FEDERAL HOME LOAN BANKS

Combined Financial Report
for the Quarterly Period Ended September 30, 2018

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 September 30, 2018. This Combined Financial Report should be read in conjunction with the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, issued on March 23, 2018. 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 November 14, 2018.

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TABLE OF CONTENTS

Consolidated obligations issued under the Federal Home Loan Banks' Global Debt Program may be listed on the Euro MTF market of the Luxembourg Stock Exchange. The Luxembourg Stock Exchange has allocated the number 2306 to the Federal Home Loan Banks' Global Debt Program for listing purposes. Under the Federal Home Loan Banks' agreement with the debt underwriter(s) of a particular series of consolidated obligations, any series of consolidated obligations listed on the Luxembourg Stock Exchange may be delisted if the continuation of the listing has become unduly onerous in the opinion of the issuer (the Federal Home Loan Banks acting by and through the Office of Finance), and the issuer has agreed with the debt underwriter(s) that it will use reasonable efforts to list the consolidated obligations on another stock exchange.

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)	September 30, 2018	December 31, 2017
Assets		
Cash and due from banks	$ 772	$ 7,175
Interest-bearing deposits	13,619	5,420
Securities purchased under agreements to resell	45,307	52,568
Federal funds sold	72,730	65,530
Investment securities		
Trading securities *(Note 3)*	13,389	7,736
Available-for-sale securities *(Note 4)*	80,302	79,560
Held-to-maturity securities, fair value of $93,026 and $97,282 *(Note 5)*	92,938	96,466
Total investment securities	186,629	183,762
Advances, includes $6,316 and $9,428 at fair value held under fair value option *(Note 7)*	706,005	731,544
Mortgage loans held for portfolio, net		
Mortgage loans held for portfolio *(Note 8)*	60,090	53,843
Allowance for credit losses on mortgage loans *(Note 9)*	(15)	(16)
Total mortgage loans held for portfolio, net	60,075	53,827
Accrued interest receivable	2,008	1,584
Premises, software, and equipment, net	307	292
Derivative assets, net *(Note 10)*	990	991
Other assets	813	758
Total assets	$ 1,089,255	$ 1,103,451
Liabilities		
Deposits *(Note 11)*	$ 8,235	$ 7,789
Consolidated obligations *(Note 12)*		
Discount notes, includes $0 and $3,062 at fair value held under fair value option	402,823	391,480
Bonds, includes $11,580 and $12,917 at fair value held under fair value option	613,471	641,601
Total consolidated obligations	1,016,294	1,033,081
Mandatorily redeemable capital stock	1,078	1,272
Accrued interest payable	1,736	1,324
Affordable Housing Program payable	1,093	1,032
Derivative liabilities, net *(Note 10)*	355	449
Other liabilities	2,880	2,024
Total liabilities	1,031,671	1,046,971
Commitments and contingencies *(Note 16)*		
Capital *(Note 13)*		
Capital stock		
Class B putable ($100 par value) issued and outstanding shares	37,232	37,422
Class A putable ($100 par value) issued and outstanding shares	183	235
Total capital stock	37,415	37,657
Retained earnings		
Unrestricted	15,202	14,549
Restricted	4,106	3,550
Total retained earnings	19,308	18,099
Accumulated other comprehensive income (loss) *(Note 14)*	861	724
Total capital	57,584	56,480
Total liabilities and capital	$ 1,089,255	$ 1,103,451

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 September 30, 2018	Three Months Ended September 30, 2017	Nine Months Ended September 30, 2018	Nine Months Ended September 30, 2017
Interest income				
Advances	$ 4,184	$ 2,586	$ 11,483	$ 6,291
Prepayment fees on advances, net	6	5	21	22
Interest-bearing deposits	67	17	137	41
Securities purchased under agreements to resell	202	54	435	125
Federal funds sold	401	295	1,159	646
Investment securities				
Trading securities	70	40	180	118
Available-for-sale securities	619	489	1,744	1,371
Held-to-maturity securities	667	523	1,875	1,482
Total investment securities	1,356	1,052	3,799	2,971
Mortgage loans held for portfolio	504	434	1,447	1,269
Other	1	3	4	5
Total interest income	6,721	4,446	18,485	11,370
Interest expense				
Consolidated obligations				
Discount notes	1,950	1,120	5,241	2,597
Bonds	3,380	2,052	9,168	5,425
Total consolidated obligations	5,330	3,172	14,409	8,022
Deposits	34	21	88	48
Mandatorily redeemable capital stock	17	17	51	55
Total interest expense	5,381	3,210	14,548	8,125
Net interest income	1,340	1,236	3,937	3,245
Provision (reversal) for credit losses	—	(1)	1	—
Net interest income after provision (reversal) for credit losses	1,340	1,237	3,936	3,245
Non-interest income				
Other-than-temporary impairment losses				
Total other-than-temporary impairment losses	(4)	—	(20)	(8)
Net amount of impairment losses reclassified to/(from) accumulated other comprehensive income (loss)	(1)	(7)	8	(12)
Net other-than-temporary impairment losses	(5)	(7)	(12)	(20)
Net gains (losses) on trading securities	(24)	2	(106)	28
Net realized gains (losses) from sale of available-for-sale securities	—	—	32	2
Net realized gains (losses) from sale of held-to-maturity securities	3	2	3	4
Net gains (losses) on financial instruments held under fair value option	(18)	(12)	(73)	(20)
Net gains (losses) on derivatives and hedging activities	24	—	116	293
Gains on litigation settlements, net	13	—	14	139
Other, net	47	43	129	131
Total non-interest income (loss)	40	28	103	557
Non-interest expense				
Compensation and benefits	181	165	515	483
Other operating expenses	108	100	305	287
Federal Housing Finance Agency	15	16	47	48
Office of Finance	14	12	42	38
Other	13	21	45	150
Total non-interest expense	331	314	954	1,006
Net income before assessments	1,049	951	3,085	2,796
Affordable Housing Program assessments	107	97	314	286
Net income	$ 942	$ 854	$ 2,771	$ 2,510

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

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

(dollars in millions)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net income	$ 942	$ 854	$ 2,771	$ 2,510
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	(27)	23	(139)	379
Net non-credit portion of other-than-temporary impairment gains (losses) on available-for-sale securities	(2)	91	(34)	221
Net non-credit portion of other-than-temporary impairment gains (losses) on held-to-maturity securities	21	20	56	66
Net unrealized gains (losses) relating to hedging activities	61	48	261	112
Pension and postretirement benefits	2	4	(2)	7
Total other comprehensive income (loss)	55	186	142	785
Comprehensive income	$ 997	$ 1,040	$ 2,913	$ 3,295

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

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF CAPITAL
NINE MONTHS ENDED SEPTEMBER 30, 2018 AND 2017
(Unaudited)

	Capital Stock - Putable			
	Class B		Class A	
(dollars and shares in millions)	Shares	Par Value	Shares	Par Value
Balance, December 31, 2016	361	$ 36,072	2	$ 162
Comprehensive income (loss)	—	—	—	—
Proceeds from issuance of capital stock	254	25,388	—	1
Repurchases/redemptions of capital stock	(232)	(23,176)	(6)	(527)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(10)	(986)	—	(16)
Transfers between Class B and Class A shares	(6)	(553)	6	553
Transfers to unrestricted/(from) restricted retained earnings	—	—	—	—
Dividends on capital stock				
Cash	—	—	—	—
Stock	1	89	—	—
Balance, September 30, 2017	368	$ 36,834	2	$ 173
Balance, December 31, 2017	374	$ 37,422	2	$ 235
Adjustment for cumulative effect of accounting change - recognition and measurement of financial instruments	—	—	—	—
Comprehensive income (loss)	—	—	—	—
Proceeds from issuance of capital stock	318	31,846	—	1
Repurchases/redemptions of capital stock	(305)	(30,491)	(6)	(645)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(9)	(871)	(2)	(195)
Transfers between Class B and Class A shares	(8)	(787)	8	787
Dividends on capital stock				
Cash	—	—	—	—
Stock	1	113	—	—
Balance, September 30, 2018	371	$ 37,232	2	$ 183

Capital Stock - Putable							
Total			Retained Earnings				
Shares	Par Value	Additional Capital from Merger	Unrestricted	Restricted	Total	Accumulated Other Comprehensive Income (Loss)	Total Capital
363	$ 36,234	$ 52	$ 11,789	$ 4,541	$ 16,330	$ (157)	$ 52,459
—	—	—	1,903	607	2,510	785	3,295
254	25,389	—	—	—	—	—	25,389
(238)	(23,703)	—	—	—	—	—	(23,703)
(10)	(1,002)	—	—	—	—	—	(1,002)
—	—	—	—	—	—	—	—
—	—	—	1,771	(1,771)	—	—	—
—	—	(52)	(1,070)	—	(1,070)	—	(1,122)
1	89	—	(89)	—	(89)	—	—
370	$ 37,007	$ —	$ 14,304	$ 3,377	$ 17,681	$ 628	$ 55,316
376	$ 37,657	$ —	$ 14,549	$ 3,550	$ 18,099	$ 724	$ 56,480
—	—	—	5	—	5	(5)	—
—	—	—	2,215	556	2,771	142	2,913
318	31,847	—	—	—	—	—	31,847
(311)	(31,136)	—	—	—	—	—	(31,136)
(11)	(1,066)	—	—	—	—	—	(1,066)
—	—	—	—	—	—	—	—
—	—	—	(1,454)	—	(1,454)	—	(1,454)
1	113	—	(113)	—	(113)	—	—
373	$ 37,415	$ —	$ 15,202	$ 4,106	$ 19,308	$ 861	$ 57,584

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

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

(dollars in millions)	Nine Months Ended September 30, 2018	2017
Operating activities		
Net income	$ 2,771	$ 2,510
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	306	227
Net change in derivatives and hedging activities	1,900	363
Net other-than-temporary impairment losses	12	20
Other adjustments	(32)	(32)
Net change in fair value adjustments on trading securities	91	(20)
Net change in fair value adjustments on financial instruments held under fair value option	73	20
Net change in		
Trading securities	(239)	(9)
Accrued interest receivable	(494)	(296)
Other assets	(20)	(63)
Accrued interest payable	417	232
Other liabilities	118	(5)
Total adjustments	2,132	437
Net cash provided by (used in) operating activities	4,903	2,947
Investing activities		
Net change in		
Interest-bearing deposits	(8,409)	(688)
Securities purchased under agreements to resell	7,261	12,076
Federal funds sold	(7,200)	(41,011)
Premises, software, and equipment	(70)	(96)
Trading securities		
Net decrease (increase) in short-term	500	(914)
Proceeds from long-term	2,678	3,811
Purchases of long-term	(8,661)	(818)
Available-for-sale securities		
Net decrease (increase) in short-term	(1,150)	750
Proceeds from long-term	9,141	7,860
Purchases of long-term	(9,208)	(7,660)
Held-to-maturity securities		
Net decrease (increase) in short-term	295	1,367
Proceeds from long-term	15,853	15,316
Purchases of long-term	(12,742)	(15,661)
Advances		
Repaid	8,716,228	6,821,639
Originated	(8,692,711)	(6,836,463)
Mortgage loans held for portfolio		
Principal collected	4,945	5,189
Purchases	(11,319)	(9,031)
Proceeds from sales of foreclosed assets	43	54
Other investing activities	(5)	(15)
Net cash provided by (used in) investing activities	5,469	(44,295)

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

	Nine Months Ended September 30,	
(dollars in millions)	2018	2017
Financing activities		
Net change in deposits and pass-through reserves, and other financing activities	$ 973	$ (233)
Net proceeds (payments) on derivative contracts with financing element	74	(173)
Net proceeds from issuance of consolidated obligations		
Discount notes	5,516,750	4,634,721
Bonds	364,502	351,936
Payments for maturing and retiring consolidated obligations		
Discount notes	(5,505,655)	(4,637,459)
Bonds	(391,416)	(310,142)
Proceeds from issuance of capital stock	31,847	25,389
Payments for repurchases/redemptions of capital stock	(31,136)	(23,703)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(1,260)	(1,363)
Cash dividends paid	(1,454)	(1,122)
Net cash provided by (used in) financing activities	(16,775)	37,851
Net increase (decrease) in cash and due from banks	(6,403)	(3,497)
Cash and due from banks at beginning of the period	7,175	7,441
Cash and due from banks at end of the period	$ 772	$ 3,944
Supplemental disclosures		
Interest paid	$ 13,752	$ 7,662
Affordable Housing Program payments, net	$ 251	$ 234
Transfers of mortgage loans to other assets	$ 23	$ 18
Transfers of mortgage loans held for sale to securitized mortgage loans	$ 362	$ 326
Non-cash receipt of trading securities	$ 11	$ —
Net capital stock reclassified to/(from) mandatorily redeemable capital stock	$ 1,066	$ 1,002

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 safeguarding, 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, 2017. 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, 2018.

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 made to the combined financial statements.)

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

Reclassifications and Revisions to Prior Period Amounts. Certain amounts in the 2017 combined financial statements have been reclassified or revised to conform to the financial statement presentation for the three and nine months ended September 30, 2018. Additionally, certain other prior period amounts have been revised and may not agree to previously issued Federal Home Loan Banks combined financial reports. These amounts were not deemed to be material.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires each FHLBank's management to make subjective assumptions and estimates that may affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of income and expense. The most significant of these estimates include the determination of other-than-temporary impairments of certain mortgage-backed securities (MBS) and fair value of derivatives, certain advances, certain investment securities, and certain consolidated obligations that are reported at fair value on the Combined Statement of Condition. 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 September 30, 2018 and December 31, 2017, the FHLBanks had \$45.3 billion and \$52.6 billion 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 September 30, 2018 and December 31, 2017.

Derivatives

All derivatives are recognized on the Combined Statement of Condition at their fair values and are reported as either derivative assets or derivative liabilities, net of cash collateral, and accrued interest received from or pledged to clearing agents and/or counterparties. The fair values of derivatives are netted by clearing agent and/or counterparty when the netting requirements have been met. If these netted amounts are positive, they are classified as an asset, and if negative, they are classified as a liability. Cash flows associated with derivatives are reflected as cash flows from operating activities on the Combined Statement of Cash Flows unless the derivative meets the criteria to be a financing derivative.

Each FHLBank utilizes one or two Derivative Clearing Organizations (Clearinghouses), for all cleared derivative transactions, LCH Ltd. and/or CME Clearing. Effective January 16, 2018, LCH Ltd. made certain amendments to its rulebook, changing the legal characterization of variation margin payments to be daily settlement payments, rather than collateral. CME Clearing made the same change to its rulebook on January 3, 2017. As a result, at both Clearinghouses, variation margin is characterized as daily settlement payments, rather than cash collateral; and initial margin continues to be considered cash collateral.

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. For a detailed description of recently issued and adopted accounting standards, see *Note 2 - Recently Issued and Adopted Accounting Guidance* on pages F-23 to F-26 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017.

Recently Issued Accounting Guidance, Not Yet Adopted:

Accounting Standard Update (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 LIBOR to SOFR transition.	This guidance becomes effective for the FHLBanks for the interim and annual periods beginning on January 1, 2019, which is concurrent with the adoption of ASU 2017-12.	The FHLBanks are in the process of evaluating the effect this guidance may have on their hedging strategies.
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 interim and annual periods beginning on January 1, 2020. Early adoption is permitted.	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 are in the process of evaluating the guidance, but the adoption of this guidance is not expected to have any effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.
Changes to the Disclosure Requirements for Fair Value Measurement (ASU 2018-13)	This guidance modifies the disclosure requirements on fair value measurements to improve disclosure effectiveness.	This guidance becomes effective for the FHLBanks for interim and annual periods beginning on January 1, 2020. Early adoption is permitted.	The FHLBanks are in the process of evaluating the guidance, but the adoption of this guidance is not expected to have any effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.

Accounting Standard Update (ASU)	Description	Effective Date	Effect on the Combined Financial Statements or Other Significant Matters
Targeted Improvements to Accounting for Hedging Activities (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 becomes effective for the FHLBanks for interim and annual periods beginning on January 1, 2019.	The FHLBanks are in the process of evaluating this guidance. Upon adoption, this guidance will prospectively affect the FHLBanks' combined statements of income and comprehensive income presentation for fair value and cash flow hedges and will require certain new disclosures. For all cash flow hedges existing on January 1, 2019, this guidance requires a cumulative-effect adjustment to accumulated other comprehensive income with a corresponding adjustment to retained earnings as of January 1, 2019.
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 continues to be amortized to its contractual maturity.	This guidance becomes effective for the FHLBanks for interim and annual periods beginning on January 1, 2019.	The adoption of this guidance is not expected to have a material effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.
Measurement of Credit Losses on Financial Instruments (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 interim and annual periods beginning on January 1, 2020. Early application is permitted as of the interim and annual reporting periods beginning after December 15, 2018.	The FHLBanks do not intend to adopt this guidance early. While the FHLBanks are in the process of evaluating the guidance, the FHLBanks expect the adoption of this guidance may result in an increase in the allowance for credit losses, including an allowance for debt securities, given the requirement to assess losses for the entire estimated life of the financial asset. The 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.
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. In July 2018, the Financial Accounting Standards Board issued amendments that, among other things, provide entities with an additional transition method to adopt this guidance. The new transition method allows entities an option to recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption.	This guidance becomes effective for the FHLBanks for the interim and annual periods beginning on January 1, 2019.	Upon adopting this guidance, the FHLBanks expect to report higher assets and liabilities as a result of recording right-of-use assets and lease liabilities for their existing leases on their statements of condition. The FHLBanks are in the process of evaluating this guidance, but its effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows is not expected to be material.

Recently Adopted Accounting Guidance:

ASU	Description	Effective Date	Effect on the Combined Financial Statements or Other Significant Matters
Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost (ASU 2017-07)	This guidance requires entities to disaggregate the service cost component from the other components of net periodic pension cost and net periodic postretirement benefit cost (net benefit cost). It also provides explicit guidance on how to present the service cost component and the other components of net benefit cost on the income statement and allows only the service cost component of net benefit cost to be eligible for capitalization.	This guidance became effective for the FHLBanks for interim and annual periods beginning on January 1, 2018, and was adopted retrospectively for the presentation of the service cost component and the other components of net benefit cost on the income statement. For the capitalization of the service cost component of net benefit cost in assets, this guidance was applied prospectively.	The adoption of this guidance resulted in a reclassification of other components of net benefit costs from "Compensation and benefits" to "Other, net" in the Combined Statements of Income. The FHLBanks will continue to report service cost component in "Compensation and benefits" in accordance with this guidance. The adoption of this guidance did not have a material effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.
Classification of Certain Cash Receipts and Cash Payments (ASU 2016-15)	This guidance clarifies existing principles on the classification of certain cash receipts and payments in the statement of cash flows. This guidance is intended to reduce existing diversity in practice in how certain cash receipts and cash payments are presented and classified on the statement of cash flows.	This guidance became effective for the FHLBanks for interim and annual periods beginning on January 1, 2018, and was adopted retrospectively.	Upon adoption, interest paid as reported in the supplemental disclosures section of the Combined Statement of Cash Flows was adjusted for the nine months ended September 30, 2017, to include $736 million relating to accreted interest on zero-interest consolidated obligations. The adoption of this guidance did not have any other effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.
Recognition and Measurement of Financial Assets and Financial Liabilities (ASU 2016-01)	This guidance makes targeted improvements to certain requirements in GAAP. Most notably, this guidance revises the accounting for equity securities, financial instruments measured under the fair value option, and certain disclosure requirements for fair value of financial instruments.	This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2018, and was adopted on a modified-retrospective basis.	Upon adoption, equity securities were reclassified from trading and available-for-sale securities to other assets. The adoption of this guidance did not have a material effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.
Revenue from Contracts with Customers (ASU 2014-09)	This guidance outlines a comprehensive model for recognizing revenue arising from contracts with customers. In addition, this guidance amends the existing requirements for the recognition of a gain or loss on the transfer of non-financial assets that are not in contract with a customer. This guidance applies to all contracts with customers except those that are within the scope of certain other standards, such as financial instruments, certain guarantees, insurance contracts, and lease contracts.	This guidance became effective for the FHLBanks for interim and annual periods beginning on January 1, 2018, and was adopted on a modified-retrospective basis.	The majority of the FHLBanks' financial instruments and other contractual rights that generate revenue are covered by other U.S. GAAP. As a result, the adoption of this guidance did not have a material effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.

Note 3 - Trading Securities

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

Fair Value	September 30, 2018	December 31, 2017
Non-mortgage-backed securities		
Certificates of deposit	$ 85	$ 585
U.S. obligations	8,745	1,785
GSE and Tennessee Valley Authority obligations	2,778	3,463
Other	271	293
Total non-mortgage-backed securities	11,879	6,126
Mortgage-backed securities		
U.S. obligations single-family MBS	13	16
GSE single-family MBS	82	101
GSE multifamily MBS	1,415	1,493
Total mortgage-backed securities	1,510	1,610
Total	$ 13,389	$ 7,736

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Net unrealized gains (losses) on trading securities held at period-end	$ (19)	$ 12	$ (101)	$ 41
Net unrealized and realized gains (losses) on trading securities sold/ matured during the period	(5)	(10)	(5)	(13)
Net gains (losses) on trading securities	$ (24)	$ 2	$ (106)	$ 28

Note 4 - Available-for-Sale Securities

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

	September 30, 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	$ 2,050	$ —	$ —	$ —	$ 2,050
U.S. obligations	3,480	—	22	(2)	3,500
GSE and Tennessee Valley Authority obligations	12,944	—	235	(27)	13,152
State or local housing agency obligations	1,161	—	1	(16)	1,146
Federal Family Education Loan Program ABS	3,680	—	221	—	3,901
Other	837	—	12	(15)	834
Total non-mortgage-backed securities	24,152	—	491	(60)	24,583
Mortgage-backed securities					
U.S. obligations single-family MBS	5,278	—	43	(5)	5,316
U.S. obligations multifamily MBS	375	—	—	(7)	368
GSE single-family MBS	7,900	—	27	(141)	7,786
GSE multifamily MBS	37,179	—	320	(30)	37,469
Private-label residential MBS	4,233	(16)	563	—	4,780
Total mortgage-backed securities	54,965	(16)	953	(183)	55,719
Total	$ 79,117	$ (16)	$ 1,444	$ (243)	$ 80,302

	December 31, 2017				
	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	$ 900	$ —	$ —	$ —	$ 900
U.S. obligations	3,746	—	24	(5)	3,765
GSE and Tennessee Valley Authority obligations	14,786	—	210	(35)	14,961
State or local housing agency obligations	1,262	—	7	(7)	1,262
Federal Family Education Loan Program ABS	3,986	—	234	(6)	4,214
Other	928	—	15	(21)	922
Total non-mortgage-backed securities	25,608	—	490	(74)	26,024
Mortgage-backed securities					
U.S. obligations single-family MBS	4,978	—	36	(4)	5,010
U.S. obligations multifamily MBS	448	—	—	(5)	443
GSE single-family MBS	8,808	—	32	(69)	8,771
GSE multifamily MBS	33,208	—	384	(10)	33,582
Private-label residential MBS	5,147	(34)	617	—	5,730
Total mortgage-backed securities	52,589	(34)	1,069	(88)	53,536
Total	$ 78,197	$ (34)	$ 1,559	$ (162)	$ 79,560

(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 $555 million and $607 million in subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at September 30, 2018 and December 31, 2017, 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 $555 million and $607 million in subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at September 30, 2018 and December 31, 2017, 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)

	September 30, 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	$ 748	$ (1)	$ 325	$ (1)	$ 1,073	$ (2)
GSE and Tennessee Valley Authority obligations	240	(1)	654	(26)	894	(27)
State or local housing agency obligations	321	(6)	688	(10)	1,009	(16)
Other	—	—	395	(15)	395	(15)
Total non-mortgage-backed securities	1,309	(8)	2,062	(52)	3,371	(60)
Mortgage-backed securities						
U.S. obligations single-family MBS	547	(1)	61	(4)	608	(5)
U.S. obligations multifamily MBS	—	—	368	(7)	368	(7)
GSE single-family MBS	1,886	(42)	2,575	(99)	4,461	(141)
GSE multifamily MBS	8,491	(23)	1,631	(7)	10,122	(30)
Private-label residential MBS	29	—	384	(16)	413	(16)
Total mortgage-backed securities	10,953	(66)	5,019	(133)	15,972	(199)
Total	$ 12,262	$ (74)	$ 7,081	$ (185)	$ 19,343	$ (259)

	December 31, 2017					
	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	$ 32	$ —	$ 1,783	$ (5)	$ 1,815	$ (5)
GSE and Tennessee Valley Authority obligations	63	—	1,676	(35)	1,739	(35)
State or local housing agency obligations	45	(4)	741	(3)	786	(7)
Federal Family Education Loan Program ABS	—	—	644	(6)	644	(6)
Other	—	—	418	(21)	418	(21)
Total non-mortgage-backed securities	140	(4)	5,262	(70)	5,402	(74)
Mortgage-backed securities						
U.S. obligations single-family MBS	111	—	995	(4)	1,106	(4)
U.S. obligations multifamily MBS	64	(1)	379	(4)	443	(5)
GSE single-family MBS	2,226	(15)	2,866	(54)	5,092	(69)
GSE multifamily MBS	948	(4)	2,867	(6)	3,815	(10)
Private-label residential MBS	12	—	528	(34)	540	(34)
Total mortgage-backed securities	3,361	(20)	7,635	(102)	10,996	(122)
Total	$ 3,501	$ (24)	$ 12,897	$ (172)	$ 16,398	$ (196)

(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)

	September 30, 2018		December 31, 2017	
Year of Maturity	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Non-mortgage-backed securities				
Due in one year or less	$ 3,340	$ 3,340	$ 2,427	$ 2,431
Due after one year through five years	5,871	5,925	6,504	6,557
Due after five years through ten years	8,902	9,029	9,854	9,947
Due after ten years	2,359	2,388	2,837	2,875
Federal Family Education Loan Program ABS(1)	3,680	3,901	3,986	4,214
Total non-mortgage-backed securities	24,152	24,583	25,608	26,024
Mortgage-backed securities(1)	54,965	55,719	52,589	53,536
Total	$ 79,117	$ 80,302	$ 78,197	$ 79,560

(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 September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Proceeds from sale of AFS securities	$ —	$ 1	$ 204	$ 252
Gross gains on sale of AFS securities	$ —	$ —	$ 32	$ 2
Gross losses on sale of AFS securities	—	—	—	—
Net realized gains/(losses) from sale of AFS securities	$ —	$ —	$ 32	$ 2

Note 5 - Held-to-Maturity Securities

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

	September 30, 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	$ 875	$ —	$ 875	$ —	$ —	$ 875
U.S. obligations	923	—	923	7	(2)	928
GSE and Tennessee Valley Authority obligations	3,627	—	3,627	50	(6)	3,671
State or local housing agency obligations	2,177	—	2,177	1	(46)	2,132
Total non-mortgage-backed securities	7,602	—	7,602	58	(54)	7,606
Mortgage-backed securities						
U.S. obligations single-family MBS	7,353	—	7,353	22	(94)	7,281
U.S. obligations multifamily MBS	1	—	1	—	—	1
GSE single-family MBS	32,162	—	32,162	178	(447)	31,893
GSE multifamily MBS	43,293	—	43,293	60	(222)	43,131
Private-label residential MBS	2,647	(273)	2,374	560	(8)	2,926
Manufactured housing loan ABS	38	—	38	2	—	40
Home equity loan ABS	126	(11)	115	34	(1)	148
Total mortgage-backed securities	85,620	(284)	85,336	856	(772)	85,420
Total	$ 93,222	$ (284)	$ 92,938	$ 914	$ (826)	$ 93,026

	December 31, 2017					
	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	$ 675	$ —	$ 675	$ —	$ —	$ 675
U.S. obligations	1,577	—	1,577	28	(1)	1,604
GSE and Tennessee Valley Authority obligations	5,743	—	5,743	72	(6)	5,809
State or local housing agency obligations	2,318	—	2,318	3	(69)	2,252
Total non-mortgage-backed securities	10,313	—	10,313	103	(76)	10,340
Mortgage-backed securities						
U.S. obligations single-family MBS	7,869	—	7,869	22	(32)	7,859
U.S. obligations multifamily MBS	3	—	3	—	—	3
GSE single-family MBS	33,925	—	33,925	268	(214)	33,979
GSE multifamily MBS	41,088	—	41,088	173	(64)	41,197
Private-label residential MBS	3,406	(326)	3,080	616	(15)	3,681
Manufactured housing loan ABS	54	—	54	2	—	56
Home equity loan ABS	148	(14)	134	34	(1)	167
Total mortgage-backed securities	86,493	(340)	86,153	1,115	(326)	86,942
Total	$ 96,806	$ (340)	$ 96,466	$ 1,218	$ (402)	$ 97,282

(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)

	September 30, 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	$ 181	$ (1)	$ 19	$ (1)	$ 200	$ (2)
GSE and Tennessee Valley Authority obligations	186	(6)	40	—	226	(6)
State or local housing agency obligations	351	—	774	(46)	1,125	(46)
Total non-mortgage-backed securities	718	(7)	833	(47)	1,551	(54)
Mortgage-backed securities						
U.S. obligations single-family MBS	1,769	(31)	1,642	(63)	3,411	(94)
GSE single-family MBS	7,946	(93)	7,838	(354)	15,784	(447)
GSE multifamily MBS	15,833	(132)	4,127	(90)	19,960	(222)
Private-label residential MBS	55	—	1,103	(134)	1,158	(134)
Home equity loan ABS	2	—	30	(1)	32	(1)
Total mortgage-backed securities	25,605	(256)	14,740	(642)	40,345	(898)
Total	$ 26,323	$ (263)	$ 15,573	$ (689)	$ 41,896	$ (952)

	December 31, 2017					
	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	$ 633	$ —	$ 23	$ (1)	$ 656	$ (1)
GSE and Tennessee Valley Authority obligations	996	(1)	1,495	(5)	2,491	(6)
State or local housing agency obligations	232	—	941	(69)	1,173	(69)
Total non-mortgage-backed securities	1,861	(1)	2,459	(75)	4,320	(76)
Mortgage-backed securities						
U.S. obligations single-family MBS	2,786	(15)	1,544	(17)	4,330	(32)
GSE single-family MBS	5,795	(42)	7,794	(172)	13,589	(214)
GSE multifamily MBS	7,238	(32)	3,399	(32)	10,637	(64)
Private-label residential MBS	52	—	1,554	(169)	1,606	(169)
Home equity loan ABS	1	—	35	(1)	36	(1)
Total mortgage-backed securities	15,872	(89)	14,326	(391)	30,198	(480)
Total	$ 17,733	$ (90)	$ 16,785	$ (466)	$ 34,518	$ (556)

(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)

	September 30, 2018			December 31, 2017		
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	$ 1,904	$ 1,904	$ 1,904	$ 4,332	$ 4,332	$ 4,329
Due after one year through five years	2,166	2,166	2,167	2,244	2,244	2,250
Due after five years through ten years	925	925	945	994	994	1,025
Due after ten years	2,607	2,607	2,590	2,743	2,743	2,736
Total non-mortgage-backed securities	7,602	7,602	7,606	10,313	10,313	10,340
Mortgage-backed securities(2)	85,620	85,336	85,420	86,493	86,153	86,942
Total	$ 93,222	$ 92,938	$ 93,026	$ 96,806	$ 96,466	$ 97,282

(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) 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 September 30,		Nine Months Ended September 30,	
	2018	**2017**	**2018**	**2017**
Proceeds from sale of HTM securities	$ 111	$ 62	$ 172	$ 163
Carrying value of HTM securities sold	108	60	169	159
Net realized gains (losses) from sale of HTM securities	$ 3	$ 2	$ 3	$ 4

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-16, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017. The FHLBanks' uniform framework is disclosed in *Note 7 - Other-than-Temporary Impairment Analysis*, pages F-32 to F-34, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017.

