 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.

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. Hedge ineffectiveness occurs when changes in the fair value of the derivative and the associated hedged item do not perfectly offset. With the adoption of the new hedge accounting guidance, beginning January 1, 2019, hedge ineffectiveness is no longer recognized within this line item. Prior to January 1, 2019, for both fair value and cash flow hedges, the amount by which the change in the fair value of the derivative differed from the change in the fair value of the hedged item or in the variability in the cash flows of the forecasted transaction attributable to the hedged risk was recorded in non-interest income as net gains (losses) on derivatives and hedging activities. (See *Note 10 - Derivatives and Hedging Activities* to the accompanying combined financial statements for additional information on the financial effect of derivatives and hedging activities.) Table 20 presents the effect of derivatives and hedging activities on non-interest income.

Table 20 - Effect of Derivatives and Hedging Activities on Non-Interest Income
(dollars in millions)

	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 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 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

	Three Months Ended March 31, 2018(1)							
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Balance Sheet	Intermediary Positions and Other	Total
Net gains (losses) on derivatives and hedging activities								
Gains (losses) related to fair value hedge ineffectiveness	$ 19	$ 17	$ —	$ 9	$ —	$ —	$ —	$ 45
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	—	1	—	—	1
Gains (losses) related to derivatives not designated as hedging instruments	62	74	9	(151)	21	7	(9)	13
Price alignment amount	—	—	—	—	—	—	(4)	(4)
Total net gains (losses) on derivatives and hedging activities	81	91	9	(142)	22	7	(13)	55
Net gains (losses) on trading securities	—	(58)	—	—	—	—	—	(58)
Net gains (losses) on financial instruments held at fair value	(58)	—	(4)	33	—	—	—	(29)
Total effect on non-interest income	$ 23	$ 33	$ 5	$ (109)	$ 22	$ 7	$ (13)	$ (32)

(1) Prior period amounts do not conform to new hedge accounting guidance adopted January 1, 2019.

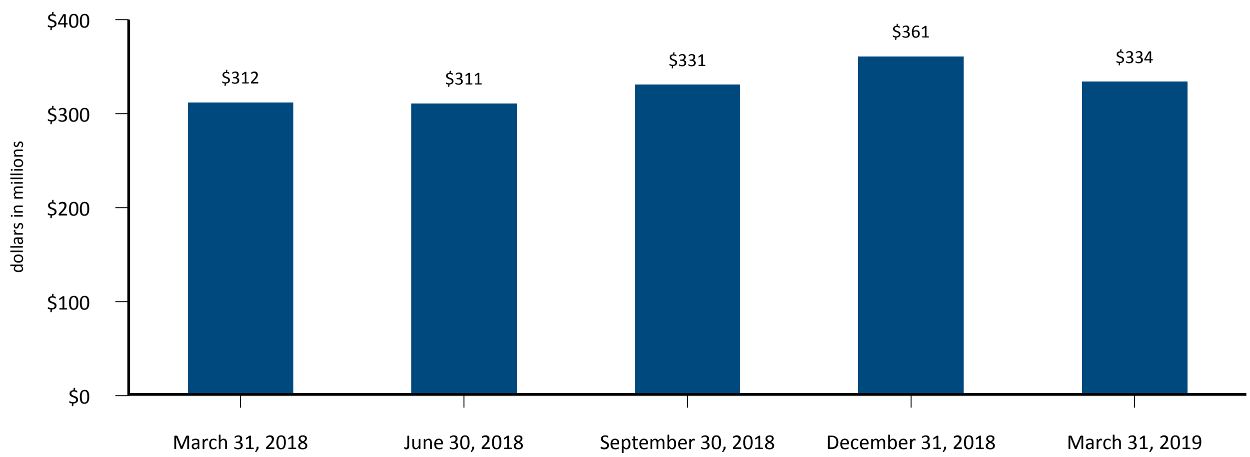
Net losses on derivatives and hedging activities were $108 million for the three months ended March 31, 2019 and resulted from losses related to derivatives not designated as qualifying accounting hedges under GAAP. These net losses resulted primarily from losses related to economic hedges of investment securities and advances, partially offset by gains associated with economic hedges of consolidated bonds.

Net gains on derivatives and hedging activities were $55 million for the three months ended March 31, 2018, consisting primarily of gains related to fair value hedge ineffectiveness and derivatives not designated as qualifying accounting hedge under GAAP.

Non-Interest Expense

Non-interest expense consists of compensation and benefits, other operating expenses, FHFA expenses, Office of Finance expenses, and other expenses. Figure 25 presents non-interest expense for the most recent five quarters.

Figure 25 - Non-Interest Expense



Non-interest expense was $334 million for the three months ended March 31, 2019, an increase of 7.1% compared to the three months ended March 31, 2018. The increase in non-interest expense was principally related to compensation and benefits and other operating expenses.

Table 21 - Changes in Non-Interest Expense
(dollars in millions)

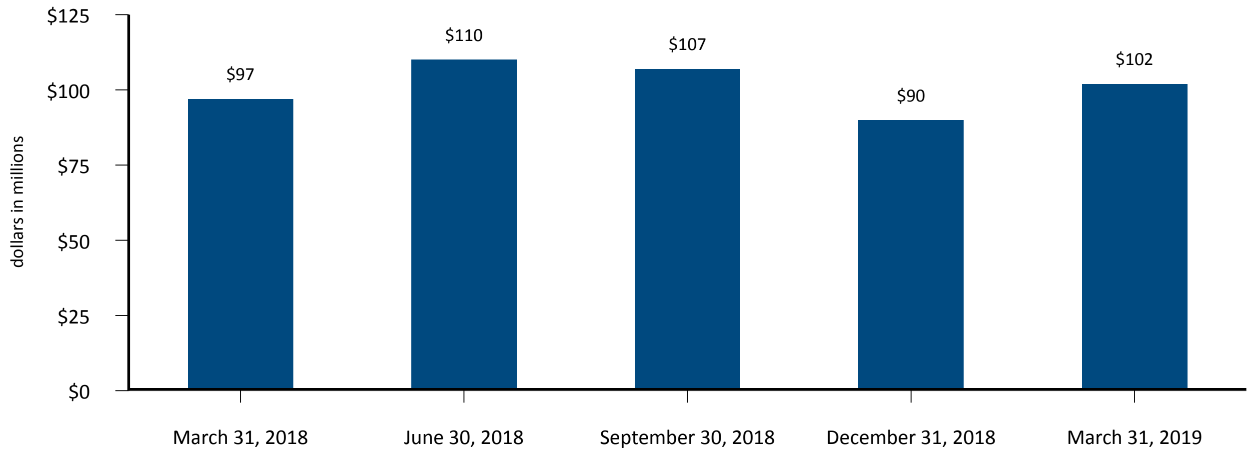
	Three Months Ended March 31,		
	2019	2018	Change
Compensation and benefits	$ 180	$ 170	$ 10
Other operating expenses	107	93	14
Federal Housing Finance Agency	18	16	2
Office of Finance	15	15	—
Other expenses	14	18	(4)
Total non-interest expense	$ 334	$ 312	$ 22

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 26 presents AHP assessments for the most recent five quarters.

Figure 26 - 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 $185 million for the three months ended March 31, 2019, an increase of 8.2% compared to the three months ended March 31, 2018, due primarily to higher fair value gains on AFS securities, partially offset by net unrealized losses relating to cash flow hedging activities.

Table 22 - Comprehensive Income
(dollars in millions)

	Three Months Ended March 31,		
	2019	2018	Change
Net income	$ 900	$ 858	$ 42
Other comprehensive income			
Changes in fair value of AFS securities			
Net unrealized gains (losses) on AFS securities	230	17	213
Net change in fair value of other-than-temporarily impaired AFS securities	5	1	4
Total changes in fair value of AFS securities	235	18	217
Changes in non-credit OTTI losses			
Net amount of AFS and HTM impairment losses reclassified to (from) non-interest income	—	(1)	1
Accretion of non-credit portion on HTM securities	14	17	(3)
Total changes in non-credit OTTI losses	14	16	(2)
Net unrealized gains (losses) relating to hedging activities	(70)	136	(206)
Other	6	1	5
Total other comprehensive income (loss)	185	171	14
Comprehensive income	$ 1,085	$ 1,029	$ 56

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, which have not been other-than-temporarily impaired, is due primarily to changes in interest rates, credit spreads, the passage of time, and volatility. The net change in the fair value of other-than-temporarily impaired AFS securities is driven by housing prices and the economic outlook, as well as changes in interest rates, credit spreads, the passage of time, and volatility. The distinction between the two categories is whether the AFS security has ever incurred an OTTI loss.

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, the accretion of the non-credit portion on HTM securities, and the reclassification of (gains) losses of the non-credit portion on AFS securities included in net income.

Net Amount of AFS and HTM Impairment Losses Reclassified to (from) Non-interest Income. For AFS and HTM securities with OTTI, the net decrease or increase in the non-credit component is 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, 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 either the United States or any government agency, but have historically received the same credit rating as the government bond credit rating of the United States. Moody's, S&P, 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, 2019, the FHLBanks' consolidated obligations were rated Aaa/AA+ (with outlook stable) by Moody's and S&P. 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, 2019, the FHLBanks maintained continual access to funding and managed their debt issuance to meet the needs of their members. The FHLBanks' short-term funding was generally driven by member demand and was achieved through the issuance of consolidated discount notes and short-term consolidated bonds during the three months ended March 31, 2019. Access to short-term debt markets has been supported by strong demand from investors. This has led to advantageous funding opportunities and continued utilization of debt maturing in one year or less. (See *Combined Financial Condition - Consolidated Obligations* for more information on short-term consolidated obligations.)

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 page 27 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, 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 FHLBank system risks, including by tracking the funding gap, which is a measure of the difference in the projected cash flows from 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 from 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. In the first quarter of 2019, each of the FHLBanks was required, in accordance with the FHFA's Advisory Bulletin on liquidity (Liquidity Guidance AB), to measure specified funding gap ratios for three-month and one-year maturity horizons. During the three months ended March 31, 2019, each of the FHLBanks was in compliance with the FHFA's funding gap requirements.

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 regulations require each FHLBank to:

- maintain contingency liquidity sufficient to meet liquidity needs that shall, at a minimum, cover five business days of inability to access consolidated obligations in the debt markets;

- 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, through short-term investments, an amount at least equal to its anticipated cash outflows under two hypothetical scenarios (the Former Scenarios).

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. As defined by FHFA regulations, contingency liquidity means the sources of cash an FHLBank may use to meet its operational requirements when its access to capital markets is impeded, and includes:

- marketable securities with a maturity of one year or less;
- self-liquidating assets with a maturity of seven days or less;
- assets that are generally accepted as collateral in the repurchase agreement market; and
- irrevocable lines of credit from financial institutions rated not lower than the second highest rating category by a nationally recognized statistical rating organization.

In August 2018, the FHFA issued the Liquidity Guidance AB. Beginning March 31, 2019, the two Former Scenarios for liquidity measurement were discontinued and replaced with a two-component base case liquidity metric.

- 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 FHFA provided initial, phased-in, measures for the cash flow component beginning March 31, 2019 and full measurement on December 31, 2019; and

- 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. This component was fully implemented March 31, 2019.

In addition, each of the FHLBanks will be required to perform and report to FHFA the results of an annual liquidity stress test. The Liquidity Guidance AB may require the FHLBanks to hold an additional amount of liquid assets to meet the requirements of the guidance. (See *Legislative and Regulatory Developments* on page 91 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, for additional information.)

During the three months ended March 31, 2019, each of the FHLBanks was in compliance with the FHFA's regulatory 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. While 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, 2019, each FHLBank was in compliance with its statutory minimum capital requirements. (See *Note 13 - Capital* to the accompanying combined financial statements for additional information regarding minimum regulatory capital requirements.) Regulatory guidance requires each FHLBank to 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, 2018, 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 (1) OTTI for investment securities; (2) fair value estimates; (3) derivative hedging relationships; (4) amortization of premiums and accretion of discounts on investment securities and purchased mortgage loans; and (5) calculation of allowance for credit losses for each identified portfolio segment of financing receivables. For a description of accounting policies related to these estimates and assumptions, see *Note 1 - Summary of Significant Accounting Policies* in the accompanying combined financial statements and *Note 1 - Summary of Significant Accounting Policies* on pages F-12 to F-23 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018.

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, 2018. 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 80 to 88 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018. Each FHLBank describes its critical accounting estimates in its periodic reports filed with the SEC.

Derivative Hedging Relationships

Beginning January 1, 2019, the FHLBanks adopted new hedge accounting guidance, which, among other things, impacts the presentation of gains (losses) on derivatives and hedging activities for qualifying hedges. Changes in the fair value of a derivative that is designated and qualifies as a fair value hedge, along with changes in the fair value of the hedged asset or liability that are attributable to the hedged risk, are recorded in net interest income in the same line as the earnings effect of the hedged item. Changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge are recorded in OCI. These amounts remain in AOCI, a component of capital, until earnings are affected by the variability of the cash flows of the hedged transaction, at which time these amounts are reclassified from AOCI to the same income statement line as the earnings effect of the hedged item. Net gains (losses) on derivatives and hedging activities for qualifying hedges recorded in net interest income include unrealized and realized gains (losses), which include net interest settlements.

See *Note 1 - Summary of Significant Accounting Policies* and *Note 10 - Derivatives and Hedging Activities* to the accompanying combined financial statements for additional discussion regarding the FHLBanks' accounting for derivatives and hedging activities, including the accounting for derivative hedging relationships prior to the adoption of the new hedging guidance on January 1, 2019.

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* on pages 89 to 92 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, for a description of certain legislative and regulatory developments that occurred prior to the publication of that report.)