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 securities 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 scenario of cash flows determined based on the model approach reflects a best estimate scenario and includes 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 10.0% to an increase of 15.0% over the twelve-month period beginning July 1, 2018. For the vast majority of markets, the projected short-term housing price changes range from an increase of 3.0% to an increase of 7.0%. 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 September 30, 2018 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 September 30, 2018, 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 September 30, 2018(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	$ 516	$ 415	$ 311	$ 466	$ 1,413	$ 1,146	$ 1,304
Alt-A	904	663	524	794	3,864	3,082	3,472
Subprime	319	156	126	241	—	—	—
Total private-label residential MBS	1,739	1,234	961	1,501	5,277	4,228	4,776
Home equity loan ABS(2)							
Subprime	69	48	37	69	—	—	—
Total home equity loan ABS	69	48	37	69	—	—	—
Total	$ 1,808	$ 1,282	$ 998	$ 1,570	$ 5,277	$ 4,228	$ 4,776

(1) Table 6.1 does not include all HTM and AFS securities that are in an unrealized loss position as of September 30, 2018. 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 presents a rollforward of the amounts related to credit losses recognized in earnings.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Balance, at beginning of period	$ 2,599	$ 2,865	$ 2,749	$ 2,983
Additions				
Additional OTTI credit losses for securities upon which an OTTI charge was previously recognized	5	7	12	20
Reductions				
Securities sold or matured during the period	(8)	—	(51)	(6)
Increases in cash flows expected to be collected (accreted as interest income over the remaining lives of the applicable securities)	(54)	(60)	(168)	(185)
Balance, at end of period	$ 2,542	$ 2,812	$ 2,542	$ 2,812

All other AFS and HTM Investment Securities

At September 30, 2018, 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 September 30, 2018.

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 Redemption Terms
(dollars in millions)

	September 30, 2018		December 31, 2017	
Contractual Maturity	**Amount**	**Weighted-Average Interest Rate**	**Amount**	**Weighted-Average Interest Rate**
Overdrawn demand and overnight deposit accounts	$ 21	3.12%	$ 12	1.72%
Due in 1 year or less	398,302	2.25%	408,817	1.54%
Due after 1 year through 2 years	115,578	2.29%	104,117	1.70%
Due after 2 years through 3 years	68,672	2.37%	78,366	1.74%
Due after 3 years through 4 years	30,881	2.43%	54,087	1.88%
Due after 4 years through 5 years	31,194	2.51%	23,030	2.00%
Thereafter	63,943	2.50%	63,685	1.96%
Total principal amount	708,591	2.31%	732,114	1.66%
Commitment fees	(1)		(1)	
Discounts on AHP advances	(28)		(27)	
Premiums	68		90	
Discounts	(46)		(55)	
Hedging adjustments	(2,475)		(557)	
Fair value option valuation adjustments	(104)		(20)	
Total	$ 706,005		$ 731,544	

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. When issuing convertible advances, an FHLBank may purchase put options from a member that allow that FHLBank to convert the fixed-rate advance to a variable-rate advance at the current market rate or another structure after an agreed-upon lockout period. A convertible advance carries a lower 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 index. 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 Year of Contractual Maturity or Next Call Date and Next Put or Convert Date
(dollars in millions)

	Year of Contractual Maturity or Next Call Date(1)		Year of Contractual Maturity or Next Put or Convert Date	
	September 30, 2018	December 31, 2017	September 30, 2018	December 31, 2017
Overdrawn demand and overnight deposit accounts	$ 21	$ 12	$ 21	$ 12
Due in 1 year or less	496,586	507,706	405,253	412,106
Due after 1 year through 2 years	89,259	92,983	120,027	106,267
Due after 2 years through 3 years	48,210	54,395	73,062	79,399
Due after 3 years through 4 years	25,165	34,703	31,170	54,516
Due after 4 years through 5 years	16,261	15,825	30,267	22,422
Thereafter	33,089	26,490	48,791	57,392
Total principal amount	$ 708,591	$ 732,114	$ 708,591	$ 732,114

(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)

	September 30, 2018	December 31, 2017
Total fixed-rate	$ 403,978	$ 405,060
Total variable-rate	304,613	327,054
Total principal amount	$ 708,591	$ 732,114

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 $501.4 billion and $527.8 billion at September 30, 2018 and December 31, 2017. These advances were made to 110 borrowers (members and non-members) at both September 30, 2018 and December 31, 2017, which represented 70.8% and 72.1% of total advances outstanding at September 30, 2018 and December 31, 2017. (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)

	September 30, 2018	December 31, 2017
Fixed-rate, long-term single-family mortgage loans	$ 53,682	$ 46,955
Fixed-rate, medium-term(1) single-family mortgage loans	5,280	5,837
Total unpaid principal balance	58,962	52,792
Premiums	1,121	1,019
Discounts	(39)	(40)
Deferred loan costs, net	—	(3)
Hedging adjustments	46	75
Total mortgage loans held for portfolio	$ 60,090	$ 53,843

(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)

	September 30, 2018	December 31, 2017
Conventional MPF/MPP mortgage loans	$ 55,367	$ 48,978
Government-guaranteed or -insured mortgage loans	3,595	3,814
Total unpaid principal balance	$ 58,962	$ 52,792

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-37 to F-43 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, 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 September 30, 2018 and December 31, 2017, 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 September 30, 2018 and December 31, 2017, 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 and nine months ended September 30, 2018 and 2017.

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 September 30, 2018 and December 31, 2017, 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 September 30, 2018 and December 31, 2017. 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.

Mortgage Loans Held for Portfolio - Conventional MPF and Conventional MPP

Rollforward of Allowance for Credit Losses on Mortgage Loans. Each FHLBank 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 and nine months ended September 30, 2018 and 2017.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Balance, at beginning of period	$ 16	$ 17	$ 16	$ 18
Charge-offs, net of recoveries	(1)	—	(2)	(2)
Provision (reversal) for credit losses	—	(1)	1	—
Balance, at end of period	$ 15	$ 16	$ 15	$ 16

Table 9.2 presents the recorded investment in mortgage loans by impairment methodology at September 30, 2018 and December 31, 2017. 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)

	September 30, 2018	December 31, 2017
Allowance for credit losses		
Individually evaluated for impairment	$ 8	$ 6
Collectively evaluated for impairment	7	10
Total allowance for credit losses	$ 15	$ 16
Recorded investment		
Individually evaluated for impairment	$ 226	$ 252
Collectively evaluated for impairment	56,465	49,936
Total recorded investment	$ 56,691	$ 50,188

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 September 30, 2018 and December 31, 2017.

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

	September 30, 2018		
	Conventional MPF/MPP	Government-Guaranteed or -Insured(1)	Total
Past due 30-59 days	$ 299	$ 125	$ 424
Past due 60-89 days	67	41	108
Past due 90 days or more	148	56	204
Total past due mortgage loans	514	222	736
Total current mortgage loans	56,177	3,451	59,628
Total mortgage loans(2)	$ 56,691	$ 3,673	$ 60,364
Other delinquency statistics			
In process of foreclosure, included above(3)	$ 65	$ 21	$ 86
Serious delinquency rate(4)	0.26%	1.52%	0.34%
Past due 90 days or more and still accruing interest	$ 31	$ 56	$ 87
Loans on non-accrual status	$ 146	$ —	$ 146

	December 31, 2017		
	Conventional MPF/MPP	Government-Guaranteed or -Insured(1)	Total
Past due 30-59 days	$ 384	$ 159	$ 543
Past due 60-89 days	91	47	138
Past due 90 days or more	202	68	270
Total past due mortgage loans	677	274	951
Total current mortgage loans	49,511	3,625	53,136
Total mortgage loans(2)	$ 50,188	$ 3,899	$ 54,087
Other delinquency statistics			
In process of foreclosure, included above(3)	$ 89	$ 20	$ 109
Serious delinquency rate(4)	0.41%	1.74%	0.51%
Past due 90 days or more and still accruing interest	$ 40	$ 68	$ 108
Loans on non-accrual status	$ 193	$ —	$ 193

(1) No FHLBank recorded any allowance for credit losses on government-guaranteed or -insured mortgage loans at September 30, 2018 and December 31, 2017.
(2) The difference between the recorded investment and the carrying value of total mortgage loans of $274 million and $244 million at September 30, 2018 and December 31, 2017, 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).

Individually Evaluated Impaired Loans. Certain conventional mortgage loans, primarily impaired mortgage loans that are considered collateral-dependent, may be specifically identified for the purpose of calculating the allowance for credit losses. The estimated credit losses on impaired collateral-dependent loans may be separately determined because sufficient information exists to make reasonable estimates of the inherent losses on these loans on an individual loan basis. An FHLBank may estimate the fair value of this collateral by applying an appropriate loss severity rate or using third party estimates or property valuation model(s).

Table 9.4 presents the recorded investment, unpaid principal balance, and related allowance of impaired conventional MPF/MPP mortgage loans individually assessed for impairment at September 30, 2018 and December 31, 2017.

Table 9.4 - Individually Evaluated Impaired Conventional MPF/MPP Mortgage Loans
(dollars in millions)

	September 30, 2018			December 31, 2017		
	Recorded Investment	Unpaid Principal Balance	Related Allowance	Recorded Investment	Unpaid Principal Balance	Related Allowance
With no related allowance	$ 200	$ 202	$ —	$ 223	$ 226	$ —
With an allowance	25	25	8	28	28	6
Total	$ 225	$ 227	$ 8	$ 251	$ 254	$ 6

Table 9.5 presents the average recorded investment and related interest income recognized on impaired loans during the three and nine months ended September 30, 2018 and 2017.

Table 9.5 - Average Recorded Investment of Individually Impaired Conventional MPF/MPP Mortgage Loans and Related Interest Income Recognized
(dollars in millions)

	Three Months Ended September 30,			
	2018		2017	
	Average Recorded Investment	Interest Income Recognized	Average Recorded Investment	Interest Income Recognized
With no related allowance	$ 204	$ 1	$ 236	$ 1
With an allowance	25	—	30	—
Total	$ 229	$ 1	$ 266	$ 1

	Nine Months Ended September 30,			
	2018		2017	
	Average Recorded Investment	Interest Income Recognized	Average Recorded Investment	Interest Income Recognized
With no related allowance	$ 211	$ 3	$ 251	$ 3
With an allowance	27	1	31	1
Total	$ 238	$ 4	$ 282	$ 4

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 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-41 to F-42 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, for additional information on credit enhancements for the Mortgage Partnership Finance Program and Mortgage Purchase Program.)

At September 30, 2018 and December 31, 2017, the amounts of First Loss Account remaining to cover the losses under the MPF Program were $442 million and $415 million. These balances exclude 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 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 September 30, 2018 and December 31, 2017, the amounts of Lender Risk Account remaining to cover future potential losses under the MPP were $380 million and $352 million. The Lender Risk Account is a lender-specific account funded by an 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 pages F-42 to F-43 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, 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 September 30, 2018 and December 31, 2017. 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 September 30, 2018 and December 31, 2017.

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-43 to F-51 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, for a description of the application of derivatives and the types of derivatives and hedged items.)

Each FHLBank reevaluates its hedging strategies from time to time 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. 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)

	September 30, 2018			December 31, 2017(1)		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as hedging instruments						
Interest-rate swaps	$ 359,910	$ 1,266	$ 1,726	$ 342,989	$ 1,605	$ 1,915
Interest-rate swaptions	—	—	—	2	—	—
Total derivatives designated as hedging instruments	359,910	1,266	1,726	342,991	1,605	1,915
Derivatives not designated as hedging instruments						
Interest-rate swaps	130,232	394	371	158,613	362	332
Interest-rate swaptions	3,835	24	—	2,631	29	—
Interest-rate caps or floors	19,532	11	3	27,961	9	2
Interest-rate futures or forwards	592	4	—	391	—	—
Mortgage delivery commitments	1,500	1	3	1,206	2	1
Other	732	2	11	546	6	6
Total derivatives not designated as hedging instruments	156,423	436	388	191,348	408	341
Total derivatives before netting and collateral adjustments	$ 516,333	1,702	2,114	$ 534,339	2,013	2,256
Netting adjustments and cash collateral(2)		(712)	(1,759)		(1,022)	(1,807)
Total derivative assets and total derivative liabilities		$ 990	$ 355		$ 991	$ 449

(1) To conform with current presentation, $401 million of variation margin on cleared derivatives has been allocated to the individual derivative instruments as of December 31, 2017. Previously, this amount was included with Netting adjustments and cash collateral.

(2) 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 $1,744 million and $1,465 million at September 30, 2018 and December 31, 2017. Cash collateral received and related accrued interest was $698 million and $680 million at September 30, 2018 and December 31, 2017.

Table 10.2 presents the components of net gains (losses) on derivatives and hedging activities as presented on the Combined Statement of Income.

Table 10.2 - Net Gains (Losses) on Derivatives and Hedging Activities
(dollars in millions)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Derivatives designated as hedging instruments				
Total net gains related to fair value hedge ineffectiveness(1)	$ 5	$ 2	$ 72	$ 315
Total net gains related to cash flow hedge ineffectiveness	(1)	1	1	3
Derivatives not designated as hedging instruments				
Economic hedges				
Interest-rate swaps	65	9	164	48
Interest-rate swaptions	5	(4)	(4)	(28)
Interest-rate caps or floors	(1)	(11)	1	(48)
Interest-rate futures or forwards	5	(4)	12	(11)
Net interest settlements	(39)	(9)	(100)	(35)
Other	1	—	6	—
Mortgage delivery commitments	(6)	14	(13)	40
Intermediary interest-rate swap transactions	—	—	—	4
Total net gains (losses) related to derivatives not designated as hedging instruments	30	(5)	66	(30)
Other(2)	(10)	2	(23)	5
Net gains (losses) on derivatives and hedging activities	$ 24	$ —	$ 116	$ 293

(1) Consists of interest-rate swaps.
(2) Consists of price alignment amount on cleared derivatives for which variation margin is characterized as a daily settled contract.

Table 10.3 presents, by type of hedged item, the gains (losses) on derivatives and the related hedged items in fair value hedging relationships and the effect of those derivatives on the FHLBanks' net interest income.

Table 10.3 - Effect of Fair Value Hedge-Related Derivative Instruments
(dollars in millions)

	Three Months Ended September 30, 2018			
Hedged Item Type	Gains (Losses) on Derivatives	Gains (Losses) on Hedged Items	Net Fair Value Hedge Ineffectiveness	Net Effect of Derivatives on Net Interest Income(1)
Advances	$ 328	$ (324)	$ 4	$ 173
Consolidated bonds	(71)	79	8	(175)
Consolidated discount notes	1	(1)	—	(1)
Available-for-sale securities	362	(369)	(7)	(11)
Total	$ 620	$ (615)	$ 5	$ (14)

	Three Months Ended September 30, 2017			
Hedged Item Type	Gains (Losses) on Derivatives	Gains (Losses) on Hedged Items	Net Fair Value Hedge Ineffectiveness	Net Effect of Derivatives on Net Interest Income(1)
Advances	$ 203	$ (186)	$ 17	$ (154)
Consolidated bonds	(47)	43	(4)	33
Available-for-sale securities	46	(57)	(11)	(106)
Total	$ 202	$ (200)	$ 2	$ (227)

Hedged Item Type	Nine Months Ended September 30, 2018 Gains (Losses) on Derivatives	Gains (Losses) on Hedged Items	Net Fair Value Hedge Ineffectiveness	Net Effect of Derivatives on Net Interest Income(1)
Advances	$ 1,959	$ (1,896)	$ 63	$ 295
Consolidated bonds	(1,121)	1,108	(13)	(380)
Consolidated discount notes	2	(2)	—	(2)
Available-for-sale securities	1,422	(1,400)	22	(104)
Total	$ 2,262	$ (2,190)	$ 72	$ (191)

Hedged Item Type	Nine Months Ended September 30, 2017 Gains (Losses) on Derivatives	Gains (Losses) on Hedged Items	Net Fair Value Hedge Ineffectiveness	Net Effect of Derivatives on Net Interest Income(1)
Advances	$ 601	$ (257)	$ 344	$ (610)
Consolidated bonds	91	(107)	(16)	233
Consolidated discount notes	3	(3)	—	(3)
Available-for-sale securities	(42)	29	(13)	(363)
Total	$ 653	$ (338)	$ 315	$ (743)

(1) The net effect of derivatives, in fair value hedge relationships, on net interest income is included in the interest income or interest expense line item of the respective hedged item type. These amounts include the effect of net interest settlements attributable to designated fair value hedges but do not include $(7) million and $(2) million of amortization/accretion related to fair value hedging activities for the three months ended September 30, 2018 and 2017 and $(15) million and $(298) million for the nine months ended September 30, 2018 and 2017.

Table 10.4 presents by type of hedged item in cash flow hedging relationships, the gains (losses) recognized in OCI, the gains (losses) reclassified from AOCI into income, and the effect of those hedging activities on the FHLBanks' net gains (losses) on derivatives and hedging activities on the Combined Statement of Income. (See *Note 14 - Accumulated Other Comprehensive Income (Loss)* for more details on the effect of cash flow hedges on AOCI.)

Table 10.4 - Effect of Cash Flow Hedge-Related Derivative Instruments
(dollars in millions)

Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	Three Months Ended September 30, 2018 Amount of Gains (Losses) Recognized in OCI on Derivatives (Effective Portion)	Location of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)
Interest-rate swaps				
Consolidated bonds	$ 3	Interest expense	$ 1	$ —
Consolidated discount notes	48	Interest expense	(10)	(1)
Total	$ 51		$ (9)	$ (1)

Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	Three Months Ended September 30, 2017 Amount of Gains (Losses) Recognized in OCI on Derivatives (Effective Portion)	Location of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)
Interest-rate swaps				
Consolidated bonds	$ —	Interest expense	$ (4)	$ —
Consolidated discount notes	47	Interest expense	(1)	1
Interest-rate caps or floors				
Advances	—	Interest income	3	—
Total	$ 47		$ (2)	$ 1

Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	Nine Months Ended September 30, 2018 Amount of Gains (Losses) Recognized in OCI on Derivatives (Effective Portion)	Location of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)
Interest-rate swaps				
Consolidated bonds	$ 16	Interest expense	$ (2)	$ —
Consolidated discount notes	232	Interest expense	(13)	1
Interest-rate caps or floors				
Advances	—	Interest income	1	—
Total	$ 248		$ (14)	$ 1

Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	Nine Months Ended September 30, 2017 Amount of Gains (Losses) Recognized in OCI on Derivatives (Effective Portion)	Location of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains (Losses) Reclassified from AOCI into Income (Effective Portion)	Amount of Gains Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)
Interest-rate swaps				
Consolidated bonds	$ (6)	Interest expense	$ (14)	$ 1
Consolidated discount notes	112	Interest expense	(3)	2
Interest-rate caps or floors				
Advances	—	Interest income	8	—
Total	$ 106		$ (9)	$ 3

(1) Table 10.4 does not include $(13) million and $(48) million for the effect of net interest settlements on net interest income attributable to open cash flow hedges for the three months ended September 30, 2018 and 2017 and $(82) million and $(153) million for the nine months ended September 30, 2018 and 2017.

For the three and nine months ended September 30, 2018 and 2017, 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 September 30, 2018, $6 million of deferred net gains on derivative instruments in AOCI is expected to be reclassified to earnings during the next twelve months. At September 30, 2018, the maximum length of time over which an FHLBank is hedging its exposure to the variability in future cash flows for forecasted transactions is fourteen years, excluding those forecasted transactions related to the payment of variable interest on existing financial instruments.

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 September 30, 2018, was $627 million, for which the FHLBanks have posted collateral with a fair value of $598 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 $26 million of collateral at fair value to their uncleared derivatives counterparties at September 30, 2018.

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. Effective January 16, 2018, LCH Ltd. made certain amendments to its rulebook, changing the legal characterization of variation margin payments to be daily settlement payments, rather than collateral. CME Clearing made the same change to its rulebook on January 3, 2017. As a result, at both Clearinghouses, variation margin is characterized as daily settlement payments, rather than cash collateral. At both Clearinghouses, initial margin continues to be 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 September 30, 2018.

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)

	September 30, 2018						
	Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Received or Pledged Not Offset		
	Amount Recognized	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	$ 1,390	$ (1,220)	$ 3	$ 173	$ 4	$ 103	$ 66
Cleared	309	508	—	817	—	—	817
Total				$ 990			$ 883
Derivative Liabilities							
Uncleared	$ 1,727	$ (1,423)	$ 3	$ 307	$ 11	$ 207	$ 89
Cleared	384	(336)	—	48	7	17	24
Total				$ 355			$ 113

	December 31, 2017(3)						
	Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Received or Pledged Not Offset		
	Amount Recognized	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	$ 782	$ (646)	$ 2	$ 138	$ —	$ 110	$ 28
Cleared	1,229	(376)	—	853	—	—	853
Total				$ 991			$ 881
Derivative Liabilities							
Uncleared	$ 1,492	$ (1,078)	$ 1	$ 415	$ 8	$ 281	$ 126
Cleared	763	(729)	—	34	14	6	14
Total				$ 449			$ 140

(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 September 30, 2018 and December 31, 2017, the FHLBanks had additional net credit exposure of $1,111 million and $1,034 million due to instances where an FHLBank's non-cash collateral to a counterparty exceeded the FHLBank's net derivative position.
(3) To conform with current presentation, $401 million of variation margin on cleared derivatives has been allocated to the individual derivative instruments within the Amount Recognized as of December 31, 2017. Previously, this amount was included with Gross Amount of Netting Adjustments and Cash Collateral.

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.

Table 11.1 - Deposits
(dollars in millions)

	September 30, 2018	December 31, 2017
Interest-bearing		
Demand and overnight	$ 7,580	$ 6,960
Term	326	481
Other	6	11
Total interest-bearing	7,912	7,452
Non-interest-bearing		
Demand and overnight	121	136
Other	202	201
Total non-interest-bearing	323	337
Total deposits	$ 8,235	$ 7,789

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.

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

	Book Value	Principal Amount	Weighted-Average Interest Rate(1)
September 30, 2018	$ 402,823	$ 403,882	2.06%
December 31, 2017	$ 391,480	$ 392,049	1.22%

(1) Represents yield to maturity excluding concession fees.

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

	September 30, 2018		December 31, 2017	
Year of Contractual Maturity	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
Due in 1 year or less	$ 384,120	1.95%	$ 391,541	1.32%
Due after 1 year through 2 years	96,347	2.05%	119,384	1.44%
Due after 2 years through 3 years	41,401	2.11%	34,949	1.91%
Due after 3 years through 4 years	27,686	2.17%	31,927	1.84%
Due after 4 years through 5 years	21,777	2.51%	22,572	2.20%
Thereafter	43,823	3.03%	41,711	2.80%
Index-amortizing notes	—	—	18	5.39%
Total principal amount	615,154	2.08%	642,102	1.53%
Net premiums	283		346	
Hedging adjustments	(1,883)		(784)	
Fair value option valuation adjustments	(83)		(63)	
Total	$ 613,471		$ 641,601	

Consolidated bonds outstanding were issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms that are indexed primarily to LIBOR. 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	September 30, 2018	December 31, 2017
Non-callable/non-putable	$ 519,598	$ 563,990
Callable	95,556	78,112
Total principal amount	$ 615,154	$ 642,102

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

Year of Contractual Maturity or Next Call Date	September 30, 2018	December 31, 2017
Due in 1 year or less	$ 466,463	$ 459,695
Due after 1 year through 2 years	83,435	113,678
Due after 2 years through 3 years	25,017	25,258
Due after 3 years through 4 years	14,968	18,537
Due after 4 years through 5 years	9,640	9,052
Thereafter	15,631	15,864
Index-amortizing notes	—	18
Total principal amount	$ 615,154	$ 642,102

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 September 30, 2018, each FHLBank was in compliance with FHFA regulatory capital requirements.

Table 13.1 - Risk-Based Capital Requirements at September 30, 2018
(dollars in millions)

	Risk-Based Capital	
FHLBank	Minimum Requirement	Actual
Boston	$ 746	$ 3,895
New York	920	7,541
Pittsburgh	1,225	4,826
Atlanta	1,836	7,663
Cincinnati	924	5,272
Indianapolis	837	3,126
Chicago	1,219	5,519
Des Moines	1,239	7,459
Dallas	1,044	3,657
Topeka	529	2,178
San Francisco	1,989	6,480

Table 13.2 - Regulatory Capital Requirements at September 30, 2018
(dollars in millions)

	Regulatory Capital Ratio		Regulatory Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	4.0%	6.0%	$ 2,588	$ 3,895
New York	4.0%	5.2%	5,834	7,541
Pittsburgh	4.0%	5.2%	3,739	4,826
Atlanta	4.0%	4.9%	6,224	7,663
Cincinnati	4.0%	5.3%	3,992	5,272
Indianapolis	4.0%	4.7%	2,659	3,126
Chicago	4.0%	6.0%	3,656	5,519
Des Moines	4.0%	5.2%	5,764	7,459
Dallas	4.0%	5.0%	2,948	3,657
Topeka	4.0%	4.6%	2,052	2,362
San Francisco	4.0%	6.3%	4,119	6,480

Table 13.3 - Leverage Capital Requirements at September 30, 2018
(dollars in millions)

	Leverage Capital Ratio		Leverage Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	5.0%	9.0%	$ 3,235	$ 5,843
New York	5.0%	7.8%	7,293	11,312
Pittsburgh	5.0%	7.7%	4,674	7,239
Atlanta	5.0%	7.4%	7,780	11,494
Cincinnati	5.0%	7.9%	4,990	7,908
Indianapolis	5.0%	7.1%	3,324	4,689
Chicago	5.0%	9.1%	4,571	8,278
Des Moines	5.0%	7.8%	7,205	11,188
Dallas	5.0%	7.4%	3,686	5,486
Topeka	5.0%	6.7%	2,565	3,451
San Francisco	5.0%	9.4%	5,149	9,720

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.