Office of Comptroller of the Currency, the Federal Reserve Board, the FDIC, the Farm Credit Administration, and the FHFA Interim Final Rule on Margin and Capital Requirements for Covered Swap Entities. On March 19, 2019, the Office of the Comptroller of the Currency, the Federal Reserve Board, the FDIC, the Farm Credit Administration, and the FHFA (collectively, the Agencies) jointly adopted interim final rules (the Interim Rule) amending the Agencies' regulations that established minimum margin and capital requirements (the Margin Rules) for registered swap dealers, major swap participants, security-based swap dealers, and major security-based swap participants (Covered Swap Entities) under the jurisdiction of one of the Agencies. The Interim Rule was adopted to assist Covered Swap Entities and their counterparties upon the expected withdrawal, currently delayed until October 31, 2019, of the United Kingdom (UK) from the European Union (EU), commonly referred to as "Brexit." If the UK withdraws from the EU without a negotiated agreement between the UK and the EU, Covered Swap Entities located within the UK may not be authorized to continue providing certain financial services to swap counterparties that are located in the EU. The Interim Rule would permit Covered Swap Entities located within the UK to transfer their non-cleared swap portfolios to affiliates or other related entities located within the EU or the United States without subjecting legacy swaps (those swaps entered into before the compliance date of the Margin Rules) to the margin requirements of the Margin Rules, provided that the transfer is made within a year of a non-negotiated Brexit and there are no other amendments to the transactions.

The FHLBanks have UK-based non-cleared swap counterparties that may choose to transfer their non-cleared swap portfolios, including any such swaps with the FHLBanks, to a related entity in the EU or the United States. If any of the FHLBanks' legacy non-cleared swaps are transferred in accordance with the Interim Rule, those swaps will retain legacy status under the Margin Rules.

On April 1, 2019, the Commodity Futures Trading Commission adopted its own version of the Interim Rule, which is substantially similar to the Agencies' Interim Rule, but which applies to Covered Swap Entities that are not subject to the jurisdiction of one of the Agencies. Comments on the Interim Rule were due April 18, 2019, and comments on the Commodity Futures Trading Commission's version of the Interim Rule are due on May 31, 2019. The FHLBanks do not expect the Interim Rule (or the Commodity Futures Trading Commission's version of the Interim Rule) to materially affect the FHLBanks' combined financial condition or combined results of operations.

FHFA Final Rule on FHLBank Capital Requirements. On February 20, 2019, the FHFA published a final rule, effective January 1, 2020, that adopts, with amendments, the regulations of the Federal Housing Finance Board (FHFB), predecessor to the FHFA, pertaining to the capital requirements for the FHLBanks. The final rule carries over most of the prior FHFB regulations without material change but substantively revises the credit risk component of the risk-based capital requirement, as well as the limitations on extensions of unsecured credit. The main revisions remove requirements that the FHLBanks calculate credit risk capital charges and unsecured credit limits based on ratings issued by a nationally recognized statistical rating organization, and instead require that the FHLBanks establish and use their own internal rating methodology. The rule imposes a new credit risk capital charge for cleared derivatives. The final rule also revises the percentages used in the regulation to calculate credit risk capital charges for advances and for non-mortgage assets. The final rule also rescinds certain contingency liquidity requirements that were part of the FHFB regulations, as these requirements are now addressed in an Advisory Bulletin on FHLBank Liquidity Guidance issued by the FHFA in 2018. The FHLBanks do not expect this rule to materially affect the FHLBanks' combined financial condition or combined results of operations.

FDIC Final Rule on Reciprocal Deposits. On February 4, 2019, the FDIC published a final rule, effective March 6, 2019, related to the treatment of “reciprocal deposits” that implements Section 202 of the Economic Growth, Regulatory Relief, and Consumer Protection Act. The final rule exempts, for certain insured depository institutions (depositories), certain reciprocal deposits — deposits acquired by a depository from a network of participating depositories that enables depositors to receive FDIC insurance coverage for the entire amount of their deposits — from being subject to FDIC restrictions on brokered deposits. Under the rule, well-capitalized and well-rated depositories are not required to treat reciprocal deposits as brokered deposits up to the lesser of 20% of their total liabilities or $5 billion. Reciprocal deposits held by depositories that are not well-capitalized and well-rated may also be excluded from brokered deposit treatment in certain circumstances.

The FHLBanks continue to evaluate the potential effect of the final rule, but currently do not expect the rule to materially affect the FHLBanks' combined financial condition or combined results of operations. The rule could, however, enhance depositories’ liquidity by increasing the attractiveness of deposits that exceed FDIC insurance limits. This could affect the demand for certain FHLBank advance products.

External Credit Ratings

Since December 31, 2018, no changes to external credit ratings have occurred with regard to the FHLBanks or their consolidated obligations. At April 30, 2019, 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 23 presents each FHLBank's long-term credit rating, short-term credit rating, and outlook at April 30, 2019.

Table 23 - FHLBanks' Long-Term Credit Ratings, Short-Term Credit Ratings, and Outlook at April 30, 2019

	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*, pages 111 to 112 and *Risk Factors*, pages 21 to 29, of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, 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, 2019, 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. 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, 2019, 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*, pages 93 to 97 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, for information on eligible collateral and effective lending values.)

As of March 31, 2019, there were 104 individual FHLBank borrowers (103 FHLBank members and 1 non-member) that each held advance balances 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 2.7 at March 31, 2019, which represents the total of these 104 individual FHLBank borrowers' eligible collateral divided by these borrowers' advances and other credit products outstanding. The collateralization ratio for all borrowers was 3.2 at March 31, 2019. However, individual borrower credit obligations to the FHLBanks are not cross-collateralized between borrowers.

Table 24 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 24 - Advances, Other Credit Products, and Collateral Outstanding at March 31, 2019
(dollars in millions)

	Borrowers with at Least $1.0 Billion of Advances Outstanding	All Borrowers	Percentage
Advances outstanding, principal amount	$ 486,892	$ 670,856	72.6%
Other credit products	$ 75,980	$ 158,217	48.0%
Collateral outstanding	$ 1,502,082	$ 2,665,365	56.4%

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 in lieu of 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, to ensure its position as a first-priority secured creditor, an FHLBank will generally require insurance company borrowers to place physical possession of all pledged eligible collateral with the FHLBank or deposit it with a custodian or control agent. 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 25 presents information on a combined basis regarding the type of collateral securing advances and other credit products outstanding.

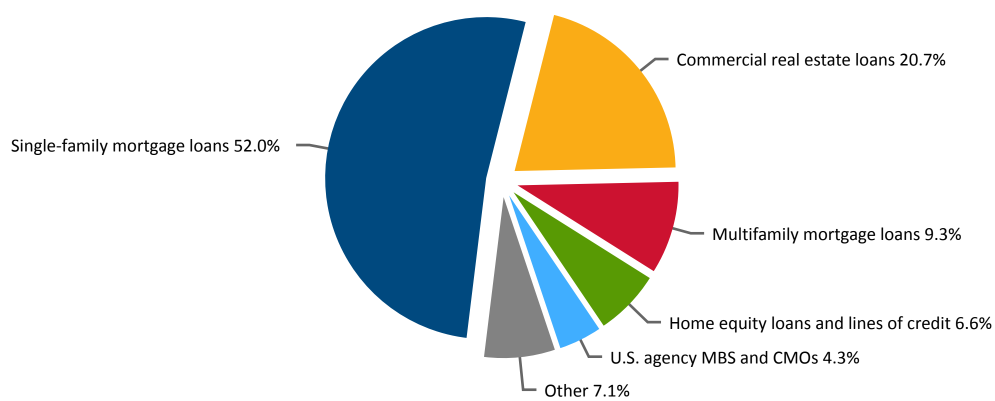
Table 25 - Type of Collateral Securing Advances and Other Credit Products Outstanding at March 31, 2019
(dollars in millions)

	Blanket Lien		Listing		Delivery		Total	
Collateral Type	**Amount**	**Percentage**	**Amount**	**Percentage**	**Amount**	**Percentage**	**Amount**	**Percentage**
Single-family mortgage loans(1)	$ 485,529	18.2%	$ 897,341	33.6%	$ 5,180	0.2%	$ 1,388,050	52.0%
Commercial real estate loans	366,594	13.8%	152,026	5.7%	33,227	1.2%	551,847	20.7%
Multifamily mortgage loans	71,756	2.7%	162,067	6.1%	14,214	0.5%	248,037	9.3%
Home equity loans and lines of credit	85,284	3.2%	90,218	3.4%	12	—	175,514	6.6%
U.S. agency MBS and CMOs	n/a	n/a	n/a	n/a	113,957	4.3%	113,957	4.3%
Other real estate loans	57,100	2.1%	11,157	0.4%	4,022	0.2%	72,279	2.7%
CFI loans	35,564	1.3%	1,486	0.1%	8	—	37,058	1.4%
Commercial MBS	n/a	n/a	n/a	n/a	22,514	0.8%	22,514	0.8%
U.S. agency securities (excluding MBS)	n/a	n/a	n/a	n/a	21,177	0.8%	21,177	0.8%
U.S. obligations	n/a	n/a	n/a	n/a	12,277	0.5%	12,277	0.5%
Private-label MBS and CMOs	n/a	n/a	n/a	n/a	6,681	0.3%	6,681	0.3%
Other	561	—	n/a	n/a	15,413	0.6%	15,974	0.6%
Total collateral	$ 1,102,388	41.3%	$ 1,314,295	49.3%	$ 248,682	9.4%	$ 2,665,365	100.0%

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

Figure 27 presents the percentage of collateral securing advances and other credit products by type at March 31, 2019.

Figure 27 - Percentage of Collateral Securing Advances and Other Credit Products by Type



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 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.

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 Operation - Risk Management* on pages 97 to 98 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, 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. Figures 28 and 29 present the composition of total investments by credit rating at March 31, 2019 and December 31, 2018.

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

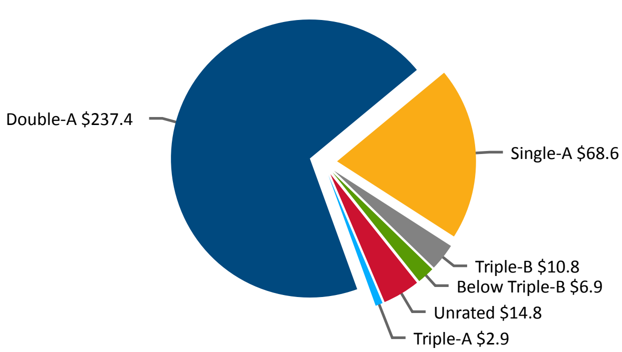


Figure 29 - Total Investments by Credit Rating at December 31, 2018 (dollars in billions)

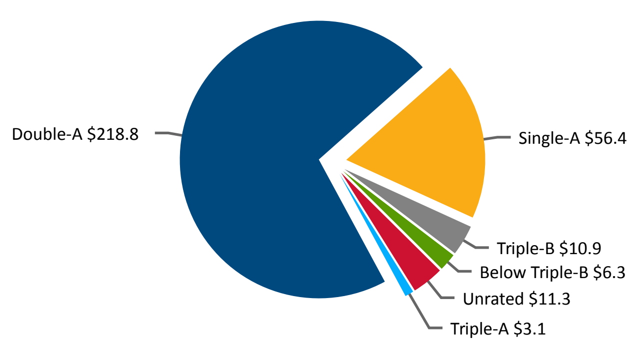


Table 26 presents the credit ratings of the investment securities held by the FHLBanks as of March 31, 2019 and December 31, 2018, using the lowest long-term credit rating for each security owned by an individual FHLBank based on the nationally recognized statistical rating organization(s) used by that 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 26 - Investment Ratings
(dollars in millions)

	March 31, 2019(1)(2)						
Carrying Value	**Triple-A**	**Double-A**	**Single-A**	**Triple-B**	**Below Triple-B**	**Unrated**	**Total**
Interest-bearing deposits	$ —	$ 929	$ 8,790	$ 47	$ —	$ —	$ 9,766
Securities purchased under agreements to resell	—	17,126	10,450	8,150	3,190	12,739	51,655
Federal funds sold	—	25,779	47,253	2,184	—	141	75,357
Total investment securities by major security type							
Non-mortgage backed securities							
Certificates of deposit	—	700	1,760	—	—	—	2,460
U.S. obligations	—	31,176	—	—	—	—	31,176
GSE and Tennessee Valley Authority obligations	—	19,098	—	—	—	—	19,098
State or local housing agency obligations	1,236	1,792	90	52	—	—	3,170
Federal Family Education Loan Program ABS	31	3,638	—	—	—	—	3,669
Other	904	99	—	—	—	10	1,013
Total non-mortgage-backed securities	2,171	56,503	1,850	52	—	10	60,586
Mortgage-backed securities							
U.S. obligations single-family MBS	126	12,019	—	—	—	—	12,145
U.S. obligations multifamily MBS	—	348	—	—	—	—	348
GSE single-family MBS	—	36,659	6	—	4	—	36,669
GSE multifamily MBS	590	87,740	—	—	—	—	88,330
Private-label residential MBS	6	304	243	383	3,628	1,869	6,433
Private-label manufactured housing loan ABS	—	—	33	—	—	—	33
Private-label home equity loan ABS	—	1	53	10	30	—	94
Total mortgage-backed securities	722	137,071	335	393	3,662	1,869	144,052
Total investment securities	2,893	193,574	2,185	445	3,662	1,879	204,638
Total investments	$ 2,893	$ 237,408	$ 68,678	$ 10,826	$ 6,852	$ 14,759	$ 341,416