The FHLBank of San Francisco’s Excess Stock Repurchase, Retained Earnings, and Dividend Framework (Framework) assesses the level and adequacy of retained earnings and establishes amounts to be retained in restricted retained earnings, which are not made available in the current dividend period, and maintains an amount of total retained earnings at least equal to its required retained earnings as described in the Framework. Prior to July 2017, the FHLBank of San Francisco’s Framework had three categories of restricted retained earnings: Valuation Adjustments, Other Restricted Retained Earnings (which represented a targeted amount), and the Capital Agreement. Under the Framework, the FHLBank of San Francisco’s required amount of restricted retained earnings was determined using its retained earnings methodology. As determined using the FHLBank of San Francisco’s methodology, from July 2015 to January 2017, its restricted retained earnings requirement was $2,000 million, and from January 2017 to July 2017, its restricted retained earnings requirement was $2,300 million.

In July 2017, the FHLBank of San Francisco’s board of directors approved the transfer of all amounts classified as restricted retained earnings, other than the amounts related to the Capital Agreement, to unrestricted retained earnings. As a conforming change related to the transfer, the FHLBank of San Francisco’s board of directors amended the Framework to eliminate two of the categories of restricted retained earnings (Valuation Adjustments and Other Restricted Retained Earnings) and approved revisions to its retained earnings methodology to provide for a required level of total retained earnings of $2,300 million for loss protection, capital compliance, and business growth. In January 2018, the FHLBank of San Francisco's retained earnings methodology was further revised to provide a required level of total retained earnings of $2,500 million. The FHLBank of San Francisco satisfies its retained earnings requirement with both restricted retained earnings (i.e., amounts related to the Capital Agreement) and unrestricted retained earnings.

Table 13.4 presents the components of retained earnings, including the restricted amounts related to the Capital Agreement and the restricted amounts related to the FHLBank of San Francisco's Framework.

Table 13.4 - Retained Earnings
(dollars in millions)

	Unrestricted Retained Earnings	Capital Agreement Restricted Retained Earnings	Other Restricted Retained Earnings(1)	Total Restricted Retained Earnings	Total Retained Earnings
Balance, December 31, 2016	$ 11,789	$ 2,873	$ 1,668	$ 4,541	$ 16,330
Net income	1,903	504	103	607	2,510
Transfers to unrestricted/(from) restricted retained earnings	1,771	—	(1,771)	(1,771)	—
Dividends on capital stock					
Cash	(1,070)	—	—	—	(1,070)
Stock	(89)	—	—	—	(89)
Balance, September 30, 2017	$ 14,304	$ 3,377	$ —	$ 3,377	$ 17,681
Balance, December 31, 2017	$ 14,549	$ 3,550	$ —	$ 3,550	$ 18,099
Adjustment for cumulative effect of accounting change - recognition and measurement of financial instruments	5	—	—	—	5
Net income	2,215	556	—	556	2,771
Dividends on capital stock					
Cash	(1,454)	—	—	—	(1,454)
Stock	(113)	—	—	—	(113)
Balance, September 30, 2018	$ 15,202	$ 4,106	$ —	$ 4,106	$ 19,308

(1) Represents retained earnings restricted by the FHLBank of San Francisco's Framework, which were eliminated in July 2017.

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 both the three months ended September 30, 2018 and 2017, dividends on mandatorily redeemable capital stock of $17 million were recorded as interest expense. For the nine months ended September 30, 2018 and 2017, dividends on mandatorily redeemable capital stock of $51 million and $55 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 13.5 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 13.5 - Mandatorily Redeemable Capital Stock Rollforward
(dollars in millions)

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Balance, beginning of period	$ 1,206	$ 1,484	$ 1,272	$ 1,704
Net capital stock subject to mandatory redemption reclassified (to)/ from capital	289	306	1,066	1,002
Redemption/repurchase of mandatorily redeemable capital stock	(417)	(449)	(1,260)	(1,363)
Other(1)	—	6	—	4
Balance, end of period	$ 1,078	$ 1,347	$ 1,078	$ 1,347

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

Table 13.6 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 13.6 - Mandatorily Redeemable Capital Stock by Contractual Year of Redemption
(dollars in millions)

	September 30, 2018	December 31, 2017
Year 1	$ 3	$ 14
Year 2	261	34
Year 3	11	312
Year 4	23	21
Year 5	83	43
Thereafter(1)	654	791
Past contractual redemption date due to remaining activity(2)	43	57
Total	$ 1,078	$ 1,272

(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 September 30, 2018, 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 and nine months ended September 30, 2018 and 2017.

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

	Three Months Ended September 30,					
	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, June 30, 2017	$ 763	$ 485	$ (386)	$ (322)	$ (98)	$ 442
Other comprehensive income before reclassifications						
Unrealized gains (losses)	23	65	—	47	—	135
Non-credit OTTI losses	—	—	—	—	—	—
Change in fair value of other-than-temporarily impaired securities	—	20	—	—	—	20
Accretion of non-credit loss	—	—	19	—	—	19
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	—	—	—	—	—	—
Non-credit OTTI to credit OTTI	—	6	1	—	—	7
Amortization on hedging activities(1)	—	—	—	1	—	1
Amortization - pension and postretirement	—	—	—	—	4	4
Net current period other comprehensive income (loss)	23	91	20	48	4	186
Balance, September 30, 2017	$ 786	$ 576	$ (366)	$ (274)	$ (94)	$ 628
Balance, June 30, 2018	$ 673	$ 541	$ (305)	$ 14	$ (117)	$ 806
Other comprehensive income before reclassifications						
Unrealized gains (losses)	(27)	(7)	—	51	—	17
Non-credit OTTI losses	—	—	(1)	—	—	(1)
Non-credit losses included in basis of securities sold	—	—	4	—	—	4
Change in fair value of other-than-temporarily impaired securities	—	4	—	—	—	4
Accretion of non-credit loss	—	—	18	—	—	18
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	—	—	—	—	—	—
Non-credit OTTI to credit OTTI	—	1	—	—	—	1
Amortization on hedging activities(1)	—	—	—	10	—	10
Amortization - pension and postretirement	—	—	—	—	2	2
Net current period other comprehensive income (loss)	(27)	(2)	21	61	2	55
Balance, September 30, 2018	$ 646	$ 539	$ (284)	$ 75	$ (115)	$ 861

	Nine Months Ended September 30,					
	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, 2016	$ 407	$ 355	$ (432)	$ (386)	$ (101)	$ (157)
Other comprehensive income before reclassifications						
Unrealized gains (losses)	381	138	—	106	—	625
Non-credit OTTI losses	—	(3)	—	—	—	(3)
Change in fair value of other-than-temporarily impaired securities	—	73	—	—	—	73
Accretion of non-credit loss	—	—	64	—	—	64
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	(2)	—	—	—	—	(2)
Non-credit OTTI to credit OTTI	—	13	2	—	—	15
Amortization on hedging activities(1)	—	—	—	6	—	6
Amortization - pension and postretirement	—	—	—	—	7	7
Net current period other comprehensive income (loss)	379	221	66	112	7	785
Balance, September 30, 2017	$ 786	$ 576	$ (366)	$ (274)	$ (94)	$ 628
Balance, December 31, 2017	$ 790	$ 573	$ (340)	$ (186)	$ (113)	$ 724
Other comprehensive income before reclassifications						
Unrealized gains (losses)	(139)	(24)	—	248	—	85
Non-credit OTTI losses	—	(11)	(1)	—	—	(12)
Non-credit losses included in basis of securities sold	—	—	4	—	—	4
Change in fair value of other-than-temporarily impaired securities	—	30	—	—	—	30
Accretion of non-credit loss	—	—	53	—	—	53
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	—	(32)	—	—	—	(32)
Non-credit OTTI to credit OTTI	—	3	—	—	—	3
Amortization on hedging activities(1)	—	—	—	13	—	13
Amortization - pension and postretirement	—	—	—	—	(2)	(2)
Net current period other comprehensive income (loss)	(139)	(34)	56	261	(2)	142
Adjustment for cumulative effect of accounting change - recognition and measurement of financial instruments	(5)	—	—	—	—	(5)
Balance, September 30, 2018	$ 646	$ 539	$ (284)	$ 75	$ (115)	$ 861

	Three Months Ended September 30,		Nine Months Ended September 30,	
(1) **Amortization on hedging activities consists of amortization to:**	2018	2017	2018	2017
Interest income - Advances	$ —	$ 3	$ 1	$ 8
Interest expense - Consolidated bonds	1	(4)	(2)	(14)
Interest expense - Consolidated discount notes	(10)	(1)	(13)	(3)
Net gains (losses) on derivatives and hedging activities	(1)	1	1	3
Total amortization on hedging activities	$ (10)	$ (1)	$ (13)	$ (6)

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 September 30, 2018 and December 31, 2017. 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 and nine months ended September 30, 2018 and 2017.

Table 15.1 presents the carrying value, fair value, and fair value hierarchy of financial assets and liabilities of the FHLBanks at September 30, 2018 and December 31, 2017. 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)

	September 30, 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	$ 772	$ 772	$ 772	$ —	$ —	$ —
Interest-bearing deposits	13,619	13,619	5,453	8,166	—	—
Securities purchased under agreements to resell	45,307	45,307	—	45,307	—	—
Federal funds sold	72,730	72,731	—	72,731	—	—
Trading securities	13,389	13,389	3,878	9,511	—	—
Available-for-sale securities	80,302	80,302	—	75,482	4,820	—
Held-to-maturity securities	92,938	93,026	—	88,418	4,608	—
Advances(2)	706,005	705,736	—	705,736	—	—
Mortgage loans held for portfolio, net	60,075	58,687	—	58,568	119	—
Mortgage loans held for sale(3)	116	116	—	116	—	—
Accrued interest receivable	2,008	2,008	—	2,008	—	—
Derivative assets, net	990	990	1	1,701	—	(712)
Other assets	255	252	206	46	—	—
Liabilities						
Deposits	8,235	8,235	—	8,235	—	—
Consolidated obligations						
Discount notes	402,823	402,811	—	402,811	—	—
Bonds(4)	613,471	610,840	—	610,840	—	—
Total consolidated obligations	1,016,294	1,013,651	—	1,013,651	—	—
Mandatorily redeemable capital stock	1,078	1,078	1,078	—	—	—
Accrued interest payable	1,736	1,736	—	1,736	—	—
Derivative liabilities, net	355	355	—	2,114	—	(1,759)
Other liabilities	118	114	83	31	—	—

Financial Instruments	December 31, 2017 Carrying Value	Fair Value Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)(5)
Assets						
Cash and due from banks	$ 7,175	$ 7,175	$ 7,175	$ —	$ —	$ —
Interest-bearing deposits	5,420	5,420	2,825	2,595	—	—
Securities purchased under agreements to resell	52,568	52,568	—	52,568	—	—
Federal funds sold	65,530	65,531	—	65,531	—	—
Trading securities	7,736	7,736	1,306	6,430	—	—
Available-for-sale securities	79,560	79,560	51	73,742	5,767	—
Held-to-maturity securities	96,466	97,282	—	91,869	5,413	—
Advances(2)	731,544	731,600	—	731,600	—	—
Mortgage loans held for portfolio, net	53,827	54,325	—	54,189	136	—
Mortgage loans held for sale(3)	118	118	—	118	—	—
Accrued interest receivable	1,584	1,584	—	1,584	—	—
Derivative assets, net	991	991	—	2,013	—	(1,022)
Other assets	159	157	117	40	—	—
Liabilities						
Deposits	7,789	7,789	—	7,789	—	—
Consolidated obligations						
Discount notes(6)	391,480	391,469	—	391,469	—	—
Bonds(4)	641,601	641,476	—	641,476	—	—
Total consolidated obligations	1,033,081	1,032,945	—	1,032,945	—	—
Mandatorily redeemable capital stock	1,272	1,272	1,272	—	—	—
Accrued interest payable	1,324	1,324	—	1,324	—	—
Derivative liabilities, net	449	449	—	2,256	—	(1,807)
Other liabilities	113	111	84	27	—	—

(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 $6,316 million and $9,428 million of advances recorded under fair value option at September 30, 2018 and December 31, 2017.
(3) Represents mortgage loans held for sale recorded under fair value option, included in other assets on the Combined Statement of Condition.
(4) Includes $11,580 million and $12,917 million of consolidated bonds recorded under fair value option at September 30, 2018 and December 31, 2017.
(5) To conform with current presentation, $401 million of variation margin on cleared derivatives has been allocated to the individual derivative instruments as of December 31, 2017. Previously, this amount was included with Netting Adjustments and Cash Collateral.
(6) Includes $3,062 million of consolidated discount notes recorded under fair value option at December 31, 2017.

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-67 to F-70, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017. There have been no significant changes in these valuations methodologies and primary inputs during the three and nine months ended September 30, 2018.

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 September 30, 2018 and December 31, 2017, 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)

	September 30, 2018				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Recurring fair value measurements - Assets					
Trading securities					
Certificates of deposit	$ 85	$ —	$ 85	$ —	$ —
U.S. obligations	8,745	3,878	4,867	—	—
GSE and Tennessee Valley Authority obligations	2,778	—	2,778	—	—
Other non-MBS	271	—	271	—	—
U.S. obligations single-family MBS	13	—	13	—	—
GSE single-family MBS	82	—	82	—	—
GSE multifamily MBS	1,415	—	1,415	—	—
Total trading securities	13,389	3,878	9,511	—	—
Available-for-sale securities					
Certificates of deposit	2,050	—	2,050	—	—
U.S. obligations	3,500	—	3,500	—	—
GSE and Tennessee Valley Authority obligations	13,152	—	13,152	—	—
State or local housing agency obligations	1,146	—	1,106	40	—
Federal Family Education Loan Program ABS	3,901	—	3,901	—	—
Other non-MBS	834	—	834	—	—
U.S. obligations single-family MBS	5,316	—	5,316	—	—
U.S. obligations multifamily MBS	368	—	368	—	—
GSE single-family MBS	7,786	—	7,786	—	—
GSE multifamily MBS	37,469	—	37,469	—	—
Private-label residential MBS	4,780	—	—	4,780	—
Total available-for-sale securities	80,302	—	75,482	4,820	—
Advances(2)	6,316	—	6,316	—	—
Mortgage loans held for sale(3)	116	—	116	—	—
Derivative assets, net					
Interest-rate related	989	1	1,700	—	(712)
Mortgage delivery commitments	1	—	1	—	—
Total derivative assets, net	990	1	1,701	—	(712)
Other assets	221	206	15	—	—
Total recurring assets at fair value	$ 101,334	$ 4,085	$ 93,141	$ 4,820	$ (712)
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Bonds(4)	$ 11,580	$ —	$ 11,580	$ —	$ —
Total consolidated obligations	11,580	—	11,580	—	—
Derivative liabilities, net					
Interest-rate related	352	—	2,111	—	(1,759)
Mortgage delivery commitments	3	—	3	—	—
Total derivative liabilities, net	355	—	2,114	—	(1,759)
Total recurring liabilities at fair value	$ 11,935	$ —	$ 13,694	$ —	$ (1,759)
Non-recurring fair value measurements - Assets(5)					
Held-to-maturity securities					
Private-label residential MBS	$ 2	$ —	$ —	$ 2	
Mortgage loans held for portfolio	22	—	1	21	
Real estate owned	10	—	—	10	
Total non-recurring assets at fair value	$ 34	$ —	$ 1	$ 33	

	December 31, 2017				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)(6)
Recurring fair value measurements - Assets					
Trading securities					
Certificates of deposit	$ 585	$ —	$ 585	$ —	$ —
U.S. obligations	1,785	1,285	500	—	—
GSE and Tennessee Valley Authority obligations	3,463	—	3,463	—	—
Other non-MBS	293	21	272	—	—
U.S. obligations single-family MBS	16	—	16	—	—
GSE single-family MBS	101	—	101	—	—
GSE multifamily MBS	1,493	—	1,493	—	—
Total trading securities	7,736	1,306	6,430	—	—
Available-for-sale securities					
Certificates of deposit	900	—	900	—	—
U.S. obligations	3,765	—	3,765	—	—
GSE and Tennessee Valley Authority obligations	14,961	—	14,961	—	—
State or local housing agency obligations	1,262	—	1,225	37	—
Federal Family Education Loan Program ABS	4,214	—	4,214	—	—
Other non-MBS	922	51	871	—	—
U.S. obligations single-family MBS	5,010	—	5,010	—	—
U.S. obligations multifamily MBS	443	—	443	—	—
GSE single-family MBS	8,771	—	8,771	—	—
GSE multifamily MBS	33,582	—	33,582	—	—
Private-label residential MBS	5,730	—	—	5,730	—
Total available-for-sale securities	79,560	51	73,742	5,767	—
Advances(2)	9,428	—	9,428	—	—
Mortgage loans held for sale(3)	118	—	118	—	—
Derivative assets, net					
Interest-rate related	989	—	2,011	—	(1,022)
Mortgage delivery commitments	2	—	2	—	—
Total derivative assets, net	991	—	2,013	—	(1,022)
Other assets	130	117	13	—	—
Total recurring assets at fair value	$ 97,963	$ 1,474	$ 91,744	$ 5,767	$ (1,022)
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(7)	$ 3,062	$ —	$ 3,062	$ —	$ —
Bonds(4)	12,917	—	12,917	—	—
Total consolidated obligations	15,979	—	15,979	—	—
Derivative liabilities, net					
Interest-rate related	448	—	2,255	—	(1,807)
Mortgage delivery commitments	1	—	1	—	—
Total derivative liabilities, net	449	—	2,256	—	(1,807)
Total recurring liabilities at fair value	$ 16,428	$ —	$ 18,235	$ —	$ (1,807)
Non-recurring fair value measurements - Assets(8)					
Held-to-maturity securities					
Private-label residential MBS	$ 6	$ —	$ —	$ 6	
Mortgage loans held for portfolio	46	—	3	43	
Real estate owned	14	—	—	14	
Total non-recurring assets at fair value	$ 66	$ —	$ 3	$ 63	

(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 advances recorded under fair value option at September 30, 2018 and December 31, 2017.
(3) Represents mortgage loans held for sale recorded under fair value option, included in other assets on the Combined Statement of Condition.
(4) Represents consolidated bonds recorded under fair value option at September 30, 2018 and December 31, 2017.
(5) The fair value information presented is as of the date the fair value adjustment was recorded during the nine months ended September 30, 2018.
(6) To conform with current presentation, $401 million of variation margin on cleared derivatives has been allocated to the individual derivative instruments as of December 31, 2017. Previously, this amount was included with Netting Adjustments and Cash Collateral.
(7) Represents consolidated discount notes recorded under fair value option at December 31, 2017.
(8) The fair value information presented is as of the date the fair value adjustment was recorded during the year ended December 31, 2017.

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 and nine months ended September 30, 2018 and 2017.

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

	Three Months Ended September 30, 2018		Three Months Ended September 30, 2017	
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	$ 37	$ 5,034	$ 16	$ 6,297
Total gains (losses) included in earnings				
Interest income	—	39	—	48
Net other-than-temporary impairment losses	—	(4)	—	(6)
Total gains (losses) included in other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	—	1	(1)	1
Net amount of impairment losses reclassified to (from) non-interest income	—	1	—	6
Net change in fair value of other-than-temporarily impaired securities	—	(3)	—	85
Purchases, issuances, sales, and settlements				
Purchases	3	—	3	—
Sales	—	1	—	—
Settlements	—	(289)	—	(411)
Balance, at end of period	$ 40	$ 4,780	$ 18	$ 6,020
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	$ —	$ 23

Available-for-Sale Securities	Nine Months Ended September 30, 2018 State and Local Housing Agency Obligations	Nine Months Ended September 30, 2018 Private-Label Residential MBS	Nine Months Ended September 30, 2017 State and Local Housing Agency Obligations	Nine Months Ended September 30, 2017 Private-Label Residential MBS
Balance, at beginning of period	$ 37	$ 5,730	$ 8	$ 6,833
Total gains (losses) included in earnings				
Net gains (losses) on sale of available-for-sale securities	—	32	—	—
Interest income	—	124	—	141
Net other-than-temporary impairment losses	—	(11)	—	(18)
Total gains (losses) included in other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	—	(1)	(1)	4
Net amount of impairment losses reclassified to (from) non-interest income	—	(8)	—	10
Net change in fair value of other-than-temporarily impaired securities	—	6	—	211
Purchases, issuances, sales, and settlements				
Purchases	3	—	11	—
Sales	—	(236)	—	—
Settlements	—	(869)	—	(1,161)
Transfers from held-to-maturity to available-for-sale securities	—	13	—	—
Balance, at end of period	$ 40	$ 4,780	$ 18	$ 6,020
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	$ —	$ 64	$ —	$ 72

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, Des Moines, 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 and nine months ended September 30, 2018 and 2017.

Table 15.4 - Fair Value Option - Financial Assets and Liabilities
(dollars in millions)

	Three Months Ended September 30,		Nine Months Ended September 30,	
Net Gains (Losses) from Changes in Fair Value Recognized in Earnings	2018	2017	2018	2017
Advances	$ (14)	$ (7)	$ (89)	$ 2
Mortgage loans held for sale(1)	(2)	(1)	(6)	(2)
Consolidated discount notes	—	(1)	—	—
Consolidated bonds	(2)	(3)	22	(20)
Total net gains (losses)	$ (18)	$ (12)	$ (73)	$ (20)

(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 and nine months ended September 30, 2018 and 2017. 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 September 30, 2018 and December 31, 2017.

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

	September 30, 2018			December 31, 2017		
	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)	$ 6,316	$ 6,420	$ (104)	$ 9,428	$ 9,448	$ (20)
Mortgage loans held for sale(2)	116	114	2	118	116	2
Consolidated discount notes	—	—	—	3,062	3,059	3
Consolidated bonds	11,580	11,663	(83)	12,917	12,980	(63)

(1) At September 30, 2018 and December 31, 2017, 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)

	September 30, 2018			December 31, 2017
Notional amount	Expire Within One Year	Expire After One Year	Total	Total
Standby letters of credit outstanding(1)	$ 128,741	$ 26,785	$ 155,526	$ 149,435
Commitments to fund additional advances	3,100	159	3,259	1,614
Unsettled consolidated discount notes, principal amount	2,802	—	2,802	1,009
Unused lines of credit - advances	2,387	—	2,387	2,371
Commitments for standby bond purchases	408	1,961	2,369	2,270
Unsettled consolidated bonds, principal amount	2,027	—	2,027	1,873
Commitments to purchase mortgage loans	1,052	—	1,052	650
Other(2)	226	—	226	292

(1) Excludes approved commitments to issue future standby letters of credit of $131 million and $53 million at September 30, 2018 and December 31, 2017.
(2) Consists primarily of commitments related to MPF products.

Standby Letters of Credit. An FHLBank issues standby letters of credit on behalf of its members to support certain obligations of the members 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. Standby letters of credit have original expiration periods of up to 20 years, currently expiring no later than 2037. The carrying value of guarantees related to standby letters of credit are recorded in other liabilities and were $120 million and $159 million at September 30, 2018 and December 31, 2017.

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 2024, although some are renewable at the option of the affected FHLBank. At September 30, 2018 and December 31, 2017, the FHLBanks had standby bond-purchase commitments with 13 and 14 state housing authorities. During the nine months ended September 30, 2018 and 2017, 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 October 1, 2018, 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.

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FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CONDITION
SEPTEMBER 30, 2018
(Unaudited)

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 772	$ (2)	$ 46	$ 87
Investments	318,285	(121)	19,322	42,177
Advances	706,005	(1)	40,928	100,166
Mortgage loans held for portfolio, net	60,075	1	4,192	2,910
Other assets	4,118	1	206	517
Total assets	$ 1,089,255	$ (122)	$ 64,694	$ 145,857
Liabilities				
Deposits	$ 8,235	$ (13)	$ 485	$ 936
Consolidated obligations				
Discount notes	402,823	—	33,432	50,821
Bonds	613,471	(108)	26,741	85,910
Total consolidated obligations	1,016,294	(108)	60,173	136,731
Mandatorily redeemable capital stock	1,078	(2)	32	7
Other liabilities	6,064	1	484	601
Total liabilities	1,031,671	(122)	61,174	138,275
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	37,232	(2)	2,477	5,856
Class A putable ($100 par value) issued and outstanding	183	—	—	—
Total capital stock	37,415	(2)	2,477	5,856
Retained earnings				
Unrestricted	15,202	2	1,084	1,112
Restricted	4,106	—	302	567
Total retained earnings	19,308	2	1,386	1,679
Accumulated other comprehensive income (loss)	861	—	(343)	47
Total capital	57,584	—	3,520	7,582
Total liabilities and capital	$ 1,089,255	$ (122)	$ 64,694	$ 145,857

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 159	$ 64	$ 13	$ 116	$ 44	$ 155	$ 55	$ 20	$ 15
20,321	44,680	31,580	21,181	29,841	35,139	29,434	14,439	30,292
68,301	109,746	57,771	33,567	54,667	100,787	42,242	28,472	69,359
4,332	376	10,181	11,294	6,439	7,549	1,795	8,114	2,892
369	725	251	314	419	465	184	252	415
$ 93,482	$ 155,591	$ 99,796	$ 66,472	$ 91,410	$ 144,095	$ 73,710	$ 51,297	$ 102,973
$ 502	$ 965	$ 1,774	$ 484	$ 581	$ 835	$ 1,016	$ 446	$ 224
27,756	62,632	45,313	22,650	37,674	42,101	33,997	22,417	24,030
59,837	83,761	46,913	39,564	46,232	92,998	34,382	25,836	71,405
87,593	146,393	92,226	62,214	83,906	135,099	68,379	48,253	95,435
24	2	22	164	313	277	7	5	227
466	479	539	552	1,286	579	377	203	497
88,585	147,839	94,561	63,414	86,086	136,790	69,779	48,907	96,383
3,547	5,557	4,242	1,901	1,718	5,163	2,609	1,281	2,883
—	—	—	—	—	—	—	183	—
3,547	5,557	4,242	1,901	1,718	5,163	2,609	1,464	2,883
919	1,658	633	846	2,989	1,612	905	705	2,737
336	446	375	215	499	407	137	189	633
1,255	2,104	1,008	1,061	3,488	2,019	1,042	894	3,370
95	91	(15)	96	118	123	280	32	337
4,897	7,752	5,235	3,058	5,324	7,305	3,931	2,390	6,590
$ 93,482	$ 155,591	$ 99,796	$ 66,472	$ 91,410	$ 144,095	$ 73,710	$ 51,297	$ 102,973

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CONDITION
DECEMBER 31, 2017
(Unaudited)

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 7,175	$ —	$ 262	$ 127
Investments	307,280	(139)	17,942	33,069
Advances	731,544	—	37,566	122,448
Mortgage loans held for portfolio, net	53,827	1	4,004	2,897
Other assets	3,625	(604)	588	377
Total assets	$ 1,103,451	$ (742)	$ 60,362	$ 158,918
Liabilities				
Deposits	$ 7,789	$ (32)	$ 477	$ 1,196
Consolidated obligations				
Discount notes	391,480	(1)	27,721	49,614
Bonds	641,601	(116)	28,345	99,288
Total consolidated obligations	1,033,081	(117)	56,066	148,902
Mandatorily redeemable capital stock	1,272	—	36	20
Other liabilities	4,829	(595)	518	559
Total liabilities	1,046,971	(744)	57,097	150,677
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	37,422	(1)	2,284	6,750
Class A putable ($100 par value) issued and outstanding	235	—	—	—
Total capital stock	37,657	(1)	2,284	6,750
Retained earnings				
Unrestricted	14,549	3	1,041	1,067
Restricted	3,550	1	267	479
Total retained earnings	18,099	4	1,308	1,546
Accumulated other comprehensive income (loss)	724	(1)	(327)	(55)
Total capital	56,480	2	3,265	8,241
Total liabilities and capital	$ 1,103,451	$ (742)	$ 60,362	$ 158,918

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 3,415	$ 2,357	$ 27	$ 55	$ 42	$ 503	$ 88	$ 268	$ 31
17,756	40,378	27,058	17,572	30,683	34,452	30,941	13,998	43,570
74,280	102,440	69,918	34,055	48,085	102,613	36,461	26,296	77,382
3,923	435	9,681	10,356	5,193	7,096	878	7,287	2,076
289	956	211	311	352	435	156	228	326
$ 99,663	$ 146,566	$ 106,895	$ 62,349	$ 84,355	$ 145,099	$ 68,524	$ 48,077	$ 123,385
$ 538	$ 1,177	$ 650	$ 565	$ 524	$ 1,107	$ 844	$ 462	$ 281
36,193	50,139	46,211	20,358	41,191	36,682	32,511	20,421	30,440
57,534	87,523	54,163	37,896	37,121	98,893	31,377	24,514	85,063
93,727	137,662	100,374	58,254	78,312	135,575	63,888	44,935	115,503
5	1	30	164	311	385	6	5	309
465	459	676	420	356	1,011	306	168	486
94,735	139,299	101,730	59,403	79,503	138,078	65,044	45,570	116,579
3,659	5,154	4,241	1,858	1,443	5,068	2,318	1,405	3,243
—	—	—	—	—	—	—	235	—
3,659	5,154	4,241	1,858	1,443	5,068	2,318	1,640	3,243
876	1,623	617	793	2,845	1,504	833	677	2,670
282	380	323	183	452	335	109	164	575
1,158	2,003	940	976	3,297	1,839	942	841	3,245
111	110	(16)	112	112	114	220	26	318
4,928	7,267	5,165	2,946	4,852	7,021	3,480	2,507	6,806
$ 99,663	$ 146,566	$ 106,895	$ 62,349	$ 84,355	$ 145,099	$ 68,524	$ 48,077	$ 123,385

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF INCOME
THREE MONTHS ENDED SEPTEMBER 30, 2018 and 2017
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
September 30, 2018				
Interest income				
Advances	$ 4,190	$ 2	$ 226	$ 678
Investments	2,026	(3)	109	263
Mortgage loans held for portfolio	504	(2)	34	24
Other interest income	1	1	—	—
Total interest income	6,721	(2)	369	965
Interest expense				
Consolidated obligations - Discount notes	1,950	(1)	148	256
Consolidated obligations - Bonds	3,380	(1)	142	492
Other interest expense	51	(1)	2	5
Total interest expense	5,381	(3)	292	753
Net interest income	1,340	1	77	212
Provision (reversal) for credit losses	—	1	—	—
Net interest income after provision (reversal) for credit losses	1,340	—	77	212
Non-interest income (loss)	40	(8)	16	—
Non-interest expense	331	(8)	21	37
Affordable Housing Program assessments	107	—	7	18
Net income	$ 942	$ —	$ 65	$ 157
September 30, 2017				
Interest income				
Advances	$ 2,591	$ (2)	$ 137	$ 429
Investments	1,418	2	78	162
Mortgage loans held for portfolio	434	(2)	32	24
Other interest income	3	3	—	—
Total interest income	4,446	1	247	615
Interest expense				
Consolidated obligations - Discount notes	1,120	(3)	65	128
Consolidated obligations - Bonds	2,052	3	109	301
Other interest expense	38	2	1	6
Total interest expense	3,210	2	175	435
Net interest income	1,236	(1)	72	180
Provision (reversal) for credit losses	(1)	(1)	—	—
Net interest income after provision (reversal) for credit losses	1,237	—	72	180
Non-interest income (loss)	28	(6)	—	1
Non-interest expense	314	(3)	22	33
Affordable Housing Program assessments	97	(1)	5	15
Net income	$ 854	$ (2)	$ 45	$ 133

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 432	$ 585	$ 342	$ 197	$ 312	$ 633	$ 236	$ 158	$ 389
123	283	175	133	229	216	180	93	225
38	5	81	91	62	64	15	66	26
—	—	—	—	—	—	—	—	—
593	873	598	421	603	913	431	317	640
120	290	209	114	208	212	169	108	117
350	435	256	229	263	535	177	138	364
3	5	3	5	6	10	4	3	6
473	730	468	348	477	757	350	249	487
120	143	130	73	126	156	81	68	153
—	—	—	—	(1)	—	—	—	—
120	143	130	73	127	156	81	68	153
12	19	(9)	(7)	6	7	(2)	(1)	7
22	44	20	23	47	36	23	20	46
11	11	10	4	9	14	6	5	12
$ 99	$ 107	$ 91	$ 39	$ 77	$ 113	$ 50	$ 42	$ 102
$ 270	$ 306	$ 252	$ 112	$ 157	$ 451	$ 124	$ 114	$ 241
90	184	111	81	201	170	103	58	178
32	7	75	80	53	59	4	55	15
—	—	—	—	—	—	—	—	—
392	497	438	273	411	680	231	227	434
86	130	125	55	148	163	78	70	75
196	241	201	147	136	338	88	87	205
1	3	2	2	4	5	3	1	8
283	374	328	204	288	506	169	158	288
109	123	110	69	123	174	62	69	146
—	—	—	—	(1)	1	—	—	—
109	123	110	69	124	173	62	69	146
6	18	(3)	(4)	5	4	6	5	(4)
21	36	21	19	43	30	23	18	51
10	10	8	5	9	15	5	6	10
$ 84	$ 95	$ 78	$ 41	$ 77	$ 132	$ 40	$ 50	$ 81

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF INCOME
NINE MONTHS ENDED SEPTEMBER 30, 2018 and 2017
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
September 30, 2018				
Interest income				
Advances	$ 11,504	$ 1	$ 618	$ 1,854
Investments	5,530	(4)	305	697
Mortgage loans held for portfolio	1,447	(2)	101	73
Other interest income	4	2	1	—
Total interest income	18,485	(3)	1,025	2,624
Interest expense				
Consolidated obligations - Discount notes	5,241	—	386	689
Consolidated obligations - Bonds	9,168	1	398	1,308
Other interest expense	139	(3)	5	15
Total interest expense	14,548	(2)	789	2,012
Net interest income	3,937	(1)	236	612
Provision (reversal) for credit losses	1	(1)	—	—
Net interest income after provision (reversal) for credit losses	3,936	—	236	612
Non-interest income (loss)	103	(23)	19	(19)
Non-interest expense	954	(20)	63	106
Affordable Housing Program assessments	314	—	19	49
Net income	$ 2,771	$ (3)	$ 173	$ 438
September 30, 2017				
Interest income				
Advances	$ 6,313	$ (1)	$ 371	$ 1,107
Investments	3,783	(4)	205	418
Mortgage loans held for portfolio	1,269	—	93	70
Other interest income	5	2	1	—
Total interest income	11,370	(3)	670	1,595
Interest expense				
Consolidated obligations - Discount notes	2,597	(2)	158	307
Consolidated obligations - Bonds	5,425	6	311	746
Other interest expense	103	2	3	12
Total interest expense	8,125	6	472	1,065
Net interest income	3,245	(9)	198	530
Provision (reversal) for credit losses	—	(1)	—	—
Net interest income after provision (reversal) for credit losses	3,245	(8)	198	530
Non-interest income (loss)	557	(14)	1	6
Non-interest expense	1,006	(14)	63	165
Affordable Housing Program assessments	286	1	14	37
Net income	$ 2,510	$ (9)	$ 122	$ 334

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 1,162	$ 1,577	$ 1,010	$ 519	$ 811	$ 1,761	$ 593	$ 460	$ 1,138
329	772	470	341	672	581	460	258	649
110	16	236	260	177	185	34	187	70
—	—	—	—	—	—	—	1	—
1,601	2,365	1,716	1,120	1,660	2,527	1,087	906	1,857
318	796	605	274	596	506	384	314	373
930	1,147	725	618	665	1,517	467	382	1,010
7	13	9	15	17	24	11	7	19
1,255	1,956	1,339	907	1,278	2,047	862	703	1,402
346	409	377	213	382	480	225	203	455
3	—	—	—	(1)	—	—	—	—
343	409	377	213	383	480	225	203	455
22	67	(25)	29	15	23	1	(10)	4
66	112	64	68	135	101	69	52	138
30	36	29	18	27	42	16	14	34
$ 269	$ 328	$ 259	$ 156	$ 236	$ 360	$ 141	$ 127	$ 287
$ 713	$ 476	$ 649	$ 281	$ 386	$ 1,165	$ 296	$ 283	$ 587
242	489	296	211	575	445	260	153	493
95	20	221	234	160	176	8	157	35
—	—	—	1	—	—	—	1	—
1,050	985	1,166	727	1,121	1,786	564	594	1,115
178	301	261	122	363	396	154	163	196
541	642	581	404	394	877	227	228	468
3	7	5	8	11	16	7	2	27
722	950	847	534	768	1,289	388	393	691
328	35	319	193	353	497	176	201	424
—	—	—	—	—	1	—	—	—
328	35	319	193	353	496	176	201	424
26	349	(4)	(11)	31	45	22	14	92
66	100	60	59	129	93	66	49	170
29	28	25	13	26	46	13	17	37
$ 259	$ 256	$ 230	$ 110	$ 229	$ 402	$ 119	$ 149	$ 309

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF COMPREHENSIVE INCOME
THREE MONTHS ENDED SEPTEMBER 30, 2018 AND 2017
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
September 30, 2018				
Net income	$ 942	$ —	$ 65	$ 157
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	(27)	(1)	(9)	—
Net non-credit portion of other-than-temporary impairment gains (losses) on available-for-sale securities	(2)	(1)	—	—
Net non-credit portion of other-than-temporary impairment gains (losses) on held-to-maturity securities	21	1	7	1
Net unrealized gains (losses) relating to hedging activities	61	—	3	25
Pension and postretirement benefits	2	—	—	—
Total other comprehensive income (loss)	55	(1)	1	26
Comprehensive income	$ 997	$ (1)	$ 66	$ 183
September 30, 2017				
Net income	$ 854	$ (2)	$ 45	$ 133
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	23	—	—	1
Net non-credit portion of other-than-temporary impairment gains (losses) on available-for-sale securities	91	(1)	—	—
Net non-credit portion of other-than-temporary impairment gains (losses) on held-to-maturity securities	20	1	8	1
Net unrealized gains (losses) relating to hedging activities	48	(1)	1	6
Pension and postretirement benefits	4	—	1	—
Total other comprehensive income (loss)	186	(1)	10	8
Comprehensive income	$ 1,040	$ (3)	$ 55	$ 141

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 99	$ 107	$ 91	$ 39	$ 77	$ 113	$ 50	$ 42	$ 102
(7)	—	—	10	(32)	(19)	27	3	1
2	(8)	—	—	—	—	—	—	5
—	—	—	—	7	—	—	4	1
—	—	—	—	25	—	8	—	—
—	4	1	1	(4)	—	—	—	—
(5)	(4)	1	11	(4)	(19)	35	7	7
$ 94	$ 103	$ 92	$ 50	$ 73	$ 94	$ 85	$ 49	$ 109
$ 84	$ 95	$ 78	$ 41	$ 77	$ 132	$ 40	$ 50	$ 81
—	—	—	5	(24)	12	27	2	—
1	9	—	1	—	—	—	—	81
—	—	—	—	8	—	1	1	—
—	—	—	—	42	—	—	—	—
—	1	—	—	3	(1)	—	—	—
1	10	—	6	29	11	28	3	81
$ 85	$ 105	$ 78	$ 47	$ 106	$ 143	$ 68	$ 53	$ 162

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF COMPREHENSIVE INCOME
NINE MONTHS ENDED SEPTEMBER 30, 2018 AND 2017
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
September 30, 2018				
Net income	$ 2,771	$ (3)	$ 173	$ 438
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	(139)	(1)	(55)	—
Net non-credit portion of other-than-temporary impairment gains (losses) on available-for-sale securities	(34)	—	—	—
Net non-credit portion of other-than-temporary impairment gains (losses) on held-to-maturity securities	56	—	23	3
Net unrealized gains (losses) relating to hedging activities	261	(1)	17	103
Pension and postretirement benefits	(2)	3	(1)	1
Total other comprehensive income (loss)	142	1	(16)	107
Comprehensive income	$ 2,913	$ (2)	$ 157	$ 545
September 30, 2017				
Net income	$ 2,510	$ (9)	$ 122	$ 334
Other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	379	(1)	43	6
Net non-credit portion of other-than-temporary impairment gains (losses) on available-for-sale securities	221	(2)	—	—
Net non-credit portion of other-than-temporary impairment gains (losses) on held-to-maturity securities	66	—	26	8
Net unrealized gains (losses) relating to hedging activities	112	(2)	4	3
Pension and postretirement benefits	7	(1)	1	1
Total other comprehensive income (loss)	785	(6)	74	18
Comprehensive income	$ 3,295	$ (15)	$ 196	$ 352

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 269	$ 328	$ 259	$ 156	$ 236	$ 360	$ 141	$ 127	$ 287
(21)	—	—	19	(124)	9	31	2	1
5	(25)	—	(29)	—	—	—	—	15
—	—	—	—	22	—	2	4	2
—	—	—	—	115	—	27	—	—
—	6	1	(6)	(7)	—	—	—	1
(16)	(19)	1	(16)	6	9	60	6	19
$ 253	$ 309	$ 260	$ 140	$ 242	$ 369	$ 201	$ 133	$ 306
$ 259	$ 256	$ 230	$ 110	$ 229	$ 402	$ 119	$ 149	$ 309
63	—	—	43	(5)	117	99	14	—
8	17	—	3	—	—	—	—	195
—	—	—	—	25	—	3	2	2
—	—	—	—	111	—	(4)	—	—
—	2	1	1	1	1	—	—	—
71	19	1	47	132	118	98	16	197
$ 330	$ 275	$ 231	$ 157	$ 361	$ 520	$ 217	$ 165	$ 506

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CAPITAL
NINE MONTHS ENDED SEPTEMBER 30, 2018 AND 2017
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Balance, December 31, 2016	$ 52,459	$ 18	$ 3,245	$ 7,624
Comprehensive income (loss)	3,295	(15)	196	352
Proceeds from issuance of capital stock	25,389	2	731	4,264
Repurchases/redemptions of capital stock	(23,703)	1	(861)	(4,251)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(1,002)	(1)	(9)	(3)
Dividends of capital stock	89	(1)	—	—
Dividends				
Cash	(1,122)	(1)	(74)	(248)
Stock	(89)	1	—	—
Balance, September 30, 2017	$ 55,316	$ 4	$ 3,228	$ 7,738
Balance, December 31, 2017	$ 56,480	$ 2	$ 3,265	$ 8,241
Comprehensive income (loss)	2,913	(2)	157	545
Proceeds from issuance of capital stock	31,847	1	1,311	5,801
Repurchases/redemptions of capital stock	(31,136)	(2)	(1,118)	(6,693)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(1,066)	1	—	(2)
Dividends of capital stock	113	(1)	—	—
Dividends				
Cash	(1,454)	—	(95)	(310)
Stock	(113)	1	—	—
Balance, September 30, 2018	$ 57,584	$ —	$ 3,520	$ 7,582

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 4,794	$ 6,951	$ 4,978	$ 2,436	$ 4,695	$ 7,401	$ 2,817	$ 1,963	$ 5,537
330	275	231	157	361	520	217	165	506
3,225	6,949	342	286	2,172	4,364	1,005	1,327	722
(3,282)	(6,839)	—	—	(2,320)	(4,617)	(730)	(529)	(275)
(1)	(24)	(270)	—	(6)	(40)	(20)	(626)	(2)
—	—	—	—	—	—	22	68	—
(126)	(176)	(149)	(49)	(30)	(130)	—	—	(139)
—	—	—	—	—	—	(22)	(68)	—
$ 4,940	$ 7,136	$ 5,132	$ 2,830	$ 4,872	$ 7,498	$ 3,289	$ 2,300	$ 6,349
$ 4,928	$ 7,267	$ 5,165	$ 2,946	$ 4,852	$ 7,021	$ 3,480	$ 2,507	$ 6,806
253	309	260	140	242	369	201	133	306
4,070	8,399	303	70	2,265	5,837	1,515	1,295	980
(4,139)	(7,960)	(297)	—	(1,988)	(5,693)	(1,258)	(650)	(1,338)
(43)	(36)	(5)	(27)	(2)	(49)	(7)	(894)	(2)
—	—	—	—	—	—	41	73	—
(172)	(227)	(191)	(71)	(45)	(180)	—	(1)	(162)
—	—	—	—	—	—	(41)	(73)	—
$ 4,897	$ 7,752	$ 5,235	$ 3,058	$ 5,324	$ 7,305	$ 3,931	$ 2,390	$ 6,590

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CASH FLOWS
NINE MONTHS ENDED SEPTEMBER 30, 2018
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Operating activities				
Net cash provided by (used in) operating activities	$ 4,903	$ 4	$ 248	$ 720
Investing activities				
Net change/net proceeds and payments in				
Loans to FHLBanks	—	(600)	400	—
Premises, software, and equipment	(70)	—	(1)	(19)
Investments	(11,642)	(19)	(1,514)	(9,162)
Advances	23,517	(1)	(3,412)	21,917
Mortgage loans held for portfolio	(6,374)	(2)	(196)	(18)
Proceeds from sales of foreclosed assets	43	—	3	2
Other investing activities	(5)	(1)	—	—
Net cash provided by (used in) investing activities	5,469	(623)	(4,720)	12,720
Financing activities				
Net change in deposits and pass-through reserves, and other financing activities	973	19	9	(196)
Net change in loans from FHLBanks	—	600	—	—
Net proceeds (payments) on derivative contracts with financing element	74	—	—	(6)
Net proceeds from issuance of consolidated obligations				
Discount notes	5,516,750	1	149,555	928,411
Bonds	364,502	(1)	8,128	82,507
Payments for maturing and retiring consolidated obligations				
Discount notes	(5,505,655)	(2)	(143,869)	(927,238)
Bonds	(391,416)	2	(9,661)	(95,741)
Proceeds from issuance of capital stock	31,847	1	1,311	5,801
Payments for repurchases/redemptions of capital stock	(31,136)	(2)	(1,118)	(6,693)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(1,260)	(1)	(4)	(15)
Cash dividends paid	(1,454)	—	(95)	(310)
Net cash provided by (used in) financing activities	(16,775)	617	4,256	(13,480)
Net increase (decrease) in cash and due from banks	(6,403)	(2)	(216)	(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	$ 772	$ (2)	$ 46	$ 87

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 282	$ 746	$ 306	$ 426	$ 447	$ 492	$ 600	$ 229	$ 403
—	200	—	—	—	—	—	—	—
(2)	(3)	(2)	(4)	(4)	(24)	(4)	(6)	(1)
(2,552)	(4,209)	(4,689)	(3,793)	1,518	(685)	866	(556)	13,153
5,776	(7,864)	12,093	333	(6,743)	1,645	(5,842)	(2,258)	7,873
(425)	58	(532)	(964)	(1,253)	(469)	(918)	(846)	(809)
7	2	—	—	18	6	—	4	1
—	—	—	—	—	—	—	(4)	—
2,804	(11,816)	6,870	(4,428)	(6,464)	473	(5,898)	(3,666)	20,217
(35)	(236)	1,145	39	57	(180)	284	97	(30)
—	—	—	—	—	(600)	—	—	—
—	(3)	(1)	(2)	(13)	(1)	104	(4)	—
305,180	786,073	424,259	254,190	1,469,628	130,226	195,559	765,464	108,204
43,238	55,082	19,550	13,075	32,132	31,217	17,437	8,791	53,346
(313,612)	(773,652)	(425,171)	(251,909)	(1,473,155)	(124,838)	(194,129)	(763,468)	(114,612)
(40,848)	(58,664)	(26,774)	(11,302)	(22,862)	(36,944)	(14,241)	(7,441)	(66,940)
4,070	8,399	303	70	2,265	5,837	1,515	1,295	980
(4,139)	(7,960)	(297)	—	(1,988)	(5,693)	(1,258)	(650)	(1,338)
(24)	(35)	(13)	(27)	—	(157)	(6)	(894)	(84)
(172)	(227)	(191)	(71)	(45)	(180)	—	(1)	(162)
(6,342)	8,777	(7,190)	4,063	6,019	(1,313)	5,265	3,189	(20,636)
(3,256)	(2,293)	(14)	61	2	(348)	(33)	(248)	(16)
3,415	2,357	27	55	42	503	88	268	31
$ 159	$ 64	$ 13	$ 116	$ 44	$ 155	$ 55	$ 20	$ 15

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CASH FLOWS
NINE MONTHS ENDED SEPTEMBER 30, 2017
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Operating activities				
Net cash provided by (used in) operating activities	$ 2,947	$ (4)	$ 132	$ 342
Investing activities				
Net change/net proceeds and payment in				
Loans to FHLBanks	—	(1,095)	—	255
Premises, software, and equipment	(96)	—	(2)	(19)
Investments	(25,572)	(105)	(1,077)	(880)
Advances	(14,824)	—	1,606	(3,894)
Mortgage loans held for portfolio	(3,842)	—	(256)	(140)
Proceeds from sales of foreclosed assets	54	1	3	4
Other investing activities	(15)	—	—	—
Net cash provided by (used in) investing activities	(44,295)	(1,199)	274	(4,674)
Financing activities				
Net change in deposits and pass-through reserves, and other financing activities	(233)	(3)	11	193
Net change in loans from FHLBanks	—	1,095	—	—
Net proceeds (payments) on derivative contracts with financing element	(173)	(1)	(4)	(15)
Net proceeds from issuance of consolidated obligations				
Discount notes	4,634,721	1	125,580	850,323
Bonds	351,936	—	7,822	69,737
Payments for maturing and retiring consolidated obligations				
Discount notes	(4,637,459)	—	(127,601)	(861,973)
Bonds	(310,142)	107	(6,492)	(53,620)
Proceeds from issuance of capital stock	25,389	2	731	4,264
Payments for repurchases/redemptions of capital stock	(23,703)	1	(861)	(4,251)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(1,363)	1	(6)	(14)
Cash dividends paid	(1,122)	(1)	(74)	(248)
Net cash provided by (used in) financing activities	37,851	1,202	(894)	4,396
Net increase (decrease) in cash and due from banks	(3,497)	(1)	(488)	64
Cash and due from banks at beginning of the period	7,441	(1)	520	152
Cash and due from banks at end of the period	$ 3,944	$ (2)	$ 32	$ 216

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 245	$ 301	$ 335	$ 201	$ 337	$ 377	$ 232	$ 176	$ 273
—	(250)	—	—	—	200	290	600	—
(1)	(3)	(1)	(3)	(7)	(25)	(3)	(21)	(11)
(2,163)	(4,758)	(2,568)	(3,250)	(3,857)	1,965	(3,949)	(131)	(4,799)
2,569	(1,170)	1,932	(4,873)	(5,079)	14,032	(3,797)	(4,357)	(11,793)
(387)	60	(384)	(726)	(60)	(135)	(451)	(432)	(931)
6	2	—	—	27	7	—	2	2
—	—	—	—	—	—	—	(15)	—
24	(6,119)	(1,021)	(8,852)	(8,976)	16,044	(7,910)	(4,354)	(17,532)
68	(38)	(160)	(41)	109	(171)	(138)	(25)	(38)
—	—	—	—	—	—	250	—	(1,345)
—	(25)	(4)	(16)	(22)	(3)	(66)	(17)	—
174,665	609,559	376,964	161,661	1,080,879	162,882	267,182	701,801	123,224
33,095	52,403	16,838	17,978	13,947	53,241	16,760	14,266	55,849
(164,334)	(601,181)	(372,155)	(156,103)	(1,071,386)	(190,878)	(262,710)	(702,311)	(126,827)
(45,098)	(55,489)	(20,718)	(15,538)	(15,024)	(40,832)	(13,739)	(9,909)	(33,790)
3,225	6,949	342	286	2,172	4,364	1,005	1,327	722
(3,282)	(6,839)	—	—	(2,320)	(4,617)	(730)	(529)	(275)
(1)	(22)	(273)	(4)	(5)	(282)	(16)	(624)	(117)
(126)	(176)	(149)	(49)	(30)	(130)	—	—	(139)
(1,788)	5,141	685	8,174	8,320	(16,426)	7,798	3,979	17,264
(1,519)	(677)	(1)	(477)	(319)	(5)	120	(199)	5
3,588	1,815	9	547	351	223	28	207	2
$ 2,069	$ 1,138	$ 8	$ 70	$ 32	$ 218	$ 148	$ 8	$ 7

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SELECTED FINANCIAL DATA

(dollars in millions)	2018 September 30,	2018 June 30,	2018 March 31,	2017 December 31,	2017 September 30,
Selected Statement of Condition Data at					
Investments(1)	$ 318,285	$ 332,710	$ 329,412	$ 307,280	$ 318,349
Advances	706,005	734,457	697,066	731,544	719,387
Mortgage loans held for portfolio	60,090	57,225	54,915	53,843	52,226
Allowance for credit losses on mortgage loans	(15)	(16)	(17)	(16)	(16)
Total assets	1,089,255	1,130,235	1,087,860	1,103,451	1,097,509
Consolidated obligations					
Discount notes	402,823	412,839	389,052	391,480	407,311
Bonds	613,471	644,421	627,837	641,601	620,706
Total consolidated obligations	1,016,294	1,057,260	1,016,889	1,033,081	1,028,017
Mandatorily redeemable capital stock	1,078	1,206	1,237	1,272	1,347
Capital					
Total capital stock(2)	37,415	38,670	37,285	37,657	37,007
Retained earnings	19,308	18,914	18,463	18,099	17,681
Accumulated other comprehensive income (loss)	861	806	890	724	628
Total capital	57,584	58,390	56,638	56,480	55,316
Selected Statement of Income Data for the quarter ended					
Net interest income	$ 1,340	$ 1,332	$ 1,265	$ 1,236	$ 1,236
Provision (reversal) for credit losses	—	(1)	2	—	(1)
Net interest income after provision (reversal) for credit losses	1,340	1,333	1,263	1,236	1,237
Non-interest income (loss)	40	59	4	58	28
Non-interest expense	331	311	312	330	314
Affordable Housing Program Assessments	107	110	97	98	97
Net income	$ 942	$ 971	$ 858	$ 866	$ 854
Selected Other Data for the quarter ended					
Cash and stock dividends	$ 548	$ 520	$ 499	$ 448	$ 411
Dividend payout ratio(3)	58.17%	53.55%	58.16%	51.73%	48.13%
Return on average equity(4)(5)	6.52%	6.73%	6.01%	6.23%	6.19%
Return on average assets	0.34%	0.35%	0.30%	0.32%	0.31%
Average equity to average assets(5)	5.24%	5.20%	5.06%	5.07%	4.99%
Net interest margin(6)	0.49%	0.48%	0.45%	0.45%	0.45%
Selected Other Data at					
GAAP capital-to-asset ratio	5.29%	5.17%	5.21%	5.12%	5.04%
Regulatory capital-to-assets ratio(7)	5.31%	5.20%	5.24%	5.17%	5.11%

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(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 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, 2018, 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, 2017, included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017.

Each FHLBank's Annual Report on SEC Form 10-K and Quarterly Report on SEC Form 10-Q contains, 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 accounting principles generally accepted in the United States of America (GAAP). (See *Note 1 - Summary of Significant Accounting Policies* to the accompanying combined financial statements and *Interbank Transfers of Consolidated Bonds and Their Effect on Combined Net Income* 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, 2017. 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, debt underwriters, or investors in the consolidated obligations of the FHLBanks, 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, and regulatory oversight;

- 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 FHLBank debt underwriters, 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 a nationally recognized statistical 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 in which the FHLBanks, their members, counterparties, debt underwriters, or investors operate.

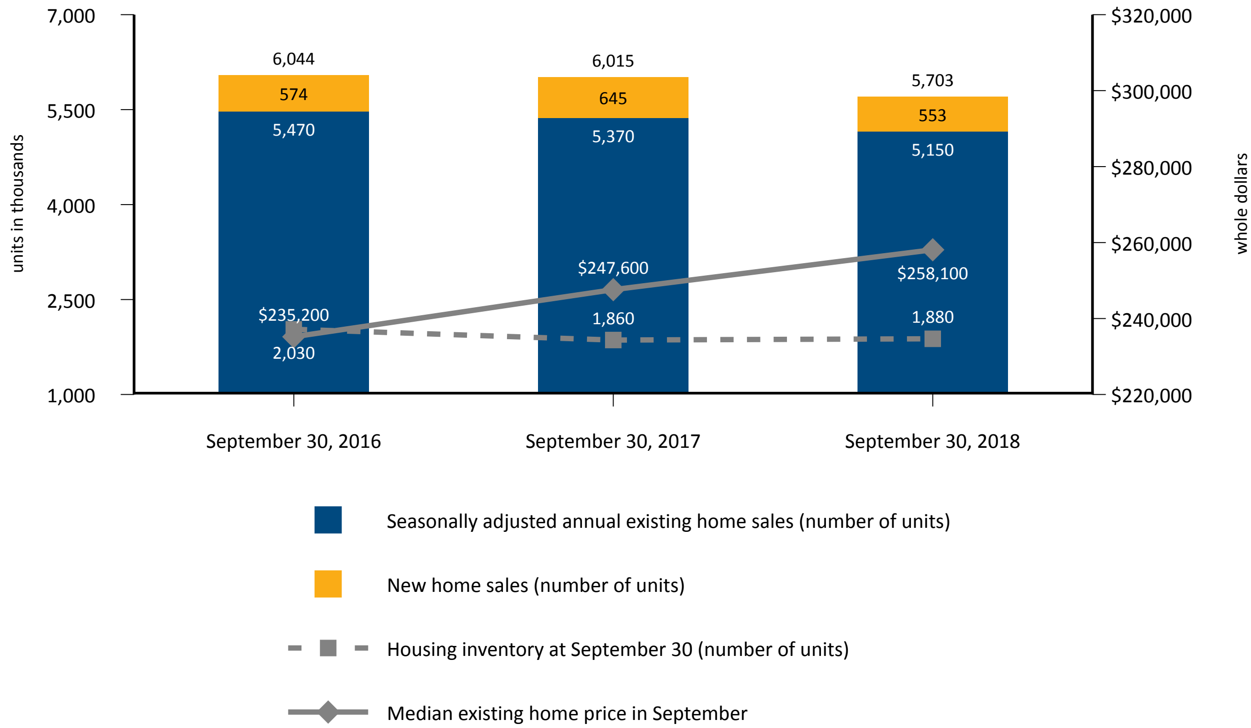
Economy and Financial Markets. The FHLBanks' overall results of operations are influenced by the economy and financial markets, and, in particular, by FHLBank members' demand for advances and the FHLBanks' ability to maintain sufficient access to diverse sources of funding at relatively favorable costs. The FHLBanks' flexibility in utilizing various funding tools, in combination with a diverse investor base and their status as GSEs, have helped enable reliable market access and demand for consolidated obligations throughout fluctuating market environments and regulatory changes affecting debt underwriters and investors. The FHLBanks continued to meet their funding needs in response to demand for advances during the three and nine months ended September 30, 2018.