Carrying Value	December 31, 2018(2)(3) Triple-A	Double-A	Single-A	Triple-B	Below Triple-B	Unrated	Total
Interest-bearing deposits	$ —	$ 2,027	$ 15,108	$ 47	$ —	$ —	$ 17,182
Securities purchased under agreements to resell	—	18,365	7,900	7,399	2,445	9,216	45,325
Federal funds sold	—	20,176	30,944	2,933	22	141	54,216
Total investment securities by major security type							
Non-mortgage backed securities							
Certificates of deposit	—	1,000	2,050	—	—	—	3,050
U.S. obligations	—	16,859	—	—	—	—	16,859
GSE and Tennessee Valley Authority obligations	—	19,038	—	—	—	—	19,038
State or local housing agency obligations	1,246	1,795	128	52	—	—	3,221
Federal Family Education Loan Program ABS	33	3,748	—	—	—	—	3,781
Other	1,019	98	—	—	—	10	1,127
Total non-mortgage-backed securities	2,298	42,538	2,178	52	—	10	47,076
Mortgage-backed securities							
U.S. obligations single-family MBS	134	12,394	—	—	—	—	12,528
U.S. obligations multifamily MBS	—	362	—	—	—	—	362
GSE single-family MBS	—	38,154	7	—	4	—	38,165
GSE multifamily MBS	629	84,454	—	—	—	—	85,083
Private-label residential MBS	6	325	234	424	3,784	1,936	6,709
Private-label manufactured housing loan ABS	2	—	34	—	—	—	36
Private-label home equity loan ABS	—	1	66	10	31	—	108
Total mortgage-backed securities	771	135,690	341	434	3,819	1,936	142,991
Total investment securities	3,069	178,228	2,519	486	3,819	1,946	190,067
Total investments	$ 3,069	$ 218,796	$ 56,471	$ 10,865	$ 6,286	$ 11,303	$ 306,790

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after March 31, 2019.
(2) Investment amounts represent the carrying value and do not include related accrued interest.
(3) Does not reflect any changes in ratings, outlook, or watch status occurring after December 31, 2018.

Long-term Investments. Within the 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. The FHLBanks invested in private-label mortgage-backed securities, which consisted of private-label residential MBS, manufactured housing loan ABS, and home equity loan ABS. 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.

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.

Current credit enhancement percentages reflect the ability of subordinated classes of securities to absorb principal losses and interest shortfalls before the senior classes held by the FHLBanks are affected (i.e., the losses, expressed as a percentage of the outstanding principal balances, that could be incurred in the underlying loan pools before the securities held by the FHLBanks would be affected, assuming that all of those losses occurred on the measurement date). Depending on the timing and amount of losses in the underlying loan pools, it is possible that the senior classes held by the FHLBanks could have losses in scenarios where the cumulative loan losses do not exceed the current credit enhancement percentage.

Table 27 presents collateral performance and credit enhancement information related to private-label mortgage-backed securities at March 31, 2019. No FHLBank has purchased private-label mortgage-backed securities since 2008.

Table 27 - Credit Ratings of Private-Label Mortgage-Backed Securities at March 31, 2019
(dollars in millions)

	Total	Prime(1)	Alt-A(1)(2)	Subprime(1)
Unpaid Principal Balance (UPB) by credit rating(3)				
Triple-A	$ 6	$ —	$ 6	$ —
Double-A	304	196	107	1
Single-A	332	171	70	91
Triple-B	395	285	92	18
Double-B	538	288	228	22
Single-B	251	79	164	8
Triple-C	2,471	312	2,144	15
Double-C	757	27	489	241
Single-C	139	—	89	50
Single-D	350	128	206	16
Unrated	2,263	1,185	1,077	1
Total	$ 7,806	$ 2,671	$ 4,672	$ 463
Amortized cost	$ 6,377	$ 2,354	$ 3,733	$ 290
Gross unrealized losses(4)	(143)	(91)	(24)	(28)
Fair value	7,056	2,504	4,165	387
Weighted-average percentage				
Fair value to UPB	90.4%	93.7%	89.1%	83.6%
Original credit support(5)	20.3%	11.5%	23.7%	35.9%
Remaining credit support(6)	7.8%	7.1%	6.6%	22.7%
Collateral delinquency(7)	12.9%	10.4%	13.7%	18.9%

(1) The FHLBanks classify securities as prime, Alt-A, and subprime based on the originator's classification at the time of origination or based on classification by a nationally recognized statistical rating organization upon issuance of the securities.
(2) The FHLBanks held a total of $1,131 million in Alt-A option adjustable-rate mortgages, of which $72 million are in a gross unrealized loss position based on their unpaid principal balance at March 31, 2019.
(3) Represents the lowest rating available at March 31, 2019, 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.
(4) Represents total gross unrealized losses including non-credit-related other-than-temporary impairment recognized in AOCI. The unpaid principal balance and amortized cost of private-label mortgage-backed securities in a gross unrealized loss position was $1,931 million and $1,658 million at March 31, 2019.
(5) Original weighted-average credit support is based on the credit support at the time of issuance and is determined based on the unpaid principal balance of the individual securities in the category and their respective original credit support.
(6) Remaining weighted-average credit support is based on the credit support as of March 31, 2019, and is determined based on the unpaid principal balance of the individual securities in the category and their respective credit support as of March 31, 2019.
(7) Weighted-average collateral delinquency rate is determined based on the underlying loans that are 60 days or more past due and is determined based on the unpaid principal balance of the individual securities in the category and their respective delinquencies.

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.

The monoline bond insurers continue to be subject to adverse ratings and weak financial performance measures, which imply an increased risk that the monoline bond insurer will fail to fulfill its obligations to reimburse the insured investor for claims made under the related insurance policies. There are four monoline bond insurers that insure certain FHLBanks' investment securities. Of the four monoline bond insurers, the financial guarantee from Assured Guaranty Municipal Corp. is considered sufficient to cover all future claims. Conversely, the financial guarantees from monoline bond insurers Financial Guaranty Insurance Company and MBIA Insurance Corp. are not considered applicable due to regulatory intervention that has suspended all claims, and the affected FHLBanks have placed no reliance on these monoline insurers. For the remaining monoline bond insurer, Ambac Assurance Corp., the affected FHLBanks assessed an expected reimbursement rate of 100% for new claims through March 31, 2025.

As of March 31, 2019, total monoline bond insurance coverage was $161 million, of which $145 million represents the FHLBanks' private-label MBS covered by the monoline bond insurance that the FHLBanks were relying on at March 31, 2019, for modeling cash flows. Of the $145 million, 75.9% represents subprime loans and 24.1% represents Alt-A loans. The FHLBanks classify securities as prime, Alt-A, and subprime based on the originator's classification at the time of origination or based on classification by a nationally recognized statistical rating organization upon issuance of the securities.

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 28 presents the FHLBanks' unsecured credit exposure with private counterparties by investment type. At March 31, 2019, the FHLBanks had aggregate unsecured credit exposure from investments of $1 billion or more to each of 31 private counterparties. The aggregate unsecured credit exposure to these counterparties represented 80.6% of the FHLBanks' total unsecured investment credit exposure to private counterparties. The unsecured investment credit exposure presented in Table 28 does not reflect the average or maximum exposure during the period, as the balances presented reflect the balances at period end.

Table 28 - Unsecured Credit Exposure by Investment Type
(dollars in millions)

Carrying Value(1)(2)	March 31, 2019	December 31, 2018
Interest-bearing deposits	$ 9,766	$ 17,182
Federal funds sold	75,357	54,216
Certificates of deposit	2,460	3,050
Total	$ 87,583	$ 74,448

(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, 2019, 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, 2019, an FHLBank held full faith and credit U.S. guaranteed securities with foreign issuers totaling $446 million. Other than these investments, the FHLBanks are in compliance with the FHFA regulation as of March 31, 2019.