Economic and market data received by the Federal Reserve, prior to the Federal Open Market Committee meeting in September 2018, indicated that the U.S. labor market continued to strengthen and that U.S. economic activity continued to rise. On a 12-month basis, inflation was over two percent and the Federal Open Market Committee has stated that it expects inflation to stabilize around two percent over the medium term.

The Bureau of Labor Statistics reported that the U.S. unemployment rate was 3.7% in September 2018 compared to 4.1% in December 2017. U.S. real gross domestic product increased at an annual rate of 3.5% in the third quarter of 2018, according to the advance estimate reported by the Bureau of Economic Analysis, compared to an increase at an annual rate of 2.9% in the fourth quarter of 2017.

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. U.S. home sales declined in the third quarter of 2018 compared to the third quarter of 2017, amid rising interest rates and home prices, as well as low housing inventory.

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.

Recently, two hurricanes impacted the southeastern coast of the United States. The FHLBanks continue to analyze and evaluate the potential impact that hurricane-related damage might have on their advances, letters of credit, mortgage loans held for portfolio, non-agency mortgage-backed securities investments, and community programs. Based on the information currently available, the losses related to these hurricanes did not have a material effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows for the quarterly period ended September 30, 2018.

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.

Interest rates, volatility, and spreads were affected by several factors during the three and nine months ended September 30, 2018. In the United States, overall economic conditions, monetary policy, and financial regulation all continued to be influencing factors. Table 1 presents key interest rate data that illustrates the increases in average interest rates during the three and nine months ended September 30, 2018, compared to the same periods in 2017, as well as increases in period-end rates at September 30, 2018, compared to December 31, 2017.

Table 1 - Key Interest Rates

	Three-Month Average		Nine-Month Average		Period End	
	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017	September 30, 2018	December 31, 2017
Federal Funds Effective	1.92%	1.15%	1.70%	0.94%	2.18%	1.33%
3-month LIBOR	2.34%	1.32%	2.20%	1.20%	2.40%	1.69%
2-year swap rate	2.86%	1.60%	2.67%	1.57%	2.99%	2.08%
10-year swap rate	2.99%	2.20%	2.91%	2.26%	3.12%	2.40%
3-month U.S. Treasury yield	2.06%	1.05%	1.83%	0.84%	2.20%	1.38%
2-year U.S. Treasury yield	2.66%	1.36%	2.43%	1.29%	2.82%	1.89%
10-year U.S. Treasury yield	2.92%	2.24%	2.86%	2.31%	3.06%	2.41%
30-year residential mortgage note rate	4.83%	4.13%	4.71%	4.23%	4.96%	4.22%

Source: Bloomberg

In September 2018, the Federal Reserve Board, acting through its Federal Open Market Committee, decided to raise the target range for the federal funds rate, for the fourth time in 2018, from a target range of 1.75% to 2.00% to a target range of 2.00% to 2.25%, based on labor market conditions and inflation. 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.

During the three and nine months ended September 30, 2018, the cost of consolidated obligations generally improved, as measured by the average spreads to three-month London Interbank Offered Rate (LIBOR) compared to the same periods in 2017, as LIBOR rates trended higher than other rates, including FHLBanks' funding rates and money market rates. Table 2 presents the FHLBanks' funding spreads to three-month LIBOR.

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

	Three-Month Average		Nine-Month Average		Ending Spread	
Borrowing Term	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017	September 30, 2018	December 31, 2017
3-months	(25.5)	(24.6)	(34.5)	(30.0)	(18.6)	(28.9)
2-years	(12.2)	(15.5)	(14.7)	(16.9)	(11.1)	(10.9)
5-years	(1.5)	0.6	(1.5)	2.2	(0.2)	4.1
10-years	29.5	39.1	29.5	46.1	30.5	37.9

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 (ARRC) to identify a set of alternative reference interest rates for possible use as market benchmarks. The ARRC has proposed the Secured Overnight Financing Rate (SOFR) as its recommended alternative to 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. The FHLBanks are currently evaluating the potential impact of the eventual replacement of the LIBOR benchmark interest rate, including the possibility of SOFR as the dominant replacement. (See *Risk Factors* for more information.) On November 13, 2018, the FHLBanks announced the pricing of their first SOFR-linked consolidated bonds. The two-tranche $4.0 billion transaction is scheduled to settle on November 15, 2018.

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, investors, and debt underwriters. 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 $1,089.3 billion at September 30, 2018, a decrease of 1.3% from $1,103.5 billion at December 31, 2017.

- Advances totaled $706.0 billion at September 30, 2018, a decrease of 3.5% from $731.5 billion at December 31, 2017. Commercial banks remain the largest member borrowers with 63.2% of the total principal amount of advances outstanding at September 30, 2018, compared to 63.0% at December 31, 2017. The top 10 advance holding company borrowers represented 33.7% of the total principal amount of advances outstanding at September 30, 2018, compared to 37.3% at December 31, 2017. The FHLBanks protect against credit risk on advances by collateralizing all advances. At September 30, 2018, each FHLBank had rights to collateral with an estimated value greater than the related outstanding advances.

- Investments were $318.3 billion at September 30, 2018, an increase of 3.6% from $307.3 billion at December 31, 2017, driven by increases in interest-bearing deposits and federal funds sold, partially offset by a decrease in securities purchased under agreement to resell. The FHLBanks maintain investment portfolios to provide funds to meet the credit needs of their members, maintain liquidity, and earn interest income.

- Mortgage loans held for portfolio, net, grew to $60.1 billion at September 30, 2018, an increase of 11.6% from $53.8 billion at December 31, 2017, as mortgage loan purchases of $11.3 billion outpaced principal repayments of $4.9 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 $1,031.7 billion at September 30, 2018, a decrease of 1.5% from $1,047.0 billion at December 31, 2017, due primarily to a decrease in consolidated obligations.

- Consolidated obligations totaled $1,016.3 billion at September 30, 2018, a decrease of 1.6% from $1,033.1 billion at December 31, 2017, in line with the decrease in total assets, and consisted of a 4.4% decrease in consolidated bonds and a 2.9% increase 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 $57.6 billion at September 30, 2018, an increase of 2.0% from $56.5 billion at December 31, 2017, driven by growth in retained earnings, partially offset by a decrease in capital stock. The GAAP capital-to-assets ratio was 5.29%, and the regulatory capital-to-assets ratio was 5.31% at September 30, 2018, compared to 5.12% and 5.17% at December 31, 2017. Each FHLBank was in compliance with FHFA regulatory capital requirements at September 30, 2018.

- Retained earnings grew to $19.3 billion at September 30, 2018, an increase of 6.7% from $18.1 billion at December 31, 2017, resulting from net income of $2,771 million, partially offset by dividends of $1,567 million.

- Capital stock was $37.4 billion at September 30, 2018, a decrease of 0.6% from $37.7 billion at December 31, 2017, due to the reclassification of shares to mandatorily redeemable capital stock, partially offset by the net issuance of capital stock to members.

Combined Results of Operations. Net income was $942 million for the three months ended September 30, 2018, an increase of $88 million, or 10.3%, compared to the same period in 2017, resulting primarily from an increase in net interest income. Net income was $2,771 million for the nine months ended September 30, 2018, an increase of $261 million, or 10.4%, compared to the same period in 2017, primarily the result of an increase in net interest income, partially offset by lower non-interest income.

Net interest income after provision (reversal) for credit losses was $1,340 million for the three months ended September 30, 2018, an increase of $103 million, or 8.3%, compared to the same period in 2017. Net interest income after provision (reversal) for credit losses was $3,936 million for the nine months ended September 30, 2018, an increase of $691 million, or 21.3%, compared to the same period in 2017. Net interest margin improved to 0.49% and 0.47% for the three and nine months ended September 30, 2018, increases of 4 and 6 basis points compared to the same periods in 2017.

Non-interest income was $40 million for the three months ended September 30, 2018, an increase of $12 million, or 42.9%, compared to the same period in 2017. Non-interest income was $103 million for the nine months ended September 30, 2018, a decrease of $454 million, or 81.5%, compared to the same period in 2017, due primarily to lower gains on derivatives and hedging activities, losses on trading securities, and lower gains on litigation settlements.

Non-interest expense was $331 million for the three months ended September 30, 2018, an increase of $17 million, or 5.4%, compared to the same period in 2017. Non-interest expense was $954 million for the nine months ended September 30, 2018, a decrease of $52 million, or 5.2%, compared to the same period in 2017.

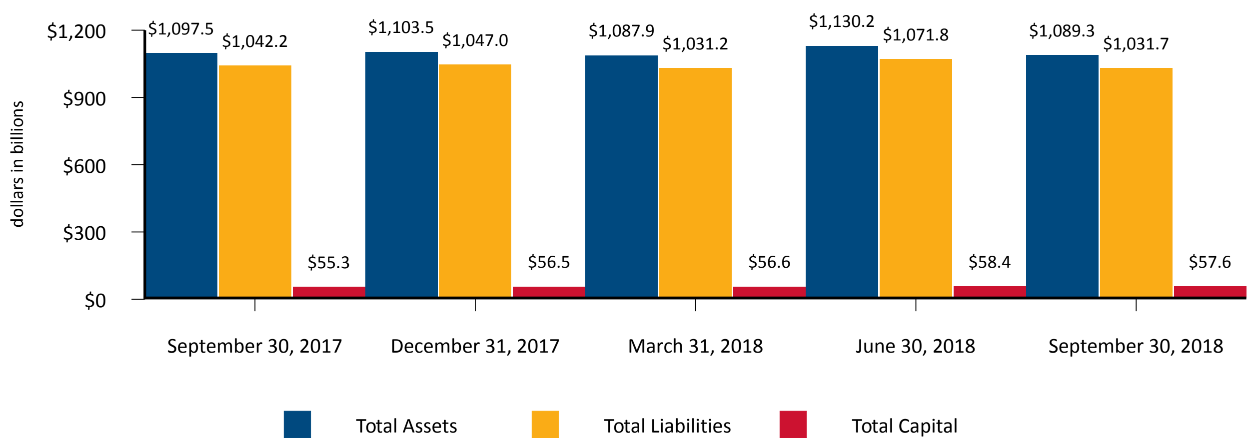
Affordable Housing Program assessments result from individual FHLBank income subject to assessments. Affordable Housing Program assessments were $107 million and $314 million for the three and nine months ended September 30, 2018, increases of $10 million and $28 million, or 10.3% and 9.8%, compared to the same periods in 2017.

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

Combined Financial Condition

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

Figure 2: Total Assets, Liabilities, and Capital



Figures 3 and 4 present the total assets and total liabilities and capital composition at September 30, 2018.

Figure 3: Total Assets (dollars in billions)

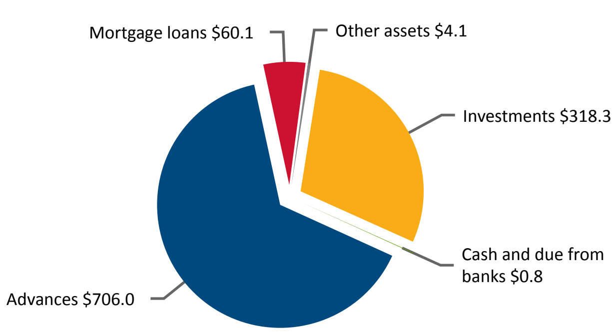
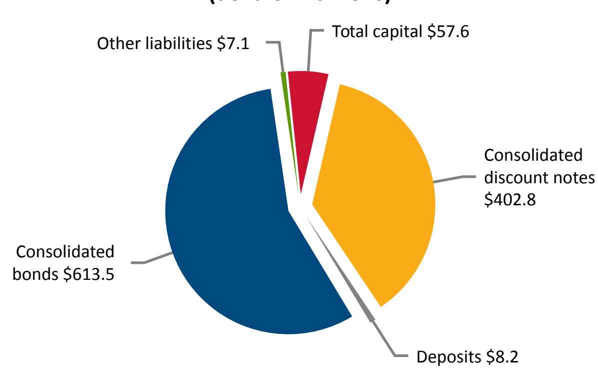


Figure 4: Total Liabilities and Capital (dollars in billions)



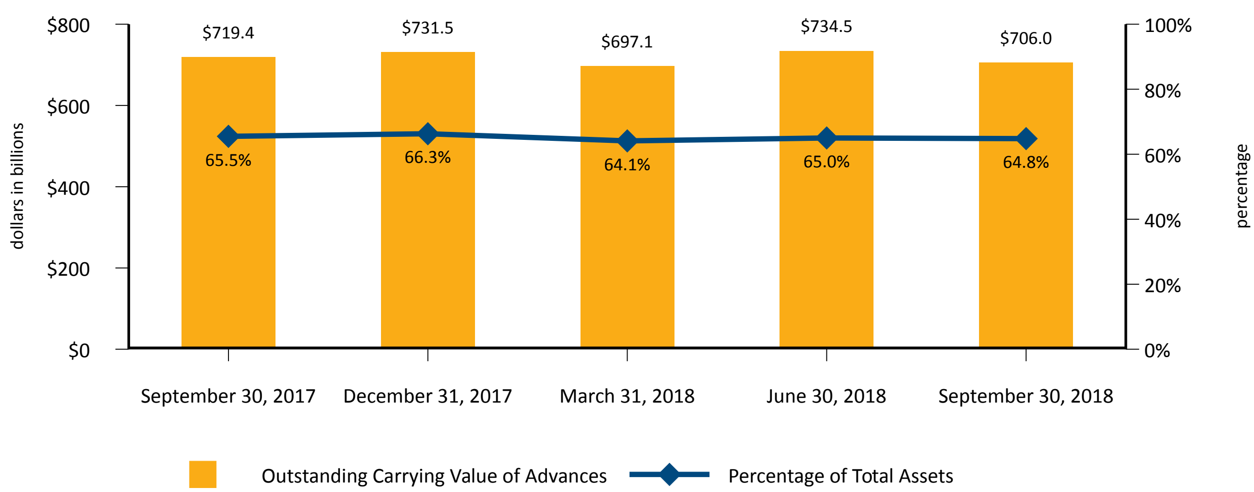
The following discussion contains information on the major categories of the Combined Statement of Condition: advances, investments, mortgage loans, consolidated obligations, deposits, and capital.

- Total assets were $1,089.3 billion at September 30, 2018, a decrease of 1.3% from $1,103.5 billion at December 31, 2017.
- Total liabilities were $1,031.7 billion at September 30, 2018, a decrease of 1.5% from $1,047.0 billion at December 31, 2017.
- Total GAAP capital was $57.6 billion at September 30, 2018, an increase of 2.0% from $56.5 billion at December 31, 2017.

Advances

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

Figure 5: Advances Outstanding (Carrying Value)



The outstanding carrying value of advances totaled $706.0 billion at September 30, 2018, a decrease of $25.5 billion, or 3.5%, from $731.5 billion at December 31, 2017, due primarily to a decline in variable-rate advances. The percentage of members with outstanding advances was 58.0% at September 30, 2018, compared to 57.2% at December 31, 2017. Figures 6 and 7 present the principal amount of advances by product type and by contractual maturity at September 30, 2018.

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

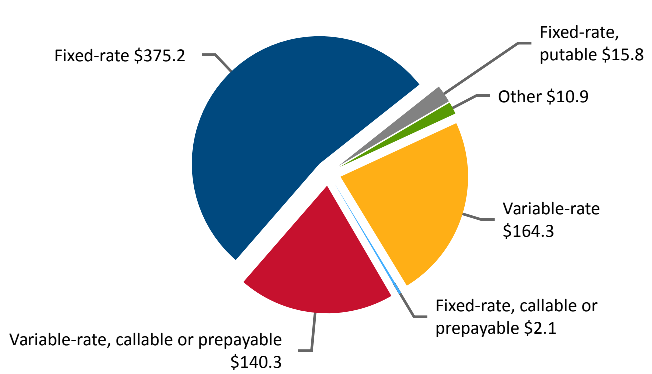


Figure 7: Advances by Contractual Maturity (dollars in billions)

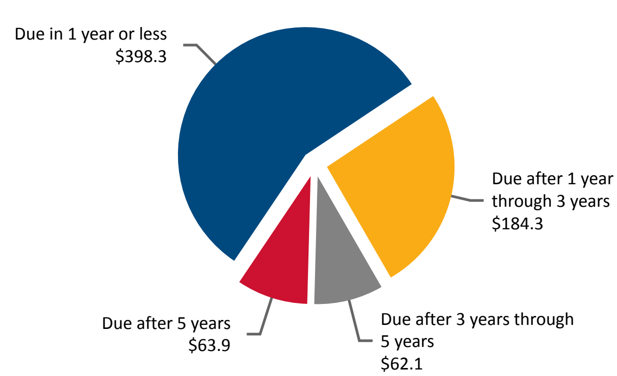


Table 3 presents advances outstanding by product type and contractual maturity, some of which include advances that contain embedded put or call options. A member either can sell an embedded option to an FHLBank or it can purchase an embedded option from an FHLBank. (See *Note 7 - Advances* to the accompanying combined financial statements for additional information on putable and callable advances and their potential effects on advance maturities.)

Table 3 - Types of Advances by Contractual Maturity
(dollars in millions)

	September 30, 2018		December 31, 2017		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Fixed-rate						
Due in 1 year or less	$ 245,169	34.6%	$ 257,684	35.2%	$ (12,515)	(4.9)%
Due after 1 year through 3 years	83,241	11.7%	75,933	10.4%	7,308	9.6 %
Due after 3 years through 5 years	32,537	4.6%	33,145	4.5%	(608)	(1.8)%
Thereafter	14,274	2.0%	15,716	2.1%	(1,442)	(9.2)%
Total principal amount	375,221	52.9%	382,478	52.2%	(7,257)	(1.9)%
Fixed-rate, callable or prepayable(1)						
Due in 1 year or less	724	0.1%	1,105	0.2%	(381)	(34.5)%
Due after 1 year through 3 years	1,168	0.2%	1,235	0.2%	(67)	(5.4)%
Due after 3 years through 5 years	180	—	807	0.1%	(627)	(77.7)%
Thereafter	55	—	182	—	(127)	(69.8)%
Total principal amount	2,127	0.3%	3,329	0.5%	(1,202)	(36.1)%
Fixed-rate, putable						
Due in 1 year or less	45	—	1,774	0.2%	(1,729)	(97.5)%
Due after 1 year through 3 years	186	—	183	—	3	1.6 %
Due after 3 years through 5 years	2,122	0.3%	1,470	0.2%	652	44.4 %
Thereafter	13,397	1.9%	5,150	0.7%	8,247	160.1 %
Total principal amount	15,750	2.2%	8,577	1.1%	7,173	83.6 %
Variable-rate						
Due in 1 year or less	116,264	16.4%	116,542	15.9%	(278)	(0.2)%
Due after 1 year through 3 years	41,879	5.9%	58,427	8.0%	(16,548)	(28.3)%
Due after 3 years through 5 years	4,743	0.7%	11,971	1.6%	(7,228)	(60.4)%
Thereafter	1,455	0.2%	1,350	0.2%	105	7.8 %
Total principal amount	164,341	23.2%	188,290	25.7%	(23,949)	(12.7)%
Variable-rate, callable or prepayable(1)						
Due in 1 year or less	34,470	4.9%	30,322	4.1%	4,148	13.7 %
Due after 1 year through 3 years	54,770	7.7%	44,377	6.1%	10,393	23.4 %
Due after 3 years through 5 years	20,490	2.9%	27,344	3.7%	(6,854)	(25.1)%
Thereafter	30,521	4.4%	36,708	5.0%	(6,187)	(16.9)%
Total principal amount	140,251	19.9%	138,751	18.9%	1,500	1.1 %
Other(2)						
Due in 1 year or less	1,630	0.2%	1,390	0.2%	240	17.3 %
Due after 1 year through 3 years	3,006	0.4%	2,328	0.3%	678	29.1 %
Due after 3 years through 5 years	2,003	0.3%	2,380	0.4%	(377)	(15.8)%
Thereafter	4,241	0.6%	4,579	0.7%	(338)	(7.4)%
Total principal amount	10,880	1.5%	10,677	1.6%	203	1.9 %
Overdrawn and overnight deposit accounts	21	—	12	—	9	75.0 %
Total principal amount advances	708,591	100.0%	732,114	100.0%	$ (23,523)	(3.2)%
Other adjustments(3)	(2,586)		(570)			
Total advances	$ 706,005		$ 731,544			

(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, and other advances.
(3) Consists of hedging and fair value option valuation adjustments, unamortized premiums, discounts, and commitment fees.

Table 4 presents cash flows related to advance originations and advance repayments. During the three and nine months ended September 30, 2018, advance repayments exceeded originations, resulting in lower advances outstanding. Advance originations and advance repayments increased during the three and nine months ended September 30, 2018, compared to the same periods in 2017, driven by an increase in advances with short-term maturities.

Table 4 - Advance Originations and Repayments
(dollars in millions)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	Change	2018	2017	Change
Advances originated	$ 2,501,513	$ 2,403,612	$ 97,901	$ 8,692,711	$ 6,836,463	$ 1,856,248
Advances repaid	2,529,620	2,390,853	138,767	8,716,228	6,821,639	1,894,589
Net change	$ (28,107)	$ 12,759		$ (23,517)	$ 14,824	

The FHLBanks make advances primarily to their members. Table 5 presents the principal amount of advances by type of borrower and Table 6 presents member borrowers by type of member.

Table 5 - Principal Amount of Advances by Type of Borrower
(dollars in millions)

	September 30, 2018		December 31, 2017	
	Principal Amount	Percentage of Total Principal Amount of Advances	Principal Amount	Percentage of Total Principal Amount of Advances
Commercial bank members	$ 447,478	63.2%	$ 460,904	63.0%
Insurance company members(1)	102,966	14.5%	101,602	13.9%
Savings institution members	88,272	12.5%	101,036	13.8%
Credit union members	58,266	8.2%	54,832	7.5%
Community development financial institution members	206	—	162	—
Total member advances	697,188	98.4%	718,536	98.2%
Non-member borrowers	10,355	1.5%	12,683	1.7%
Housing associates	1,048	0.1%	895	0.1%
Total principal amount	$ 708,591	100.0%	$ 732,114	100.0%

(1) Includes $21.1 billion and $24.1 billion of the principal amount of advances outstanding to captive insurance members at September 30, 2018 and December 31, 2017.

Table 6 - Member Borrowers by Type of Member

	September 30, 2018		December 31, 2017	
	Number	Percentage of Total Member Borrowers	Number	Percentage of Total Member Borrowers
Commercial banks	2,648	66.2%	2,696	67.5%
Credit unions	634	15.8%	580	14.5%
Savings institutions	508	12.7%	522	13.1%
Insurance companies	187	4.7%	176	4.4%
Community development financial institutions	24	0.6%	21	0.5%
Total member borrowers	4,001	100.0%	3,995	100.0%
Total members	6,900		6,989	

Table 7 presents the FHLBanks' top 10 advance holding borrowers at the holding-company level on a combined basis based on the principal amount of advances outstanding at September 30, 2018. The percentage of total advances for each holding company was computed by dividing the principal amount of advances by subsidiaries of that holding company by the principal amount of total combined advances. These percentage concentrations do not represent borrowing concentrations in an individual FHLBank.

Table 7 - Top 10 Advance Holding Borrowers by Holding Company at September 30, 2018
(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Principal Amount	Percentage of Total Principal Amount of Advances
Wells Fargo & Company	Des Moines, San Francisco	$ 49,899	7.0%
JPMorgan Chase & Co.	Pittsburgh, Cincinnati, Chicago, Des Moines, San Francisco	46,427	6.6%
Bank of America Corporation	Boston, Atlanta, Des Moines, San Francisco	29,383	4.1%
Citigroup Inc.	New York, Dallas, San Francisco	20,996	3.0%
The PNC Financial Services Group, Inc.	Pittsburgh, Atlanta, Cincinnati	20,036	2.8%
Ally Financial Inc.	Pittsburgh	17,525	2.5%
MetLife, Inc.	Boston, New York, Pittsburgh, Des Moines	15,970	2.3%
New York Community Bancorp, Inc.	New York	13,281	1.9%
Navy Federal Credit Union	Atlanta	13,068	1.8%
Mitsubishi UFJ Financial Group, Inc.	San Francisco	11,900	1.7%
		$ 238,485	33.7%

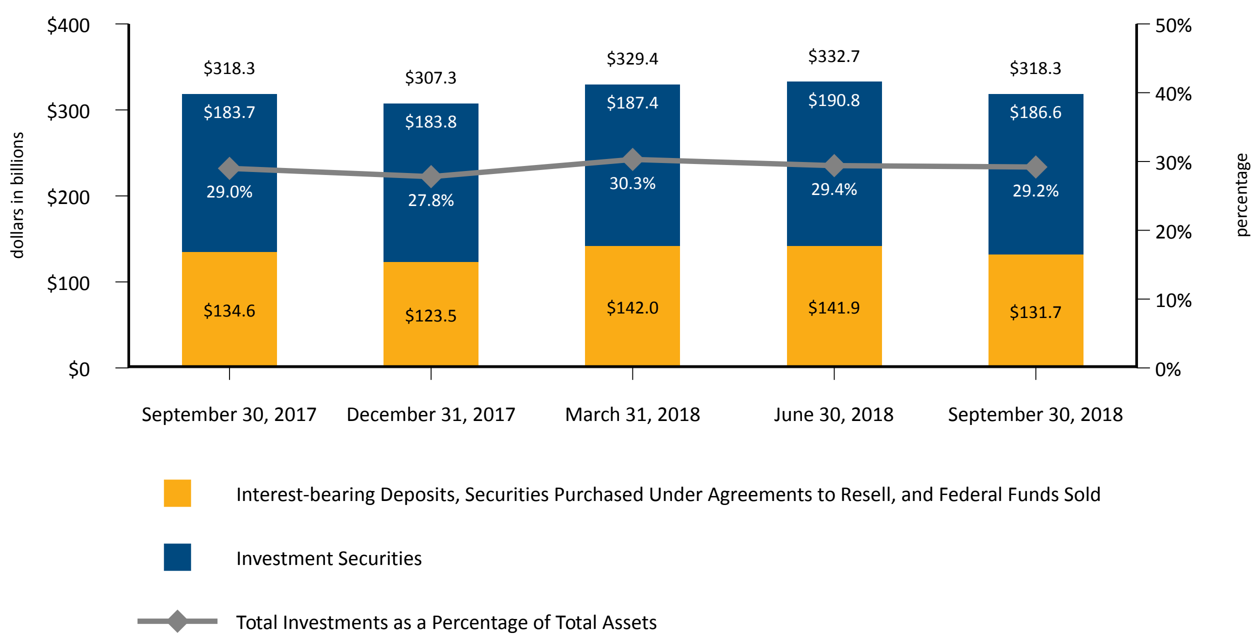
(1) Holding company information was obtained from the Federal Reserve System's web site, the National Information Center (NIC), and SEC filings. The NIC is a central repository of data about banks and other institutions for which the Federal Reserve System has a supervisory, regulatory, or research interest,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

(2) At September 30, 2018, each holding company had subsidiaries with advance borrowings in these FHLBank districts.

Investments

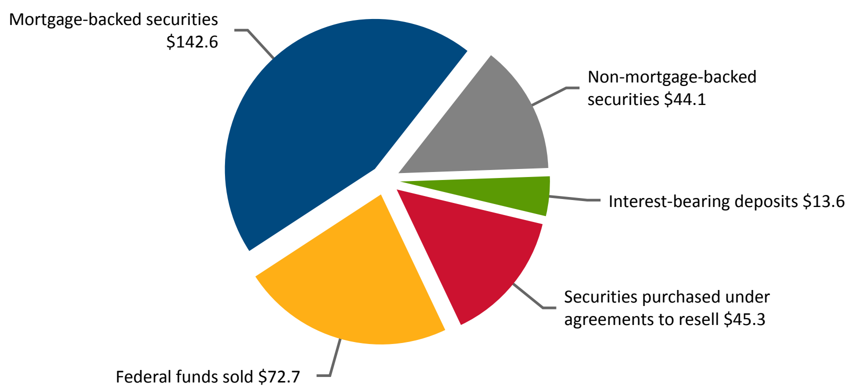
The FHLBanks maintain investment portfolios for liquidity purposes and to generate additional earnings. The income from these investment portfolios bolsters the FHLBanks' capacity to meet their commitments to affordable housing and community investment. The FHLBanks invest in investment-quality securities 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 8 presents total investments for the most recent five quarters.

Figure 8: Total Investments (Carrying Value)



Total investments were $318.3 billion at September 30, 2018, an increase of $11.0 billion, or 3.6%, from $307.3 billion at December 31, 2017, driven primarily by increases in interest-bearing deposits and federal funds sold, partially offset by a decrease in securities purchased under agreements to resell. Figure 9 presents the composition of investments by product type at September 30, 2018.

Figure 9: Investments by Product Type
(dollars in billions)



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 September 30, 2018, 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 8 presents the composition of investments, including investment securities, at September 30, 2018 and December 31, 2017.

Table 8 - Total Investments
(dollars in millions)

Carrying Value	September 30, 2018	December 31, 2017	Change
Interest-bearing deposits	$ 13,619	$ 5,420	$ 8,199
Securities purchased under agreements to resell	45,307	52,568	(7,261)
Federal funds sold	72,730	65,530	7,200
Total Investment Securities by Major Security Type			
Investment securities non-mortgage-backed securities			
Certificates of deposit	3,010	2,160	850
U.S. obligations	13,168	7,127	6,041
GSE and Tennessee Valley Authority obligations	19,557	24,167	(4,610)
State or local housing agency obligations	3,323	3,580	(257)
Federal Family Education Loan Program ABS	3,901	4,214	(313)
Other	1,105	1,215	(110)
Total investment securities non-mortgage-backed securities	44,064	42,463	1,601
Investment securities mortgage-backed securities			
U.S. obligations single-family MBS	12,682	12,895	(213)
U.S. obligations multifamily MBS	369	446	(77)
GSE single-family MBS	40,030	42,797	(2,767)
GSE multifamily MBS	82,177	76,163	6,014
Private-label residential MBS	7,154	8,810	(1,656)
Manufactured housing loan ABS	38	54	(16)
Home equity loan ABS	115	134	(19)
Total investment securities mortgage-backed securities	142,565	141,299	1,266
Total investment securities	186,629	183,762	2,867
Total investments	$ 318,285	$ 307,280	$ 11,005

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.)

Table 9 presents the interest-rate payment terms of investment securities at September 30, 2018 and December 31, 2017.

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

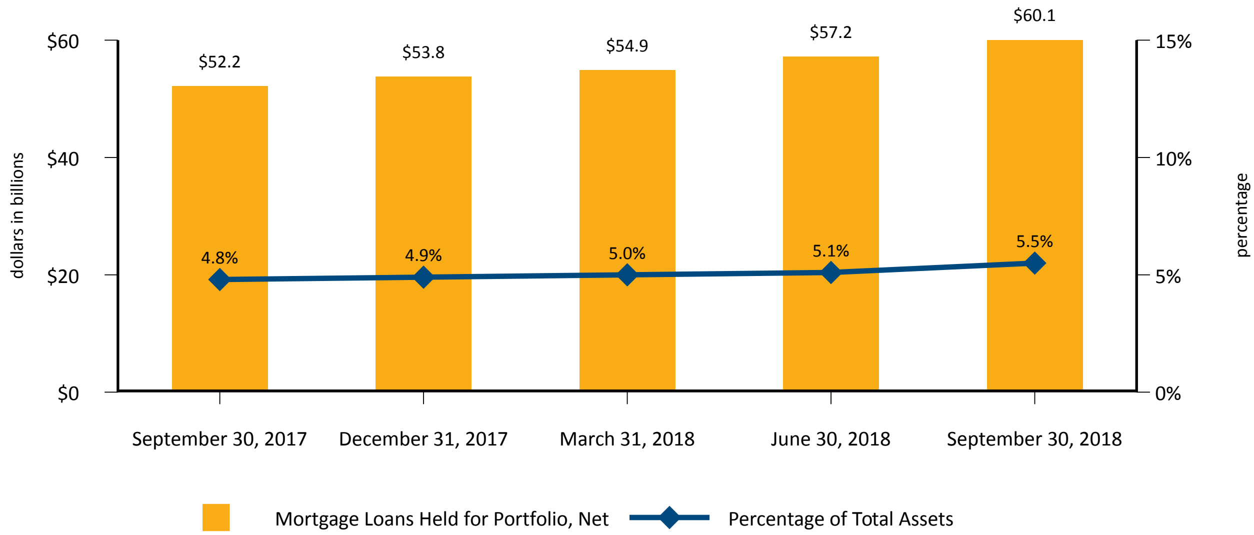
	September 30, 2018	December 31, 2017
Trading Securities at Fair Value		
Trading non-mortgage-backed securities		
Fixed-rate	$ 10,615	$ 3,811
Variable-rate	1,264	2,315
Total trading non-mortgage-backed securities	11,879	6,126
Trading mortgage-backed securities		
Fixed-rate	1,415	1,493
Variable-rate	95	117
Total trading mortgage-backed securities	1,510	1,610
Total trading securities	$ 13,389	$ 7,736
Available-for-Sale Securities at Amortized Cost		
Available-for-sale non-mortgage-backed securities		
Fixed-rate	$ 18,056	$ 18,900
Variable-rate	6,096	6,708
Total available-for-sale non-mortgage-backed securities	24,152	25,608
Available-for-sale mortgage-backed securities		
Fixed-rate	33,399	29,343
Variable-rate	21,566	23,246
Total available-for-sale mortgage-backed securities	54,965	52,589
Total available-for-sale securities	$ 79,117	$ 78,197
Held-to-Maturity Securities at Amortized Cost		
Held-to-maturity non-mortgage-backed securities		
Fixed-rate	$ 2,345	$ 4,797
Variable-rate	5,257	5,516
Total held-to-maturity non-mortgage-backed securities	7,602	10,313
Held-to-maturity mortgage-backed securities		
Fixed-rate	25,677	33,670
Variable-rate	59,943	52,823
Total held-to-maturity mortgage-backed securities	85,620	86,493
Total held-to-maturity securities	$ 93,222	$ 96,806

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. At September 30, 2018, each of the FHLBanks of Cincinnati and Topeka exceeded the 300% regulatory limit. Each of these FHLBanks was not required to sell any previously purchased securities. Each of the FHLBanks was in compliance with the regulatory limit at the time of its respective securities purchases. On a combined basis, the FHLBanks' percentage of MBS/ABS (net of regulatory excluded MBS) was 252% of total combined regulatory capital at September 30, 2018.

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. Figure 10 presents mortgage loans held for portfolio, net, for the most recent five quarters.

Figure 10: Mortgage Loans Held for Portfolio, Net (Carrying Value)



Mortgage loans grew to $60.1 billion at September 30, 2018, an increase of 11.6%, from $53.8 billion at December 31, 2017, as mortgage loan purchases of $11.3 billion outpaced principal repayments of $4.9 billion. The allowance for credit losses on mortgage loans was $15 million at September 30, 2018, a decrease of 6.3% from $16 million at December 31, 2017.

Table 10 - Mortgage Loans Held for Portfolio, Net
(dollars in millions)

	September 30, 2018	December 31, 2017	Change
Mortgage loans held for portfolio	$ 60,090	$ 53,843	$ 6,247
Allowance for credit losses on mortgage loans	(15)	(16)	1
Total mortgage loans held for portfolio, net	$ 60,075	$ 53,827	$ 6,248

Mortgage Loans Held for Portfolio. As of September 30, 2018, 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 September 30, 2018, and expects the balance of its existing MPP loans, acquired through its 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 11 presents the characteristics 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 11 - Mortgage Loans Held for Portfolio - Characteristics and Credit Losses
(dollars in millions)

Unpaid Principal Balance	September 30, 2018	December 31, 2017
Total past due 90 days or more and still accruing interest	$ 84	$ 105
Non-accrual loans	$ 147	$ 194
Troubled debt restructurings (not included above)(1)	$ 88	$ 93

	Nine Months Ended September 30, 2018	Year Ended December 31, 2017
Allowance for credit losses, beginning of period	$ 16	$ 18
Charge-offs, net of recoveries	(2)	(2)
Provision (reversal) for credit losses	1	—
Allowance for credit losses, end of period	$ 15	$ 16

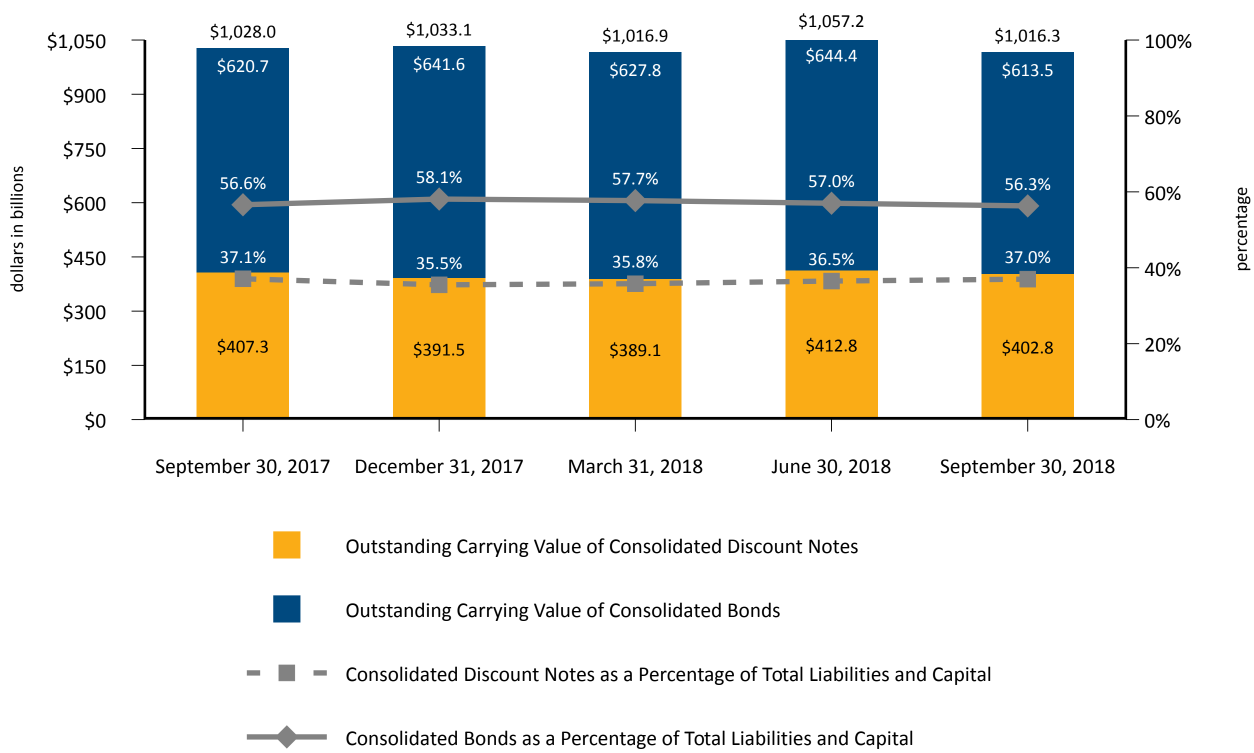
(1) Represents troubled debt restructured loans that are still performing as of the period-end presented.

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, 2017, for more information.

Consolidated Obligations

Consolidated obligations consist of consolidated bonds and consolidated discount notes, which are debt instruments issued through the Office of Finance, and are joint and several obligations of all FHLBanks. Consolidated obligations are the principal funding source used by the FHLBanks to make advances and to purchase mortgage loans and investments. Figure 11 presents consolidated bonds and consolidated discount notes for the most recent five quarters.

Figure 11: Consolidated Obligations Outstanding (Carrying Value)



The carrying value of consolidated obligations totaled $1,016.3 billion at September 30, 2018, a decrease of $16.8 billion, or 1.6%, from $1,033.1 billion at December 31, 2017, in line with the decrease in total assets, and consisted of a 4.4% decrease in consolidated bonds and a 2.9% increase 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 or variable-rate coupon payment terms and may have maturities ranging from one month to 30 years. The carrying value of consolidated bonds was $613.5 billion at September 30, 2018, a decrease of $28.1 billion, or 4.4%, from $641.6 billion at December 31, 2017, consisting primarily of a decrease in variable-rate consolidated bonds. Consolidated bonds represented 60.4% and 62.1% of total consolidated obligations outstanding at September 30, 2018 and December 31, 2017.

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 overnight discount notes. The carrying value of consolidated discount notes was $402.8 billion at September 30, 2018, an increase of $11.3 billion, or 2.9%, from $391.5 billion at December 31, 2017. Consolidated discount notes represented 39.6% and 37.9% of total consolidated obligations outstanding at September 30, 2018 and December 31, 2017.

Figures 12 and 13 present the principal amount of consolidated obligations by product type and by contractual maturity at September 30, 2018.

Figure 12: Consolidated Obligations by Product Type (dollars in billions)

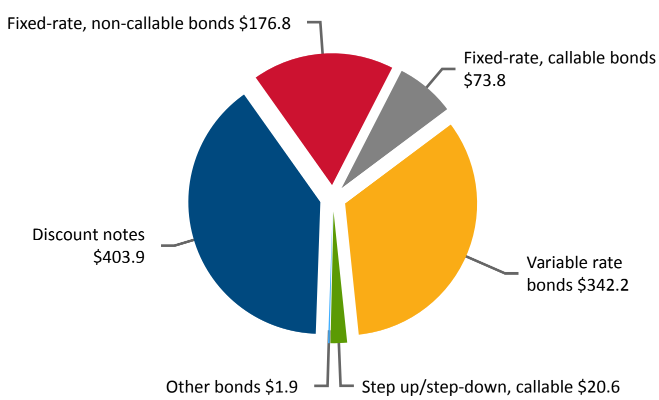


Figure 13: Consolidated Obligations by Contractual Maturity (dollars in billions)

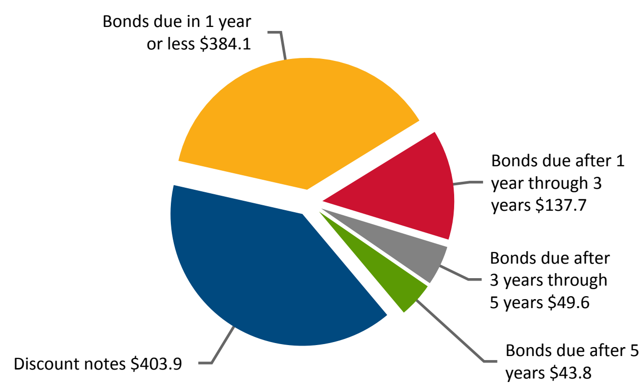


Table 12 presents the composition of consolidated obligations by product type and by contractual maturity at September 30, 2018 and December 31, 2017.

Table 12 - Types of Consolidated Obligations by Contractual Maturity
(dollars in millions)

	September 30, 2018		December 31, 2017		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Consolidated Discount Notes						
Overnight	$ 18,104	1.8%	$ 10,575	1.0%	$ 7,529	71.2 %
Due after 1 day through 30 days	165,476	16.2%	166,737	16.2%	(1,261)	(0.8)%
Due after 30 days through 90 days	170,755	16.7%	191,591	18.5%	(20,836)	(10.9)%
Due after 90 days through 1 year	49,547	4.9%	23,146	2.2%	26,401	114.1 %
Total principal amount	403,882	39.6%	392,049	37.9%	11,833	3.0 %
Consolidated Bonds						
Fixed-rate, non-callable						
Due in 1 year or less	66,223	6.5%	62,812	6.1%	3,411	5.4 %
Due after 1 year through 3 years	71,325	7.0%	85,502	8.3%	(14,177)	(16.6)%
Due after 3 years through 5 years	23,629	2.3%	27,248	2.6%	(3,619)	(13.3)%
Thereafter	15,631	1.6%	15,975	1.5%	(344)	(2.2)%
Total principal amount	176,808	17.4%	191,537	18.5%	(14,729)	(7.7)%
Fixed-rate, callable						
Due in 1 year or less	4,713	0.5%	7,172	0.7%	(2,459)	(34.3)%
Due after 1 year through 3 years	26,556	2.6%	17,094	1.7%	9,462	55.4 %
Due after 3 years through 5 years	19,659	1.9%	20,135	1.9%	(476)	(2.4)%
Thereafter	22,844	2.3%	20,223	2.0%	2,621	13.0 %
Total principal amount	73,772	7.3%	64,624	6.3%	9,148	14.2 %
Variable-rate (non-capped and capped)						
Due in 1 year or less	309,668	30.4%	321,287	31.1%	(11,619)	(3.6)%
Due after 1 year through 3 years	32,298	3.2%	49,533	4.8%	(17,235)	(34.8)%
Due after 3 years through 5 years	250	—	—	—	250	—
Thereafter	—	—	—	—	—	—
Total principal amount	342,216	33.6%	370,820	35.9%	(28,604)	(7.7)%
Step-up/step-down, callable						
Due in 1 year or less	3,431	0.3%	240	—	3,191	1,329.6 %
Due after 1 year through 3 years	7,090	0.7%	2,110	0.2%	4,980	236.0 %
Due after 3 years through 5 years	5,731	0.6%	6,815	0.7%	(1,084)	(15.9)%
Thereafter	4,359	0.4%	4,605	0.4%	(246)	(5.3)%
Total principal amount	20,611	2.0%	13,770	1.3%	6,841	49.7 %
Other						
Due in 1 year or less	85	—	48	—	37	77.1 %
Due after 1 year through 3 years	480	—	95	—	385	405.3 %
Due after 3 years through 5 years	300	—	300	—	—	— %
Thereafter	989	0.1%	1,019	0.1%	(30)	(2.9)%
Total principal amount	1,854	0.1%	1,462	0.1%	392	26.8 %
Total principal amount consolidated bonds	615,261	60.4%	642,213	62.1%	(26,952)	(4.2)%
Total principal amount	1,019,143	100.0%	1,034,262	100.0%	$ (15,119)	(1.5)%
Other adjustments(1)	(2,849)		(1,181)			
Total consolidated obligations	$ 1,016,294		$ 1,033,081			

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

Table 13 presents cash flows related to consolidated obligations, which illustrates payments exceeding proceeds for the three and nine months ended September 30, 2018, resulting in lower consolidated obligations outstanding. The volume of both net proceeds and total payments of consolidated obligations increased during the three and nine months ended September 30, 2018, compared to the same periods in 2017. This was due to increased short-term funding needs, resulting from short-term advance demand.

Table 13 - Net Proceeds and Payments for Consolidated Obligations
(dollars in millions)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	Change	2018	2017	Change
Net proceeds from issuance of consolidated obligations						
Discount notes	$ 1,699,458	$ 1,579,704	$ 119,754	$ 5,516,750	$ 4,634,721	$ 882,029
Bonds	94,680	143,760	(49,080)	364,502	351,936	12,566
Net proceeds	1,794,138	1,723,464	$ 70,674	5,881,252	4,986,657	$ 894,595
Payments for maturing and retiring consolidated obligations						
Discount notes	1,709,467	1,601,174	$ 108,293	5,505,655	4,637,459	$ 868,196
Bonds	125,535	105,216	20,319	391,416	310,142	81,274
Total payments	1,835,002	1,706,390	$ 128,612	5,897,071	4,947,601	$ 949,470
Net change	$ (40,864)	$ 17,074		$ (15,819)	$ 39,056	

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 bonds 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.

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 and nine months ended September 30, 2018 and 2017, investors preferred variable-rate consolidated obligations to fixed-rate consolidated obligations as investors sought interest-rate protection in a rising interest-rate environment. Table 14 presents the bond types the FHLBanks relied on for their bond funding needs.

Table 14 - Percentage of Total Consolidated Bonds Issued by Bond Type

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Single-index, variable-rate	78.7%	81.6%	84.0%	82.1%
Fixed-rate, non-callable	10.0%	10.0%	9.0%	11.2%
Step-up/step-down(1)	5.8%	1.1%	2.3%	1.3%
Fixed-rate, callable	5.5%	7.3%	4.7%	5.3%
Other	—	—	—	0.1%
Total	100.0%	100.0%	100.0%	100.0%

(1) 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 $8.2 billion at September 30, 2018, an increase of $0.4 billion, or 5.7%, from December 31, 2017. 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 92.0% and 89.4% of deposits at September 30, 2018 and December 31, 2017, with the remaining deposits primarily being term deposits and non-interest-bearing deposits.

Capital

GAAP capital consists of capital stock, retained earnings, and accumulated other comprehensive income (loss). Figure 14 presents GAAP capital and the GAAP capital-to-assets ratio for the most recent five quarters.

Figure 14: GAAP Capital

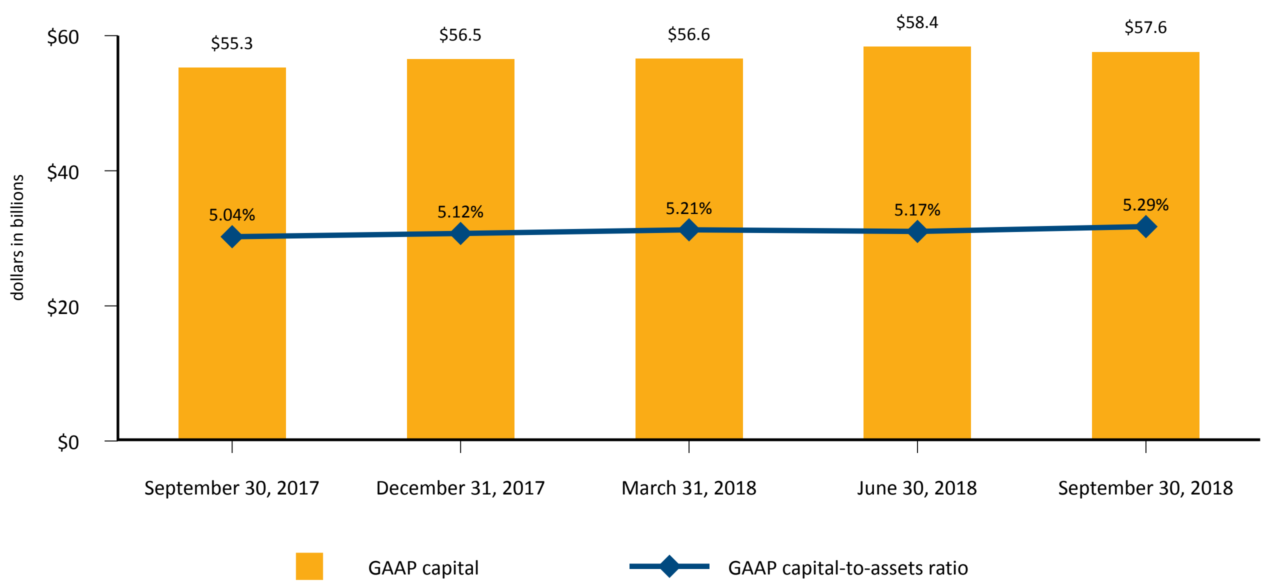


Table 15 - Total Capital and Capital-to-Assets Ratios
(dollars in millions)

	September 30, 2018	December 31, 2017	Change
Capital stock	$ 37,415	$ 37,657	$ (242)
Retained earnings	19,308	18,099	1,209
AOCI	861	724	137
Total GAAP capital	57,584	56,480	1,104
Exclude: AOCI	(861)	(724)	(137)
Add: Mandatorily redeemable capital stock	1,078	1,272	(194)
Other(1)	—	(1)	1
Total combined regulatory capital(2)	$ 57,801	$ 57,027	$ 774
Total assets	$ 1,089,255	$ 1,103,451	$ (14,196)
Combined GAAP capital-to-assets ratio	5.29%	5.12%	
Combined regulatory capital-to-assets ratio(3)	5.31%	5.17%	

(1) Represents rounding adjustments.
(2) Regulatory capital requirements apply to individual FHLBanks, and the combined amounts are for analysis only. The sum of the individual FHLBank regulatory capital amounts does not agree to the total combined regulatory capital due to combining adjustments.
(3) The combined regulatory capital-to-assets ratio is calculated based on the FHLBanks' combined regulatory capital as a percentage of combined total assets. (See *Note 13 - Capital* to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

GAAP Capital. Total GAAP capital was $57.6 billion at September 30, 2018, an increase of 2.0% from $56.5 billion at December 31, 2017, driven by growth in retained earnings, partially offset by a decrease in capital stock. The combined GAAP capital-to-assets ratio was 5.29% at September 30, 2018, an increase of 17 basis points from 5.12% at December 31, 2017.

Capital Stock. Capital stock was $37.4 billion at September 30, 2018, a decrease of 0.6% from $37.7 billion at December 31, 2017, due to the reclassification of shares to mandatorily redeemable capital stock, partially offset by the net issuance of capital stock to members.

Retained Earnings. Retained earnings grew to $19.3 billion at September 30, 2018, an increase of 6.7% from $18.1 billion at December 31, 2017, resulting from net income of $2,771 million, partially offset by dividends of $1,567 million. Unrestricted retained earnings were $15.2 billion at September 30, 2018, a growth of 4.5% from $14.5 billion at December 31, 2017. Restricted retained earnings were $4.1 billion at September 30, 2018, a growth of 15.7% from $3.6 billion at December 31, 2017.

Table 16 - Capital Components as a Percentage of Total GAAP Capital

	September 30, 2018	December 31, 2017
Capital stock	65.0%	66.7%
Retained earnings	33.5%	32.0%
AOCI	1.5%	1.3%
Total GAAP capital	100.0%	100.0%

Regulatory Capital. Total combined regulatory capital was $57.8 billion at September 30, 2018, an increase of 1.4% compared to $57.0 billion at December 31, 2017, resulting from growth in retained earnings, partially offset by decreases in capital stock and mandatorily redeemable capital stock.

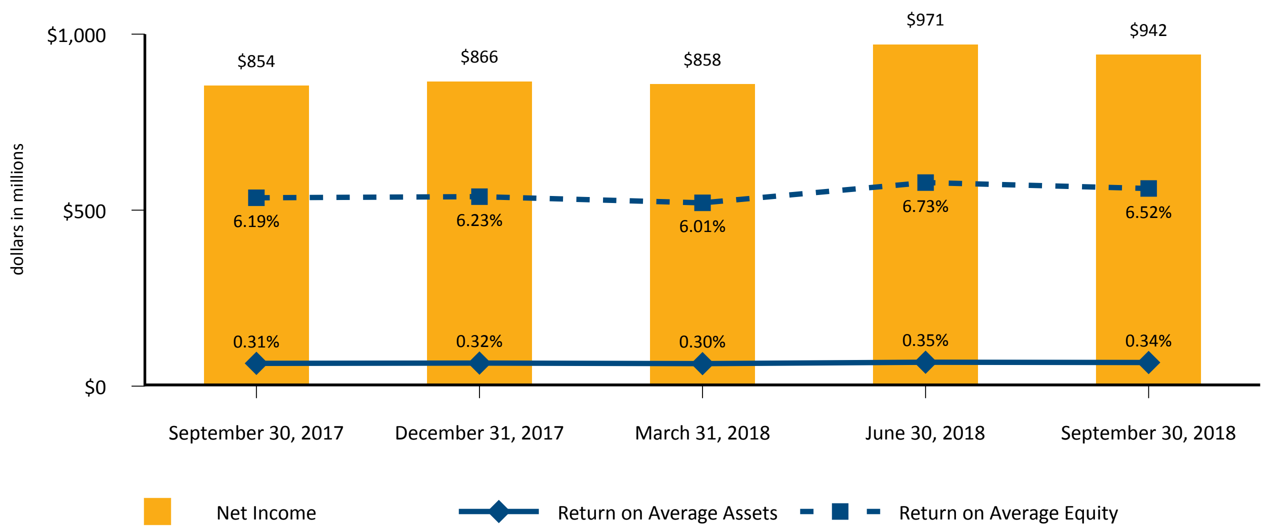
Combined Results of Operations

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 trading 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. Figure 15 presents net income, return on average assets, and return on average equity for the most recent five quarters.

Figure 15: Net Income



Net income was $942 million for the three months ended September 30, 2018, an increase of 10.3% compared to the same period in 2017, resulting primarily from an increase in net interest income. Net income was $2,771 million for the nine months ended September 30, 2018, an increase of 10.4% compared to the same period in 2017, primarily the result of an increase in net interest income, partially offset by lower non-interest income.