As of March 31, 2019, 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, 2019, 70.6% of the FHLBanks' unsecured investments in federal funds sold and 93.9% of the FHLBanks' unsecured investments in certificates of deposit were to U.S. branches and agency offices of foreign commercial banks.

Figures 30 and 31 present total unsecured investment credit exposure by credit rating and by contractual maturity at March 31, 2019.

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

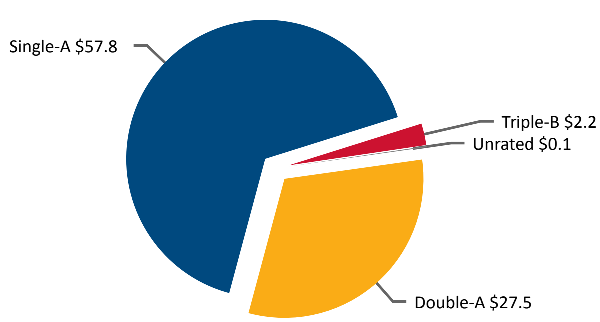


Figure 31 - Total Unsecured Investment Credit Exposure by Contractual Maturity (dollars in billions)

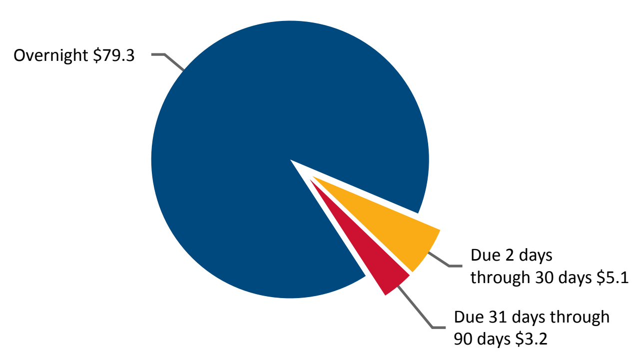


Table 29 presents the lowest long-term credit ratings of the unsecured investment credit exposures presented by the domicile of the counterparty or the domicile of the counterparty's immediate parent for U.S. branches and agency offices of foreign commercial banks based on the nationally recognized statistical 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 29 - Ratings of Unsecured Investment Credit Exposure by Domicile of Counterparty at March 31, 2019(1)
(dollars in millions)

	Investment Grade				
Carrying Value(2)	**Double-A**	**Single-A**	**Triple-B**	**Unrated**	**Total**
Domestic	$ 3,144	$ 24,633	$ 2,231	$ 141	$ 30,149
U.S. subsidiaries of foreign commercial banks	1,950	—	—	—	1,950
Total U.S. subsidiaries of foreign commercial banks	5,094	24,633	2,231	141	32,099
U.S. branches and agency offices of foreign commercial banks					
Canada	2,600	10,075	—	—	12,675
Australia	8,880	—	—	—	8,880
France	—	7,560	—	—	7,560
Germany	1,700	5,010	—	—	6,710
Netherlands	—	4,170	—	—	4,170
Finland	3,484	—	—	—	3,484
Austria	—	3,045	—	—	3,045
Norway	2,875	—	—	—	2,875
Sweden	1,575	1,250	—	—	2,825
United Kingdom	—	1,325	—	—	1,325
Singapore	1,200	—	—	—	1,200
Switzerland	—	535	—	—	535
Belgium	—	200	—	—	200
Total U.S. branches and agency offices of foreign commercial banks	22,314	33,170	—	—	55,484
Total unsecured investment credit exposure	$ 27,408	$ 57,803	$ 2,231	$ 141	$ 87,583

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after March 31, 2019.
(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 30 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, 2019, 90.5% of the carrying value of the total unsecured investments held by the FHLBanks had overnight maturities.

Table 30 - Contractual Maturity of Unsecured Investment Credit Exposure by Domicile of Counterparty at March 31, 2019
(dollars in millions)

Carrying Value(1)	Overnight	Due 2 days through 30 days	Due 31 days through 90 days	Total
Domestic	$ 29,999	$ —	$ 150	$ 30,149
U.S. subsidiaries of foreign commercial banks	1,950	—	—	1,950
Total domestic and U.S. subsidiaries of foreign commercial banks	31,949	—	150	32,099
U.S. branches and agency offices of foreign commercial banks				
Canada	10,950	1,225	500	12,675
Australia	7,550	1,030	300	8,880
France	7,000	560	—	7,560
Germany	4,860	1,350	500	6,710
Netherlands	4,170	—	—	4,170
Finland	3,334	—	150	3,484
Austria	2,605	440	—	3,045
Norway	2,600	50	225	2,875
Sweden	2,550	200	75	2,825
United Kingdom	1,325	—	—	1,325
Singapore	400	—	800	1,200
Switzerland	—	—	535	535
Belgium	—	200	—	200
Total U.S. branches and agency offices of foreign commercial banks	47,344	5,055	3,085	55,484
Total unsecured investment credit exposure	$ 79,293	$ 5,055	$ 3,235	$ 87,583

(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 own 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.

Management at each FHLBank believes that it has adequate policies and procedures in place to manage credit risk on mortgage loans appropriately. (See *Note 9 - Allowance for Credit Losses* to the accompanying combined financial statements for additional information about mortgage loan credit quality indicators, allowance for credit losses, and 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 105 to 109 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, for information on 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, 2019.

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. The management of each FHLBank did not anticipate any credit losses on its cleared derivatives as of March 31, 2019.

Table 31 presents the derivative positions with non-member counterparties and member institutions to which the FHLBanks had credit exposure at March 31, 2019. 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 31 - Derivative Counterparty Credit Exposure at March 31, 2019
(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	$ 1,200	$ 8	$ (4)	$ —	$ 4
Single-A	20,980	180	(41)	(104)	35
Triple-B	4,550	1	—	—	1
Cleared derivatives(2)	322,584	200	1,088	1,193	2,481
Liability positions with credit exposure					
Uncleared derivatives					
Double-A	4,580	(43)	46	—	3
Single-A	47,675	(304)	331	6	33
Triple-B	18,929	(200)	213	2	15
Cleared derivatives(2)	62,287	(17)	51	109	143
Total derivative positions with credit exposure to non-member counterparties	482,785	(175)	1,684	1,206	2,715
Member institutions(3)	860	6	—	—	6
Total	$ 483,645	$ (169)	$ 1,684	$ 1,206	$ 2,721

(1) This table does not reflect any changes in rating, outlook, or watch status occurring after March 31, 2019.
(2) Represents derivative transactions cleared with LCH Ltd. and CME Clearing, the FHLBanks' clearinghouses. LCH Ltd. is rated A+ 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,* pages 113 to 118, of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018, for additional information.)

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. 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 32 presents each FHLBank that includes quantitative market value of equity and duration of equity information in its individual 2019 First Quarter SEC Form 10-Q.