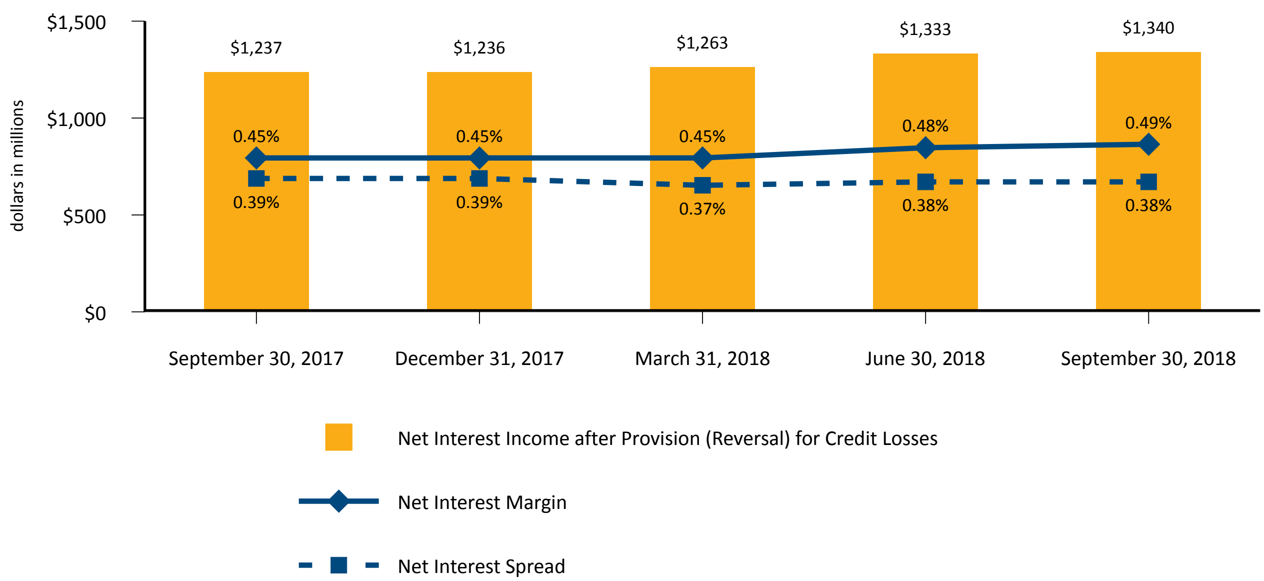
Table 17 - Changes in Net Income
(dollars in millions)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	Change	2018	2017	Change
Net interest income after provision (reversal) for credit losses	$ 1,340	$ 1,237	$ 103	$ 3,936	$ 3,245	$ 691
Non-interest income	40	28	12	103	557	(454)
Non-interest expense	331	314	17	954	1,006	(52)
Affordable Housing Program assessments	107	97	10	314	286	28
Net income	$ 942	$ 854	$ 88	$ 2,771	$ 2,510	$ 261

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 16 presents net-interest income after provision (reversal) for credit losses, net interest margin, and net interest spread for the most recent five quarters.

Figure 16: Net Interest Income after Provision (Reversal) for Credit Losses



Net interest income after provision (reversal) for credit losses was $1,340 million and $3,936 million for the three and nine months ended September 30, 2018, increases of 8.3% and 21.3% compared to the same periods in 2017. Net interest margin improved to 0.49% and 0.47% for the three and nine months ended September 30, 2018, increases of 4 and 6 basis points compared to the same periods in 2017.

Table 18 - Net Interest Income after Provision (Reversal) for Credit Losses
(dollars in millions)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	Change	2018	2017	Change
Interest income						
Advances	$ 4,184	$ 2,586	$ 1,598	$ 11,483	$ 6,291	$ 5,192
Prepayment fees on advances, net	6	5	1	21	22	(1)
Investments and other	2,027	1,421	606	5,534	3,788	1,746
Mortgage loans held for portfolio	504	434	70	1,447	1,269	178
Total interest income	6,721	4,446	2,275	18,485	11,370	7,115
Interest expense						
Consolidated obligations - Discount notes	1,950	1,120	830	5,241	2,597	2,644
Consolidated obligations - Bonds	3,380	2,052	1,328	9,168	5,425	3,743
Total consolidated obligations	5,330	3,172	2,158	14,409	8,022	6,387
Deposits and mandatorily redeemable capital stock	51	38	13	139	103	36
Total interest expense	5,381	3,210	2,171	14,548	8,125	6,423
Net interest income	1,340	1,236	104	3,937	3,245	692
Provision (reversal) for credit losses	—	(1)	1	1	—	1
Net interest income after provision (reversal) for credit losses	$ 1,340	$ 1,237	$ 103	$ 3,936	$ 3,245	$ 691

Table 19 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 19 - Spread and Yield Analysis
(dollars in millions)

	Three Months Ended September 30,					
	2018			2017		
	Average Balance	Interest	Annualized Yield	Average Balance	Interest	Annualized Yield
Assets						
Interest-bearing deposits and other	$ 13,276	$ 68	2.03%	$ 5,113	$ 20	1.55%
Securities purchased under agreements to resell	40,339	202	1.99%	19,817	54	1.08%
Federal funds sold	80,528	401	1.98%	99,714	295	1.17%
Investment securities(1)(2)	185,370	1,356	2.90%	182,882	1,052	2.28%
Advances(3)	707,413	4,190	2.35%	727,441	2,591	1.41%
Mortgage loans	58,635	504	3.41%	51,400	434	3.35%
Total interest-earning assets	1,085,561	6,721	2.46%	1,086,367	4,446	1.62%
Other non-interest-earning assets	6,070			6,844		
Fair-value adjustment on investment securities(2)	2,387			2,496		
Total assets	$ 1,094,018			$ 1,095,707		
Liabilities and Capital						
Consolidated obligations - Discount notes	$ 385,392	1,950	2.01%	$ 411,856	1,120	1.08%
Consolidated obligations - Bonds	634,313	3,380	2.11%	610,958	2,052	1.33%
Deposits and mandatorily redeemable capital stock	8,737	51	2.32%	10,507	38	1.43%
Total interest-bearing liabilities	1,028,442	5,381	2.08%	1,033,321	3,210	1.23%
Non-interest-bearing liabilities	8,220			7,688		
Total liabilities	1,036,662			1,041,009		
Capital	57,356			54,698		
Total liabilities and capital	$ 1,094,018			$ 1,095,707		
Net interest income		$ 1,340			$ 1,236	
Net interest spread			0.38%			0.39%
Net interest margin			0.49%			0.45%
Total interest-earning assets to total interest-bearing liabilities	105.55%			105.13%		

	Nine Months Ended September 30,					
	2018			2017		
	Average Balance	Interest	Annualized Yield	Average Balance	Interest	Annualized Yield
Assets						
Interest-bearing deposits and other	$ 10,081	$ 141	1.87%	$ 5,319	$ 46	1.16%
Securities purchased under agreements to resell	32,221	435	1.81%	19,237	125	0.87%
Federal funds sold	89,713	1,159	1.73%	89,052	646	0.97%
Investment securities(1)(2)	184,094	3,799	2.76%	183,292	2,971	2.17%
Advances(3)	736,178	11,504	2.09%	717,088	6,313	1.18%
Mortgage loans	56,328	1,447	3.43%	49,926	1,269	3.40%
Total interest-earning assets	1,108,615	18,485	2.23%	1,063,914	11,370	1.43%
Other non-interest-earning assets	5,817			6,941		
Fair-value adjustment on investment securities(2)	2,487			2,244		
Total assets	$ 1,116,919			$ 1,073,099		
Liabilities and Capital						
Consolidated obligations - Discount notes	$ 401,627	5,241	1.74%	$ 407,841	2,597	0.85%
Consolidated obligations - Bonds	641,309	9,168	1.91%	593,678	5,425	1.22%
Deposits and mandatorily redeemable capital stock	8,752	139	2.12%	10,106	103	1.36%
Total interest-bearing liabilities	1,051,688	14,548	1.85%	1,011,625	8,125	1.07%
Non-interest-bearing liabilities	7,518			7,798		
Total liabilities	1,059,206			1,019,423		
Capital	57,713			53,676		
Total liabilities and capital	$ 1,116,919			$ 1,073,099		
Net interest income		$ 3,937			$ 3,245	
Net interest spread			0.38%			0.36%
Net interest margin			0.47%			0.41%
Total interest-earning assets to total interest-bearing liabilities	105.41%			105.17%		

(1) Investment securities consist of Trading, AFS, and HTM securities.
(2) The average balances of AFS securities and HTM securities are reflected at amortized cost; 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.
(3) Interest income for advances includes prepayment fees on advances, net.

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 20 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 20 - Rate and Volume Analysis
(dollars in millions)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018 vs. 2017			2018 vs. 2017		
	Volume	Rate	Total	Volume	Rate	Total
Interest Income						
Interest-bearing deposits and other	$ 40	$ 8	$ 48	$ 56	$ 39	$ 95
Securities purchased under agreements to resell	82	66	148	119	191	310
Federal funds sold	(66)	172	106	5	508	513
Investment securities(1)	14	290	304	13	815	828
Advances(2)	(73)	1,672	1,599	173	5,018	5,191
Mortgage loans	62	8	70	167	11	178
Total interest income	59	2,216	2,275	533	6,582	7,115
Interest Expense						
Consolidated obligations - Discount notes	(76)	906	830	(40)	2,684	2,644
Consolidated obligations - Bonds	81	1,247	1,328	465	3,278	3,743
Deposits and mandatorily redeemable capital stock	(7)	20	13	(15)	51	36
Total interest expense	(2)	2,173	2,171	410	6,013	6,423
Changes in net interest income	$ 61	$ 43	$ 104	$ 123	$ 569	$ 692

(1) Investment securities consist of Trading, AFS, and HTM securities.
(2) Includes prepayment fees on advances, net.

Net interest income was $1,340 million and $3,937 million for the three and nine months ended September 30, 2018, increases of 8.4% and 21.3% compared to the same periods in 2017. Interest income grew to $6,721 million and $18,485 million for the three and nine months ended September 30, 2018, increases of 51.2% and 62.6% compared to the same periods in 2017, due primarily to 84 and 80 basis point increases in the yields on interest-earning assets, principally advances. Interest expense was $5,381 million and $14,548 million for the three and nine months ended September 30, 2018, increases of 67.6% and 79.1% compared to the same periods in 2017, due primarily to 85 and 78 basis point increases in the yields on interest-bearing liabilities.

Factors Affecting Net Interest Income.

Advances. Interest income on advances was $4,190 million and $11,504 million for the three and nine months ended September 30, 2018, increases of 61.7% and 82.2% compared to the same periods in 2017, resulting primarily from 94 and 91 basis point increases in the yields on advances. These increases were 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 21* for additional information regarding the effect of derivatives and hedging activities on net interest income.)

Mortgage Loans. Interest income on mortgage loans was $504 million and $1,447 million for the three and nine months ended September 30, 2018, increases of 16.1% and 14.0% compared to the same periods in 2017, primarily the result of higher average balances of mortgage loans. The average balance of mortgage loans was $58.6 billion and $56.3 billion for the three and nine months ended September 30, 2018, increases of 14.1% and 12.8%, as mortgage loan purchases outpaced principal repayments.

Total Investments. Interest income on investments was $2,027 million and $5,534 million for the three and nine months ended September 30, 2018, increases of 42.6% and 46.1% compared to the same periods in 2017, primarily resulting from increases in the yields on investment securities and federal funds sold. The yields on investment securities were 2.90% and 2.76% for the three and nine months ended September 30, 2018, increases of 62 and 59 basis points compared to the same periods in 2017. The yields on federal funds sold were 1.98% and 1.73%, increases of 81 and 76 basis points compared to the same periods in 2017. The increases in the yields on investment securities and federal funds sold were driven primarily by increases in market interest rates.

Consolidated Obligations. Interest expense on consolidated obligations was $5,330 million and $14,409 million for the three and nine months ended September 30, 2018, increases of 68.0% and 79.6% compared to the same periods in 2017, resulting principally from increases in yields on consolidated bonds and consolidated discount notes, driven by the higher interest-rate environment.

For the three and nine months ended September 30, 2018, the yields on consolidated bonds were 2.11% and 1.91%, increases of 78 and 69 basis points, and the yields on consolidated discount notes were 2.01% and 1.74%, increases of 93 and 89 basis points compared to the same periods in 2017. These increases were the result of higher interest rates on consolidated obligations and the effect of derivatives and hedging activities on interest expense from consolidated bonds driven by the higher interest-rate environment. (See *Table 21* 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. Net interest income, net interest margin, and yield on advances for the nine months ended September 30, 2017, were negatively affected by the FHLBank of Atlanta's recording of $302 million of accelerated amortization during the first quarter of 2017, due to prepayments of certain previously restructured and hedged advances. This accelerated amortization was offset by corresponding gains recorded in net gains (losses) on derivatives and hedging activities included in non-interest income, recorded during the first quarter of 2017. Table 21 presents the effect of derivatives and hedging activities on net interest income and Table 23 presents the effect of derivatives and hedging activities on non-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. (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 21 - Effect of Derivatives and Hedging Activities on Net Interest Income
(dollars in millions)

	Three Months Ended September 30, 2018					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (10)	$ 12	$ (2)	$ (6)	$ (10)	$ (16)
Net interest settlements included in net interest income(1)	173	(11)	—	(175)	(14)	(27)
Total effect on net interest income	$ 163	$ 1	$ (2)	$ (181)	$ (24)	$ (43)

	Three Months Ended September 30, 2017					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (10)	$ 17	$ (4)	$ (7)	$ —	$ (4)
Net interest settlements included in net interest income(1)	(154)	(106)	—	33	(48)	(275)
Total effect on net interest income	$ (164)	$ (89)	$ (4)	$ 26	$ (48)	$ (279)

	Nine Months Ended September 30, 2018					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (28)	$ 36	$ (8)	$ (16)	$ (13)	$ (29)
Net interest settlements included in net interest income(1)	295	(104)	—	(380)	(84)	(273)
Total effect on net interest income	$ 267	$ (68)	$ (8)	$ (396)	$ (97)	$ (302)

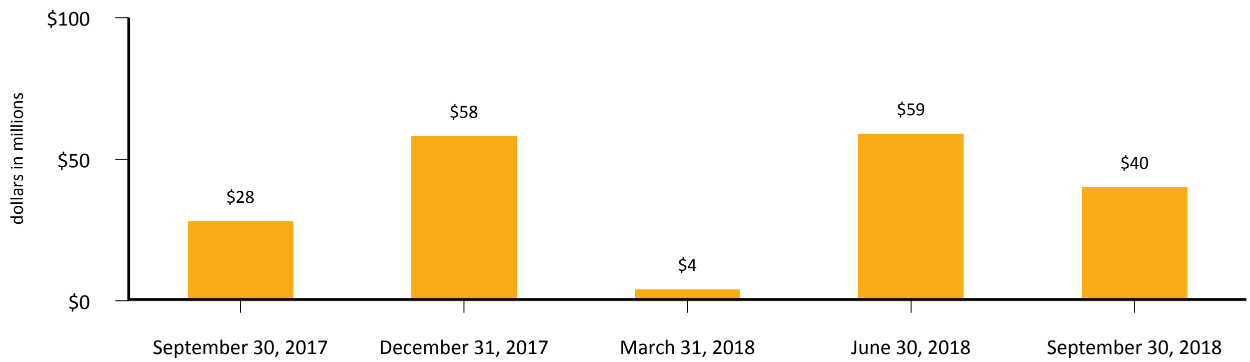
	Nine Months Ended September 30, 2017					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (331)	$ 53	$ (13)	$ (15)	$ (1)	$ (307)
Net interest settlements included in net interest income(1)	(610)	(363)	—	233	(156)	(896)
Total effect on net interest income	$ (941)	$ (310)	$ (13)	$ 218	$ (157)	$ (1,203)

(1) Represents interest income or expense on derivatives included in net interest income.

Non-Interest Income

Non-interest income consists of realized and unrealized gains (losses) on investment securities and derivatives activities, gains on litigation settlements, and other non-interest-earning activities. Figure 17 presents non-interest income for the most recent five quarters.

Figure 17: Non-Interest Income



Non-interest income was $40 million for the three months ended September 30, 2018, an increase of $12 million compared to the same period in 2017. Non-interest income was $103 million for the nine months ended September 30, 2018, a decrease of $454 million compared to the same period in 2017, due primarily to lower gains on derivatives and hedging activities, losses on trading securities, and lower gains on litigation settlements.

Table 22 - Changes in Non-Interest Income
(dollars in millions)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	Change	2018	2017	Change
Net other-than-temporary impairment losses	$ (5)	$ (7)	$ 2	$ (12)	$ (20)	$ 8
Net gains (losses) on trading securities	(24)	2	(26)	(106)	28	(134)
Net realized gains (losses) from sale of available-for-sale securities	—	—	—	32	2	30
Net realized gains (losses) from sale of held-to-maturity securities	3	2	1	3	4	(1)
Net gains (losses) on financial instruments held under fair value option	(18)	(12)	(6)	(73)	(20)	(53)
Net gains (losses) on derivatives and hedging activities	24	—	24	116	293	(177)
Gains on litigation settlements, net	13	—	13	14	139	(125)
Other, net	47	43	4	129	131	(2)
Total non-interest income (loss)	$ 40	$ 28	$ 12	$ 103	$ 557	$ (454)

Gains (Losses) on Trading Securities. The FHLBanks classify certain investment securities generally held for liquidity purposes as trading securities under GAAP. Investment securities classified as 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 these securities, including current and projected levels of interest rates, credit spreads, and volatility, as well as the passage of time. Net losses on trading securities were $24 million and $106 million for the three and nine months ended September 30, 2018, compared to net gains on trading securities of $2 million and $28 million for the three and nine months ended September 30, 2017. Certain trading securities are being economically hedged, and the gains (losses) on these securities are generally offset by the change in fair value of the associated derivatives. (See *Table 23* for additional information regarding 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 or hedging relationship 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. (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 23 presents the effect of derivatives and hedging activities on non-interest income.

Table 23 - Effect of Derivatives and Hedging Activities on Non-Interest Income
(dollars in millions)

	Three Months Ended September 30, 2018							
	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	$ 4	$ (7)	$ —	$ 8	$ —	$ —	$ —	$ 5
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	—	(1)	—	—	(1)
Gains (losses) related to derivatives not designated as hedging instruments	17	28	4	(23)	10	(1)	(5)	30
Other(1)	—	—	—	—	—	—	(10)	(10)
Total net gains (losses) on derivatives and hedging activities	21	21	4	(15)	9	(1)	(15)	24
Net gains (losses) on trading securities(2)	—	(25)	—	—	—	—	—	(25)
Net gains (losses) on financial instruments held at fair value	(14)	—	(2)	(2)	—	—	—	(18)
Total effect on non-interest income	$ 7	$ (4)	$ 2	$ (17)	$ 9	$ (1)	$ (15)	$ (19)

	Three Months Ended September 30, 2017							
	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	$ 17	$ (11)	$ —	$ (4)	$ —	$ —	$ —	$ 2
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	—	1	—	—	1
Gains (losses) related to derivatives not designated as hedging instruments	4	(7)	9	(4)	(5)	(3)	1	(5)
Other(1)	—	—	—	—	—	—	2	2
Total net gains (losses) on derivatives and hedging activities	21	(18)	9	(8)	(4)	(3)	3	—
Net gains (losses) on trading securities(2)	—	2	—	—	—	—	—	2
Net gains (losses) on financial instruments held at fair value	(7)	—	(1)	(3)	(1)	—	—	(12)
Total effect on non-interest income	$ 14	$ (16)	$ 8	$ (11)	$ (5)	$ (3)	$ 3	$ (10)

	Nine Months Ended September 30, 2018							
	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	$ 63	$ 22	$ —	$ (13)	$ —	$ —	$ —	$ 72
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	—	1	—	—	1
Gains (losses) related to derivatives not designated as hedging instruments	99	128	20	(210)	43	2	(16)	66
Other(1)	—	—	—	—	—	—	(23)	(23)
Total net gains (losses) on derivatives and hedging activities	162	150	20	(223)	44	2	(39)	116
Net gains (losses) on trading securities(2)	—	(103)	—	—	—	—	—	(103)
Net gains (losses) on financial instruments held at fair value	(89)	—	(6)	22	—	—	—	(73)
Total effect on non-interest income	$ 73	$ 47	$ 14	$ (201)	$ 44	$ 2	$ (39)	$ (60)

	Nine Months Ended September 30, 2017							
	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	$ 344	$ (13)	$ —	$ (16)	$ —	$ —	$ —	$ 315
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	1	2	—	—	3
Gains (losses) related to derivatives not designated as hedging instruments	(17)	(47)	26	57	(38)	(20)	9	(30)
Other(1)	—	—	—	—	—	—	5	5
Total net gains (losses) on derivatives and hedging activities	327	(60)	26	42	(36)	(20)	14	293
Net gains (losses) on trading securities(2)	—	26	—	—	—	—	—	26
Net gains (losses) on financial instruments held at fair value	2	—	(2)	(20)	—	—	—	(20)
Total effect on non-interest income	$ 329	$ (34)	$ 24	$ 22	$ (36)	$ (20)	$ 14	$ 299

(1) Amount in intermediary positions and other includes the price alignment amount on derivatives for which variation margin is characterized as a daily settled contract.
(2) Includes only those gains (losses) on trading securities that have an assigned economic derivative; therefore, this line item may not agree to the Combined Statement of Income.

Net gains on derivatives and hedging activities were $24 million and $116 million for the three and nine months ended September 30, 2018, resulting primarily from gains related to fair value hedge ineffectiveness and derivatives not designated as qualifying accounting hedges under GAAP.

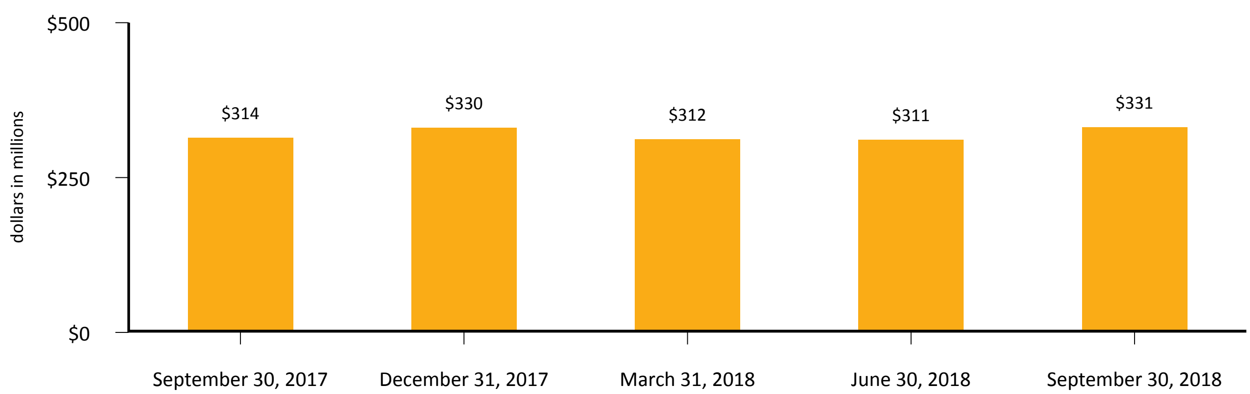
Net gains on derivatives and hedging activities were $293 million for the nine months ended September 30, 2017, consisting primarily of gains related to fair value hedge ineffectiveness driven by gains resulting from prepayments of certain previously restructured and hedged advances recorded by the FHLBank of Atlanta during the first quarter of 2017. However, this gain was offset by $302 million of accelerated amortization included in net interest income during the first quarter of 2017. (See *Table 21*, which presents the effect of derivatives and hedging activities on net interest income.)

Gains on Litigation Settlement, Net. Certain of the FHLBanks agreed to settle certain claims arising from investments in private-label mortgage-backed securities. Gains on litigation settlements, net of related legal expenses were $13 million and $14 million for the three and nine months ended September 30, 2018, due primarily to the FHLBank of Boston's litigation settlement during the third quarter of 2018. Gains on litigation settlements, net of related legal expenses were less than $1 million and $139 million for the three and nine months ended September 30, 2017 resulting primarily from the FHLBank of San Francisco's recognition of settlements resulting in a net gain of $119 million during the first quarter of 2017.

Non-Interest Expense

Non-interest expense consists of compensation and benefits, other operating expenses, FHFA expenses, Office of Finance expenses, and other expenses. Figure 18 presents non-interest expense for the most recent five quarters.

Figure 18: Non-Interest Expense



Non-interest expense was $331 million for the three months ended September 30, 2018, an increase of $17 million compared to the same period in 2017. Non-interest expense was $954 million for the nine months ended September 30, 2018, a decrease of $52 million compared to the same period in 2017. The decrease for the nine months ended September 30, 2018, was primarily the result of expenses incurred during the first quarter of 2017 related to a charge of $70 million by the FHLBank of New York to settle all claims related to the 2008 Lehman Brothers bankruptcy, recorded in other expenses.

Table 24 - Changes in Non-Interest Expense
(dollars in millions)

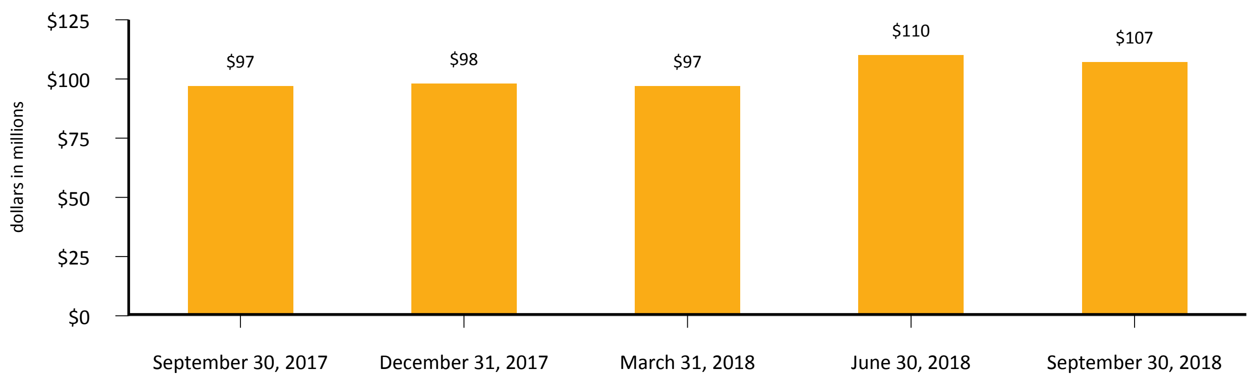
	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	Change	2018	2017	Change
Compensation and benefits	$ 181	$ 165	$ 16	$ 515	$ 483	$ 32
Other operating expenses	108	100	8	305	287	18
Federal Housing Finance Agency	15	16	(1)	47	48	(1)
Office of Finance	14	12	2	42	38	4
Other expenses	13	21	(8)	45	150	(105)
Total non-interest expense	$ 331	$ 314	$ 17	$ 954	$ 1,006	$ (52)

Affordable Housing Program (AHP) Assessments

By regulation, the FHLBanks must annually set aside for the AHP the greater of the aggregate of $100 million or 10% of the individual FHLBank's income subject to assessment. 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 19 presents AHP assessments for the most recent five quarters.

Figure 19: Affordable Housing Program Assessments



Interbank Transfers of Consolidated Bonds and Their Effect on Combined Net Income

Combined net income of the FHLBanks is affected by interbank transfers of the liability on outstanding consolidated bonds. These transactions arise when one FHLBank transfers its direct liability on outstanding consolidated bonds to another FHLBank. By engaging in these transactions, two FHLBanks are able to better match their funding needs by transferring funds held by one FHLBank to another FHLBank that needs funds. Because the consolidated bonds are joint and several obligations of all FHLBanks, these interbank transactions have no effect on the holders of the consolidated bonds.

There were no interbank transfers of consolidated obligations during the nine months ended September 30, 2018 and 2017. The amount of total interbank consolidated bonds transferred during a period depends on a variety of factors, including (1) whether an assuming FHLBank can obtain equal or lower funding costs through interbank transfers as compared to issuing new debt, (2) an FHLBank's overall asset/liability management strategy, and (3) current market conditions.

The transferring FHLBank treats the transfer as a debt extinguishment because that FHLBank has been released from being the primary obligor. The transferring FHLBank records a gain or loss on the debt transferred to the assuming FHLBank based on the difference between the fair value and the carrying value of the consolidated bonds, including any unamortized premiums or discounts. The assuming FHLBank becomes the primary obligor because it is now directly responsible for repaying the debt. The assuming FHLBank records the fair value, including any premium or discount, as the initial carrying amount for the consolidated bond it received from the transferring FHLBank. However, under the principles of combination accounting, interbank eliminations are required to reflect the transaction as if the transferring FHLBank continues to hold the consolidated bond for purposes of the FHLBanks' combined financial statements.

Table 25 presents the effect of interbank eliminations and rounding adjustments (collectively referred to as combining adjustments) on the Combined Statement of Income. Interbank eliminations include:

- transfers of interbank consolidated bond liabilities;
- interest on purchased consolidated bonds, which is eliminated in interest income and interest expense; and
- fees related to the MPF Program that are eliminated in non-interest income and non-interest expense.