Table 32 - 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	✓	✓
Topeka	(4)	✓
San Francisco	✓	(5)

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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 2019 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 2019 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 2019 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 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 2019 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.
(5) 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 33 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 33 - Duration of Equity
(in years)

	March 31, 2019			December 31, 2018		
FHLBank	**Down**	**Base**	**Up**	**Down**	**Base**	**Up**
Boston	(2.8)	(1.1)	1.9	(5.5)	(0.3)	1.5
New York	0.7	(0.2)	0.4	(0.8)	(0.1)	0.3
Pittsburgh	0.6	0.0	0.3	0.2	0.1	0.5
Atlanta	(0.9)	(0.9)	1.1	(2.0)	(0.8)	1.0
Cincinnati	(4.2)	0.3	0.6	(5.6)	1.2	1.0
Indianapolis	3.2	2.3	(0.5)	1.3	2.8	(0.3)
Chicago	1.6	0.2	1.6	1.1	0.7	1.9
Des Moines	(0.1)	0.5	1.7	(1.1)	0.9	1.9
Dallas	(2.2)	(1.7)	0.5	(3.3)	(1.8)	0.4
Topeka	3.8	0.0	1.6	2.8	1.3	2.3
San Francisco	4.2	0.9	1.8	2.1	1.2	2.2

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 34 include the effect of derivative transactions.

Table 34 - Duration Gap
(in months)

FHLBank	March 31, 2019	December 31, 2018
Boston	(0.8)	(0.2)
New York	(0.5)	(0.4)
Pittsburgh	(0.2)	(0.2)
Atlanta	(0.7)	0.6
Cincinnati	0.0	0.0
Indianapolis	0.8	1.1
Chicago	0.1	0.5
Des Moines	0.0	0.3
Dallas	(1.4)	(1.3)
Topeka	0.0	0.8
San Francisco	0.7	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 10 - 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.)

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, 2018, 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, 2018, 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, 2018. (See *Part II. Item 8 - Financial Statements and Supplementary Data* or *Item 9A - Controls and Procedures* of each FHLBank's 2018 SEC Form 10-K for its *Management's Report on Internal Control over Financial Reporting*.)

Each FHLBank indicated that there were no changes to its internal control over financial reporting during the quarter ended March 31, 2019, that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. Additionally, 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 2019 First Quarter SEC Form 10-Q. (See *Part I. Item 4 - Controls and Procedures* of each FHLBank's 2019 First Quarter SEC Form 10-Q.)

FHLBank of Des Moines

The FHLBank of Des Moines' management identified two material weaknesses in its internal controls as of December 31, 2018: 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' 2018 SEC Form 10-K for additional information.)

During the quarter ended March 31, 2019, the management of the FHLBank of Des Moines began to take steps to remediate the material weaknesses identified at December 31, 2018. There were no changes to its internal control over financial reporting during the quarter ended March 31, 2019, that materially affected, or are reasonably likely to affect, its internal control over financial reporting. Additionally, the FHLBank of Des Moines’ management concluded, based on its previous identification of material weaknesses in its internal control over financial reporting at December 31, 2018, that its disclosure controls and procedures were not effective at a reasonable assurance level as of the end of the period covered by its 2019 First Quarter SEC Form 10-Q. (See *Part I. Item 4 - Controls and Procedures* of the FHLBank of Des Moines’ 2019 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 2019 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, 2019, 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, 2018. (See each FHLBank's 2019 First Quarter SEC Form 10-Q for any updates to the risk factors included in such FHLBank's 2018 SEC Form 10-K under *Part I. Item 1A - Risk Factors*.)

OTHER INFORMATION

There were no material changes to the disclosure relating to Rule 2-01(c)(1)(ii)(A) of SEC Regulation S-X (the Loan Rule) included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2018. (See each affected FHLBank's 2019 First Quarter SEC Form 10-Q for any updates to the Loan Rule disclosure included in such FHLBank's 2018 SEC Form 10-K under *Part II. Item 9B - Other Information.*)

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.

At March 31, 2019, the FHLBanks had 368 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 13 - Capital* to the accompanying combined financial statements for additional information on regulatory capital stock and mandatorily redeemable capital stock.)

Table 35 presents combined regulatory capital stock, which includes mandatorily redeemable capital stock, held by type of member and FHLBank membership by type of member.

Table 35 - Regulatory Capital Stock Held and Membership by Type of Member
(dollars in millions)

	March 31, 2019		December 31, 2018	
	Regulatory Capital Stock Amount	Number of Members	Regulatory Capital Stock Amount	Number of Members
Commercial banks	$ 22,565	4,158	$ 24,864	4,186
Insurance companies	4,689	442	4,675	436
Savings institutions	4,587	684	4,859	691
Credit unions	3,930	1,494	4,088	1,490
Community development financial institutions	14	63	12	60
Total	35,785	6,841	38,498	6,863
Mandatorily redeemable capital stock	1,035		1,062	
Total combined regulatory capital stock	$ 36,820		$ 39,560	

Figures 32 and 33 present the percentage of regulatory capital stock held, and membership, by type of member at March 31, 2019.

Figure 32 - Percentage of Regulatory Capital Stock Held by Type of Member

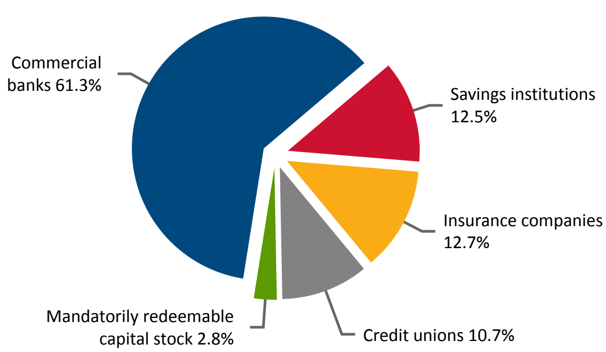
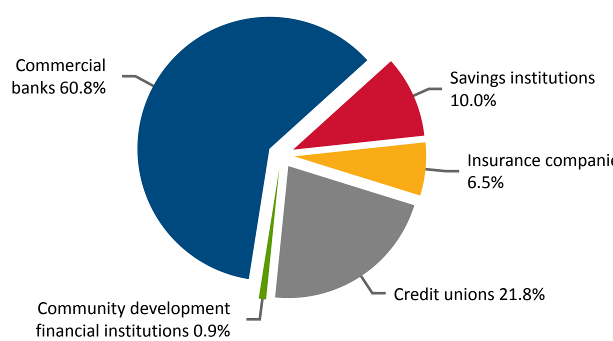


Figure 33 - Percentage of Membership by Type of Member



The information on regulatory capital stock presented in Table 36 is accumulated at the holding-company level. The percentage of total regulatory capital stock identified in Table 36 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 36 - Top 10 Regulatory Capital Stockholders by Holding Company at March 31, 2019
(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Regulatory Capital Stock(3)	Percentage of Total Regulatory Capital Stock	Mandatorily Redeemable Capital Stock
JPMorgan Chase & Co.	Pittsburgh, Cincinnati, Chicago, Des Moines, San Francisco	$ 2,270	6.2%	$ 482
Wells Fargo & Company	Des Moines, Dallas, Topeka, San Francisco	2,192	6.0%	18
Citigroup Inc.	New York, Dallas	1,172	3.2%	—
The PNC Financial Services Group, Inc.	Pittsburgh, Atlanta, Cincinnati	961	2.6%	14
MetLife, Inc.	Boston, New York, Pittsburgh, Des Moines	793	2.2%	4
Ally Financial Inc.	Pittsburgh	732	2.0%	—
New York Community Bancorp, Inc.	New York	588	1.6%	—
U.S. Bancorp	Cincinnati, Des Moines, Topeka	565	1.5%	1
Bank of America Corporation	Boston, Atlanta, Des Moines, San Francisco	543	1.5%	5
TIAA	New York, Atlanta	531	1.4%	—
		$ 10,347	28.2%	$ 524

(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, 2019, 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.

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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, 2019			
Assets			
Investments(2)	$ 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)	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 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%
At March 31, 2018			
Assets			
Investments(2)	$ 18,730	$ 36,258	$ 18,487
Advances	37,988	112,202	70,278
Mortgage loans held for portfolio	4,028	2,880	4,027
Allowance for credit losses on mortgage loans	(1)	(1)	(8)
Total assets	60,958	151,882	93,369
Consolidated obligations(3)			
Discount notes	29,468	56,510	23,906
Bonds	27,125	85,656	63,706
Total consolidated obligations	56,593	142,166	87,612
Mandatorily redeemable capital stock	36	19	5
Total capital			
Capital stock(4)	2,324	6,311	3,528
Retained earnings	1,335	1,575	1,180
Accumulated other comprehensive income (loss)	(341)	(4)	97
Total capital	3,318	7,882	4,805
Asset composition (as a percentage of the individual FHLBank's total assets)			
Investments(2)	30.7%	23.9%	19.8%
Advances	62.3%	73.9%	75.3%
Mortgage loans held for portfolio, net	6.6%	1.9%	4.3%
Total retained earnings as a percentage of individual FHLBank's total assets	2.2%	1.0%	1.3%
FHLBank's total assets as a percentage of FHLBank System's total assets	5.6%	14.0%	8.6%

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(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* to the accompanying combined financial statements for information about the elimination of interbank transactions in the combined financial statements of the FHLBanks.

(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 13 - 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
$ 46,781	$ 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%
$ 47,483	$ 36,012	$ 17,531	$ 34,818	$ 33,370	$ 28,571	$ 18,438	$ 39,832
91,733	63,883	32,965	50,840	108,253	35,304	26,978	66,642
417	9,732	10,497	5,359	7,114	1,019	7,467	2,376
(1)	(1)	(1)	(2)	(2)	—	(1)	—
140,460	111,709	61,392	91,391	149,347	65,100	53,150	109,225
54,659	53,089	19,556	41,483	33,930	26,641	22,607	27,203
77,160	51,767	37,779	43,516	106,204	33,502	27,237	74,297
131,819	104,856	57,335	84,999	140,134	60,143	49,844	101,500
3	28	164	311	356	1	5	309
4,748	4,524	1,881	1,579	5,372	2,351	1,598	3,068
2,052	961	993	3,358	1,904	973	855	3,273
95	(16)	134	126	159	275	30	335
6,895	5,469	3,008	5,063	7,435	3,599	2,483	6,676
33.8%	32.2%	28.6%	38.1%	22.3%	43.9%	34.7%	36.5%
65.3%	57.2%	53.7%	55.6%	72.5%	54.2%	50.8%	61.0%
0.3%	8.7%	17.1%	5.9%	4.8%	1.6%	14.0%	2.2%
1.5%	0.9%	1.6%	3.7%	1.3%	1.5%	1.6%	3.0%
12.9%	10.3%	5.6%	8.4%	13.7%	6.0%	4.9%	10.0%

Individual FHLBank Selected Financial Data and Financial Ratios (continued)

(dollars in millions)	Boston	New York	Pittsburgh
Selected Other Data			
March 31, 2019			
Advance concentrations - top five borrowers	23%	60%	79%
Capital stock concentrations - top five stockholders(5)	21%	53%	70%
Regulatory capital-to-assets ratio(6)	6.2%	5.2%	5.0%
Cash and stock dividends			
Quarter-to-date March 31, 2019	$ 37	$ 101	$ 70
Quarter-to-date March 31, 2018	$ 28	$ 102	$ 57
Weighted average dividend rate			
Quarter-to-date March 31, 2019	6.17%	6.35%	7.44%
Quarter-to-date March 31, 2018	4.99%	6.50%	6.42%
Return on average equity(7)			
Quarter-to-date March 31, 2019	6.94%	7.53%	7.66%
Quarter-to-date March 31, 2018	6.65%	6.34%	6.63%
Return on average assets			
Quarter-to-date March 31, 2019	0.37%	0.38%	0.38%
Quarter-to-date March 31, 2018	0.36%	0.31%	0.33%
Net interest margin(8)			
Quarter-to-date March 31, 2019	0.59%	0.51%	0.51%
Quarter-to-date March 31, 2018	0.52%	0.48%	0.47%
Net interest spread			
Quarter-to-date March 31, 2019	0.44%	0.38%	0.39%
Quarter-to-date March 31, 2018	0.42%	0.41%	0.39%

(5) The FHLBank of Des Moines' top five capital stock concentration ratio is calculated based on its top four capital stockholders, as one of its top five stockholders owns only mandatorily redeemable capital stock.

(6) 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 13 - Capital* to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

(7) 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.

(8) 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
55%	67%	41%	59%	62%	41%	65%	65%
46%	55%	37%	51%	46%	27%	59%	42%
5.0%	5.0%	4.9%	5.9%	5.1%	5.2%	4.3%	6.0%
$ 85	$ 65	$ 26	$ 21	$ 70	$ 19	$ 24	$ 50
$ 65	$ 62	$ 31	$ 13	$ 53	$ 11	$ 26	$ 53
6.47%	6.00%	5.50%	4.76%	5.25%	2.96%	6.56%	7.00%
5.16%	5.75%	6.75%	3.32%	4.03%	1.96%	6.01%	7.00%
5.72%	5.59%	4.37%	5.60%	6.16%	6.22%	8.77%	6.34%
6.01%	6.23%	6.57%	5.82%	6.56%	4.63%	6.10%	4.74%
0.28%	0.28%	0.21%	0.32%	0.31%	0.35%	0.40%	0.37%
0.29%	0.30%	0.31%	0.33%	0.32%	0.26%	0.28%	0.26%
0.40%	0.47%	0.36%	0.50%	0.45%	0.42%	0.48%	0.52%
0.35%	0.44%	0.46%	0.55%	0.42%	0.42%	0.47%	0.47%
0.28%	0.35%	0.22%	0.36%	0.31%	0.26%	0.36%	0.38%
0.28%	0.35%	0.37%	0.46%	0.35%	0.34%	0.40%	0.39%

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