Table 25 - Effect of Combining Adjustments on Combined Statement of Income
(dollars in millions)

Effect on	Three Months Ended September 30, 2018	Three Months Ended September 30, 2017	Nine Months Ended September 30, 2018	Nine Months Ended September 30, 2017
Interest income	$ (2)	$ 1	$ (3)	$ (3)
Interest expense	(3)	2	(2)	6
Provision (reversal) for credit losses	1	(1)	(1)	(1)
Net interest income after provision (reversal) for credit losses	—	—	—	(8)
Non-interest income	(8)	(6)	(23)	(14)
Non-interest expense	(8)	(3)	(20)	(14)
Affordable Housing Program assessments	—	(1)	—	1
Net income	$ —	$ (2)	$ (3)	$ (9)

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 $55 million and $142 million for the three and nine months ended September 30, 2018, decreases of $131 million and $643 million compared to the same periods in 2017, due primarily to fair value losses on AFS securities, partially offset by higher net unrealized gains related to cash flow hedging activities.

Table 26 - Comprehensive Income
(dollars in millions)

	Three Months Ended September 30,			Nine Months Ended September 30,		
	2018	2017	Change	2018	2017	Change
Net income	$ 942	$ 854	$ 88	$ 2,771	$ 2,510	$ 261
Other comprehensive income						
Changes in fair value of AFS securities						
Net unrealized gains (losses) on AFS securities	(27)	23	(50)	(139)	379	(518)
Net change in fair value of other-than-temporarily impaired AFS securities	(3)	85	(88)	6	211	(205)
Total changes in fair value of AFS securities	(30)	108	(138)	(133)	590	(723)
Changes in non-credit OTTI losses						
Net amount of AFS and HTM impairment losses reclassified to (from) non-interest income	—	7	(7)	(9)	12	(21)
Non-credit losses included in basis of HTM securities sold	4	—	4	4	—	4
Reclassification of (gains) losses of the non-credit portion on AFS securities included in net income	—	—	—	(32)	—	(32)
Accretion of non-credit portion on HTM securities	18	19	(1)	53	64	(11)
Total changes in non-credit OTTI losses	22	26	(4)	16	76	(60)
Net unrealized gains (losses) relating to hedging activities	61	48	13	261	112	149
Other	2	4	(2)	(2)	7	(9)
Total other comprehensive income (loss)	55	186	(131)	142	785	(643)
Comprehensive income	$ 997	$ 1,040	$ (43)	$ 2,913	$ 3,295	$ (382)

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 accretion of the non-credit portion on HTM securities, the reclassification of (gains) losses of the non-credit portion on AFS securities included in net income, and the net amount of AFS and HTM impairment losses reclassified to (from) non-interest income.

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.

Reclassification of (Gains) Losses of the Non-credit Portion on AFS Securities Included in Net Income. For AFS securities that had experienced OTTI in previous periods, these reclassifications represent the remaining non-credit portion of OTTI losses in AOCI that are recognized in net income upon the sale of the securities.

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 from AOCI to earnings.

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 rating 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 October 31, 2018, 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. However, during the nine months ended September 30, 2018, 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. Access to short-term debt markets has been supported by strong demand, as investors, driven by increased liquidity preferences and risk aversion, including the effects of money market fund reform, have sought the FHLBanks' short-term debt as an asset of choice. 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, 2017.)

Interest-Rate Risk. The FHLBanks may use a portion of the short-term consolidated obligations issued to fund both short- and long-term LIBOR-indexed assets. However, funding longer-term LIBOR-indexed assets with shorter-term liabilities generally does not expose the FHLBanks to interest-rate risk because the rates on the LIBOR-indexed 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 liquidity balance and a funding balance between its financial assets and financial liabilities, and the FHLBanks work collectively to manage system-wide liquidity and funding needs. The FHLBanks jointly monitor the combined risks, primarily by tracking the maturities of financial assets and financial liabilities. The FHLBanks monitor the funding balance between financial assets and financial liabilities and are committed to prudent risk management practices. External factors, including FHLBank member borrowing needs, supply and demand in the debt markets, and other factors may affect liquidity balances and the funding balances between 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.

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

- 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 these two hypothetical scenarios.

    - The first scenario assumes that an FHLBank cannot access the capital markets for a period of between 10 to 20 days, with initial guidance set at 15 days, and that during that time members do not renew any maturing, prepaid, or called advances.

    - The second scenario assumes that an FHLBank cannot access the capital markets for a period of between three to seven days, with initial guidance set at five days, and that during that period an FHLBank will automatically renew maturing and called advances for all members except very large members, provided that the member is well-rated by its primary Federal regulator or its state regulator equivalent for insurance companies, and is well-rated by the individual FHLBank's internal credit rating system.

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.

During the nine months ended September 30, 2018, each of the FHLBanks was in compliance with the FHFA's regulatory liquidity requirements. On August 23, 2018, FHFA issued Advisory Bulletin 2018-07 FHLBank Liquidity Guidance, effective for the FHLBanks beginning December 31, 2018, with further implementation on March 31, 2019, and full implementation on December 31, 2019. See *Legislative and Regulatory Developments* for additional information.

Capital Resources

At September 30, 2018, each FHLBank was in compliance with its statutory minimum 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. (See *Note 13 - Capital* to the accompanying combined financial statements for more information, including risk-based and minimum regulatory capital requirements.)

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, 2017, 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* on pages F-13 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, 2017.

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, 2017. 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 89 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017. Each FHLBank describes its critical accounting estimates in its periodic reports filed with the SEC.

See the following for information relating to OTTI for investment securities at and for the three months ended September 30, 2018.

OTTI for Investment Securities

Uniform OTTI Framework. The FHLBanks have developed a uniform framework for completing their OTTI analyses in compliance with accounting guidance on the recognition and presentation of OTTI in the financial statements. To ensure consistency in the determination of OTTI for private-label MBS among all FHLBanks, the FHLBanks use a system-wide governance committee and a formal process to ensure consistency in key OTTI modeling assumptions used for purposes of their cash flow analyses for the majority of these securities.

For a detailed discussion of the FHLBanks' uniform OTTI frameworks, including alternative procedures and approved key assumptions, see *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Critical Accounting Estimates* on pages 81 to 83 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017. (Also, see *Note 6 - Other-than-Temporary Impairment Analysis* to the accompanying combined financial statements for additional information relating to OTTI, including the recognition and presentation of OTTI.)

Table 27 presents the unpaid principal balances and the significant inputs used to assess private-label residential MBS and home equity loan ABS under the FHLBanks' uniform framework for OTTI, as well as related current credit enhancements as of September 30, 2018. The calculated averages represent the dollar-weighted averages of all private-label residential MBS and home equity loan ABS in each category shown.

Table 27 - Significant Inputs for Private-Label Residential MBS and Home Equity Loan ABS at September 30, 2018
(dollars in millions)

	Unpaid Principal Balance	Significant Inputs			Current Credit Enhancement
		Prepayment Rates	Default Rates	Loss Severities	
		Weighted-Average	Weighted-Average	Weighted-Average	Weighted-Average
Private-label Residential MBS(1)					
Prime	$ 1,938	16.2%	8.8%	25.2%	8.9%
Alt-A	6,111	12.8%	21.5%	36.5%	6.3%
Subprime	326	2.7%	36.9%	52.7%	15.3%
Total private-label residential MBS	$ 8,375	13.2%	19.1%	34.5%	7.3%
Home Equity Loan ABS(1)					
Subprime	$ 24	4.0%	7.0%	41.0%	53.4%
Total home equity loan ABS	$ 24	4.0%	7.0%	41.0%	53.4%

(1) The classification (prime, Alt-A, and subprime) is based on the model used to run the estimated cash flows for the individual securities, which may not necessarily be the same as the classification at the time of origination.

Adverse Case Scenario. In addition to evaluating its private-label MBS under a base case (or best estimate) scenario as discussed in *Note 6 - Other-than-Temporary Impairment Analysis* to the accompanying combined financial statements, each FHLBank performed a cash flow analysis for each of these securities under a more stressful scenario, or adverse case scenario. This adverse case scenario was primarily based on a short-term housing price forecast, which was five percentage points lower than the base case, followed by a path with annual rates of housing price growth that included rates which were 33% lower than the base case. The credit losses on all other-than-temporarily impaired private-label MBS under the base case and adverse case scenarios were $5 million and $6 million for the three months ended September 30, 2018. The base case scenario represents actual OTTI-related credit losses recognized in earnings for the three months ended September 30, 2018.

The estimated cash flows of the adverse case scenario were generated to estimate what the OTTI charges would have been under a more stressful scenario for the three months ended September 30, 2018. The adverse case scenario and associated results do not represent each FHLBank's current expectations, and therefore should not be construed as a prediction of each FHLBank's future results, market conditions, or the actual performance of these securities. Rather, the results from this hypothetical adverse case scenario provide a measure of the credit losses that the FHLBanks might incur if home price declines (and subsequent recoveries) are more adverse than those projected in each FHLBank's base case OTTI assessment.

Recent Accounting Developments

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

Legislative and Regulatory Developments

Certain regulatory actions and developments are summarized in this section. (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Legislative and Regulatory Developments* in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017 (pages 89 to 90) and the quarterly periods ended March 31, 2018 (page 37) and June 30, 2018 (pages 40 to 41), for a description of certain legislative and regulatory developments that occurred prior to the publication of these reports.)

Office of the Comptroller of the Currency, Federal Reserve Board, FDIC, Farm Credit Administration, and FHFA Final Rule on Margin and Capital Requirements for Covered Swap Entities. On October 10, 2018, the Office of the Comptroller of the Currency (OCC), Federal Reserve Board (FRB), FDIC, Farm Credit Administration, and FHFA published final amendments to each agency's final rule on Margin and Capital Requirements for Covered Swap Entities (Swap Margin Rules) to conform the definition of "eligible master netting agreement" in such rules to the OCC's, FRB's, and FDIC's final qualified financial contract rules. The final rule also clarifies that a legacy swap would not be deemed to be a covered swap under the Swap Margin Rules if it is amended solely to conform to the qualified financial contract rules. The qualified financial contract rules previously published by the OCC, FRB, and FDIC require their respective regulated entities to amend covered qualified financial contracts to limit a counterparty's immediate termination or exercise of default rights in the event of bankruptcy or receivership of the regulated entity or its affiliate(s). The final rule became effective November 9, 2018. The FHLBanks do not expect this rule to materially affect the FHLBanks' combined financial condition or combined results of operations.

Final Rule on Indemnification Payments. On October 4, 2018, the FHFA published a final rule establishing standards for identifying when an indemnification payment by an FHLBank or the Office of Finance to an officer, director, employee, or other affiliated party in connection with an administrative proceeding or civil action instituted by the FHFA is prohibited or permissible. The rule generally prohibits these payments except in the following circumstances:

- premiums for any commercial insurance or fidelity bonds for directors and officers, to the extent that the insurance or fidelity bond covers expenses and restitution, but not a judgment in favor of the FHFA or a civil money penalty imposed by the FHFA;

- expenses of defending an action, subject to (i) the relevant FHLBank's or the Office of Finance's board of directors conducting a due investigation and making a written determination, in good faith, that the affiliated party acted in good faith and in a manner that he or she reasonably believed to be in the best interests of the FHLBank or the Office of Finance and such payments will not materially adversely affect the safety and soundness of the FHLBank or the Office of Finance (as the case may be) and (ii) an agreement to repay those expenses in certain instances; and

- amounts due under an indemnification agreement entered into with a named affiliated party on or prior to September 20, 2016 (the date the rule was proposed).

The rule became effective November 5, 2018. The FHLBanks do not expect the rule will materially affect the FHLBanks.

Proposed Amendment to Rule Regarding Golden Parachute and Indemnification Payments. On August 28, 2018, the FHFA proposed amending its rule on golden parachute payments (Golden Parachute Rule) to better align the Golden Parachute Rule with areas of the FHFA's supervisory concern and reduce administrative and compliance burdens. The Golden Parachute Rule sets forth the standards that the FHFA would take into consideration when limiting or prohibiting golden parachute and indemnification payments by an FHLBank or the Office of Finance to an entity-affiliated party when such entity is in troubled condition, in conservatorship or receivership, or insolvent. The proposed amendments would:

- Focus these standards on payments to and agreements with executive officers, broad-based plans, such as severance plans, covering large numbers of employees, and payments made to non-executive-officer employees who may have engaged in certain types of wrongdoings;

- Revise and clarify definitions, exemptions, and procedures to implement the FHFA's supervisory approach; and

- Align procedures and outcomes of review with requirements of the FHFA’s rule on executive compensation.

Comments on the proposed rule were due by October 12, 2018. Ten of the FHLBanks and the Office of Finance provided a joint comment letter on October 12, 2018, related to clarifying certain provisions of the proposed amendment. The FHLBanks are currently assessing the effect of the proposed rule but do not anticipate that, if adopted, it would materially affect the FHLBanks.

Advisory Bulletin (AB) 2018-07 FHLBank Liquidity Guidance (Liquidity Guidance AB). On August 23, 2018, the FHFA issued a final AB on FHLBank liquidity that communicates the FHFA's expectations with respect to the maintenance of sufficient liquidity to enable the FHLBanks to provide advances and letters of credit for members for a specified time without access to the capital markets or other unsecured funding sources. The Liquidity Guidance AB rescinds 2009 liquidity guidance previously issued by the FHFA. Contemporaneously with the issuance of the Liquidity Guidance AB, the FHFA issued a supervisory letter that identifies initial thresholds for measures of liquidity.

The Liquidity Guidance AB provides guidance on the level of on-balance sheet liquid assets related to base case liquidity. As part of the base case liquidity measure, the guidance also includes a separate provision covering off-balance sheet commitments from standby letters of credit. In addition, the Liquidity Guidance AB provides guidance related to asset/liability maturity funding gap limits.

With respect to base case liquidity, the FHFA revised previous guidance that required the FHLBanks to assume a 5-day period without access to capital markets due to a change in certain assumptions underlying that guidance. Under the Liquidity Guidance AB, FHLBanks would be required to hold positive cash flow assuming no access to capital markets for an increased period of between ten and thirty calendar days, with a specific measurement period set forth in the supervisory letter. The Liquidity Guidance AB also sets forth the initial cash flow assumptions and formula to calculate base case liquidity. With respect to standby letters of credit, the guidance states that FHLBanks should maintain a liquidity reserve of between 1% and 20% of its outstanding standby letters of credit commitments, as specified in the supervisory letter.

With respect to funding gaps and possible asset and liability mismatches, the Liquidity Guidance AB provides guidance on maintaining appropriate funding gaps for three month (-10% to -20%) and one year (-25% to -35%) maturity horizons, with specific initial percentages within these ranges identified in the supervisory letter. The Liquidity Guidance AB provides for these limits to reduce the liquidity risks associated with a mismatch in asset and liability maturities, including an undue reliance on short term debt funding, which may increase debt rollover risk.

The Liquidity Guidance AB also addresses liquidity stress testing, contingency funding plans, and an adjustment to the FHLBanks' core mission achievement calculation. Portions of the Liquidity Guidance AB will be implemented beginning December 31, 2018, with further implementation on March 31, 2019, and full implementation on December 31, 2019. While the FHLBanks are still analyzing the effect of the Liquidity Guidance AB, it may require the FHLBanks to hold an additional amount of liquid assets to meet the new guidance, which could reduce the FHLBanks' ability to invest in higher-yielding assets. Further, the FHLBanks' cost of funding may increase if they are required to achieve the appropriate funding gap with longer term funding.

External Credit Ratings

Since December 31, 2017, no changes to external credit ratings have occurred with regard to the FHLBanks or their consolidated obligations. At October 31, 2018, consolidated obligations were rated Aaa/P-1 by Moody's and AA+/A-1+ by S&P, with outlook stable. Moody's, 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. 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 28 presents each FHLBank's long-term credit rating, short-term credit rating, and outlook at October 31, 2018.

Table 28 - FHLBanks' Long-Term Credit Ratings, Short-Term Credit Ratings, and Outlook at October 31, 2018

	Moody's		S&P	
FHLBank	Long-Term/ Short-Term Rating	Outlook	Long-Term/ Short-Term Rating	Outlook
Boston	Aaa/P-1	Stable	AA+/A-1+	Stable
New York	Aaa/P-1	Stable	AA+/A-1+	Stable
Pittsburgh	Aaa/P-1	Stable	AA+/A-1+	Stable
Atlanta	Aaa/P-1	Stable	AA+/A-1+	Stable
Cincinnati	Aaa/P-1	Stable	AA+/A-1+	Stable
Indianapolis	Aaa/P-1	Stable	AA+/A-1+	Stable
Chicago	Aaa/P-1	Stable	AA+/A-1+	Stable
Des Moines	Aaa/P-1	Stable	AA+/A-1+	Stable
Dallas	Aaa/P-1	Stable	AA+/A-1+	Stable
Topeka	Aaa/P-1	Stable	AA+/A-1+	Stable
San Francisco	Aaa/P-1	Stable	AA+/A-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, 2017, for more information.)

Each of the FHLBanks and the Office of Finance rely heavily on their information systems and other technology to conduct and manage their business. Like many companies and government entities, the FHLBanks and the Office of Finance may be the subject of cyber attacks and other information security threats. Each of the FHLBanks and the Office of Finance have controls in place to help ensure that information technology assets are well managed and secure from unauthorized access, and to identify information security events.

Each of the FHLBanks and the Office of Finance have established policies and procedures, including board oversight and escalation practices, to evaluate, manage, and control their risks. Each FHLBank must also file periodic compliance reports with the FHFA. The FHFA has established rules, regulations, and guidance governing the risk management practices of the FHLBanks and the Office of Finance, and conducts an annual on-site examination, interim on-site visits, as well as off-site analyses of each FHLBank and the Office of Finance.

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 September 30, 2018, 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 September 30, 2018, 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 91 to 95 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, for information on eligible collateral and effective lending values.)

As of September 30, 2018, there were 110 individual FHLBank borrowers (109 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 September 30, 2018, which represents the total of these 110 individual FHLBank borrowers' eligible collateral divided by these borrowers' advances and other credit products outstanding. The collateralization ratio for all borrowers was 3.1 at September 30, 2018. However, individual borrower credit obligations to the FHLBanks are not cross-collateralized between borrowers.

Table 29 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 29 - Advances, Other Credit Products, and Collateral Outstanding at September 30, 2018
(dollars in millions)

	Borrowers with at Least $1.0 Billion of Advances Outstanding	All Borrowers	Percentage
Advances outstanding, principal amount	$ 501,366	$ 708,591	70.8%
Other credit products	$ 82,037	$ 152,405	53.8%
Collateral outstanding	$ 1,571,660	$ 2,693,770	58.3%

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

Table 30 - Type of Collateral Securing Advances and Other Credit Products Outstanding at September 30, 2018
(dollars in millions)

	Blanket Lien		Listing		Delivery		Total	
Collateral Type	**Amount**	**Percentage**	**Amount**	**Percentage**	**Amount**	**Percentage**	**Amount**	**Percentage**
Single-family mortgage loans(1)	$ 493,746	18.3%	$ 884,534	32.8%	$ 38,567	1.4%	$ 1,416,847	52.5%
Commercial real estate loans	367,592	13.7%	149,908	5.6%	31,938	1.2%	549,438	20.5%
Multifamily mortgage loans	71,658	2.7%	156,240	5.8%	14,904	0.6%	242,802	9.1%
Home equity loans and lines of credit	89,723	3.3%	90,517	3.4%	37	—	180,277	6.7%
U.S. agency MBS and CMOs	—	N/A	—	N/A	112,676	4.2%	112,676	4.2%
Other real estate loans	56,954	2.1%	7,669	0.3%	3,753	0.1%	68,376	2.5%
CFI loans	37,468	1.4%	1,867	0.1%	15	—	39,350	1.5%
Commercial MBS	—	N/A	—	N/A	24,852	0.9%	24,852	0.9%
U.S. agency securities (excluding MBS)	—	N/A	—	N/A	22,549	0.8%	22,549	0.8%
U.S. obligations	—	N/A	—	N/A	15,414	0.6%	15,414	0.6%
Private-label MBS and CMOs	—	N/A	—	N/A	5,542	0.2%	5,542	0.2%
Other	841	—	436	—	14,370	0.5%	15,647	0.5%
Total collateral	$ 1,117,982	41.5%	$ 1,291,171	48.0%	$ 284,617	10.5%	$ 2,693,770	100.0%

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

Investments. The FHLBanks are subject to credit risk on investments consisting of investment securities, interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold. These investments are generally transacted with government agencies and large financial institutions that are considered by an individual FHLBank to be of investment quality. FHFA regulation defines investment quality as a determination by an FHLBank, with respect to a security, that there is adequate financial backing so that full and timely payment of principal and interest on such a security is expected, and 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 95 to 96 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, 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. Table 31 presents the credit rating of the investment securities held by the FHLBanks as of September 30, 2018 and December 31, 2017, 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.

Table 31 - Investment Ratings
(dollars in millions)

	September 30, 2018(1)(2)						
Carrying Value	Triple-A	Double-A	Single-A	Triple-B	Below Triple-B	Unrated	Total
Interest-bearing deposits	$ —	$ 2,023	$ 11,549	$ 47	$ —	$ —	$ 13,619
Securities purchased under agreements to resell	2,275	15,963	6,400	9,399	2,445	8,825	45,307
Federal funds sold	—	18,013	51,599	2,975	—	143	72,730
Total investment securities by major security type							
Non-mortgage backed securities							
Certificates of deposit	—	300	2,710	—	—	—	3,010
U.S. obligations	3,878	9,290	—	—	—	—	13,168
GSE and Tennessee Valley Authority obligations	—	19,557	—	—	—	—	19,557
State or local housing agency obligations	1,282	1,807	181	53	—	—	3,323
Federal Family Education Loan Program ABS	36	3,865	—	—	—	—	3,901
Other	998	97	—	—	—	10	1,105
Total non-mortgage-backed securities	6,194	34,916	2,891	53	—	10	44,064
Mortgage-backed securities							
U.S. obligations single-family MBS	142	12,540	—	—	—	—	12,682
U.S. obligations multifamily MBS	—	369	—	—	—	—	369
GSE single-family MBS	—	40,020	6	—	4	—	40,030
GSE multifamily MBS	593	81,584	—	—	—	—	82,177
Private-label residential MBS	3	65	95	558	5,395	1,038	7,154
Manufactured housing loan ABS	—	—	38	—	—	—	38
Home equity loan ABS	1	2	71	10	31	—	115
Total mortgage-backed securities	739	134,580	210	568	5,430	1,038	142,565
Total investment securities	6,933	169,496	3,101	621	5,430	1,048	186,629
Total investments	$ 9,208	$ 205,495	$ 72,649	$ 13,042	$ 7,875	$ 10,016	$ 318,285

Carrying Value	December 31, 2017(2)(3) Triple-A	Double-A	Single-A	Triple-B	Below Triple-B	Unrated	Total
Interest-bearing deposits	$ —	$ 1,747	$ 3,627	$ 46	$ —	$ —	$ 5,420
Securities purchased under agreements to resell	2,100	36,907	2,500	6,699	500	3,862	52,568
Federal funds sold	—	27,354	33,620	4,329	—	227	65,530
Total investment securities by major security type							
Non-mortgage backed securities							
Certificates of deposit	—	1,235	925	—	—	—	2,160
U.S. obligations	1,285	5,842	—	—	—	—	7,127
GSE and Tennessee Valley Authority obligations	—	24,167	—	—	—	—	24,167
State or local housing agency obligations	1,438	1,833	309	—	—	—	3,580
Federal family education loan program ABS	41	4,173	—	—	—	—	4,214
Other	1,044	100	—	—	—	71	1,215
Total non-mortgage-backed securities	3,808	37,350	1,234	—	—	71	42,463
Mortgage-backed securities							
U.S. obligations single-family MBS	172	12,723	—	—	—	—	12,895
U.S. obligations multifamily MBS	—	446	—	—	—	—	446
GSE single-family MBS	—	42,785	7	—	5	—	42,797
GSE multifamily MBS	577	75,586	—	—	—	—	76,163
Private-label residential MBS	3	69	90	681	7,240	727	8,810
Manufactured housing loan ABS	—	—	54	—	—	—	54
Home equity loan ABS	1	3	71	20	39	—	134
Total mortgage-backed securities	753	131,612	222	701	7,284	727	141,299
Total investment securities	4,561	168,962	1,456	701	7,284	798	183,762
Total investments	$ 6,661	$ 234,970	$ 41,203	$ 11,775	$ 7,784	$ 4,887	$ 307,280

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after September 30, 2018.
(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, 2017.

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.

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 32 presents collateral performance and credit enhancement information related to private-label mortgage-backed securities at September 30, 2018. No FHLBank has purchased private-label mortgage-backed securities since 2008.

Table 32 - Credit Ratings of Private-Label Mortgage-Backed Securities at September 30, 2018
(dollars in millions)

	Total	Prime(1)	Alt-A(1)(2)	Subprime(1)
Unpaid Principal Balance (UPB) by credit rating(3)				
Triple-A	$ 4	$ —	$ 3	$ 1
Double-A	68	43	21	4
Single-A	207	47	45	115
Triple-B	568	442	107	19
Double-B	673	416	230	27
Single-B	565	222	334	9
Triple-C	3,887	922	2,950	15
Double-C	805	31	522	252
Single-C	165	—	111	54
Single-D	374	151	206	17
Unrated	1,300	749	550	1
Total	$ 8,616	$ 3,023	$ 5,079	$ 514
Amortized cost	$ 7,044	$ 2,656	$ 4,058	$ 330
Gross unrealized losses(4)	(151)	(97)	(23)	(31)
Fair value	7,894	2,876	4,580	438
Weighted-average percentage				
Fair value to UPB	91.6%	95.1%	90.2%	85.2%
Original credit support(5)	20.1%	11.4%	23.6%	36.3%
Remaining credit support(6)	8.0%	7.1%	7.0%	24.2%
Collateral delinquency(7)	13.4%	10.9%	14.2%	20.3%

(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 $1,215 million in Alt-A option adjustable-rate mortgages, of which $197 million are in a gross unrealized loss position based on their unpaid principal balance at September 30, 2018.

(3) Represents the lowest rating available at September 30, 2018, 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 $1,797 million and $1,503 million at September 30, 2018.

(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) Weighted-average credit support is based on the credit support as of September 30, 2018, and is determined based on the unpaid principal balance of the individual securities in the category and their respective credit support as of September 30, 2018.

(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 the affected 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 and therefore excluded from the burnout period analysis. Conversely, the key burnout period for 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 established a burnout period ending on September 30, 2024, and in the first quarter of 2018, increased the expected reimbursement rate from 45% to 100% of new claims during the burnout period.

As of September 30, 2018, total monoline bond insurance coverage was $179 million, of which $163 million represents the FHLBanks' private-label MBS covered by the monoline bond insurance that the FHLBanks were relying on at September 30, 2018, for modeling cash flows. Of the $163 million, 76.7% represents subprime loans and 23.3% 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 33 presents the FHLBanks' unsecured credit exposure with private counterparties by investment type. At September 30, 2018, the FHLBanks had aggregate unsecured credit exposure from investments of $1 billion or more to each of 28 private counterparties. The aggregate unsecured credit exposure to these counterparties represented 79.0% of the FHLBanks' total unsecured investment credit exposure to private counterparties. The unsecured investment credit exposure presented in Table 33 does not reflect the average or maximum exposure during the period, as the balances presented reflect the balances at period end.

Table 33 - Unsecured Credit Exposure by Investment Type
(dollars in millions)

Carrying Value(1)(2)	September 30, 2018	December 31, 2017
Interest-bearing deposits	$ 13,618	$ 5,420
Federal funds sold	72,730	65,530
Certificates of deposit	3,010	2,160
Total	$ 89,358	$ 73,110

(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 September 30, 2018, 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 September 30, 2018, an FHLBank held full faith and credit U.S. guaranteed securities with foreign issuers totaling $436 million. Other than these investments, the FHLBanks are in compliance with the FHFA regulation as of September 30, 2018.

As of September 30, 2018, 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 September 30, 2018, 69.6% of the FHLBanks' unsecured investments in federal funds sold and all of the FHLBanks' unsecured investments in certificates of deposit were to U.S. branches and agency offices of foreign commercial banks.

Table 34 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.

Table 34 - Ratings of Unsecured Investment Credit Exposure by Domicile of Counterparty at September 30, 2018(1)
(dollars in millions)

	Investment Grade				
Carrying Value(2)	**Double-A**	**Single-A**	**Triple-B**	**Unrated**	**Total**
Domestic	$ 4,023	$ 28,529	$ 3,021	$ 143	$ 35,716
U.S. branches and agency offices of foreign commercial banks					
Canada	1,900	14,319	—	—	16,219
Australia	8,380	—	—	—	8,380
Sweden	5,033	1,230	—	—	6,263
Netherlands	—	5,815	—	—	5,815
Norway	—	4,550	—	—	4,550
Germany	—	4,230	—	—	4,230
France	—	2,815	—	—	2,815
Austria	—	1,365	—	—	1,365
United Kingdom	—	1,350	—	—	1,350
Singapore	1,000	—	—	—	1,000
Japan	—	820	—	—	820
Switzerland	—	535	—	—	535
Belgium	—	300	—	—	300
Total U.S. branches and agency offices of foreign commercial banks	16,313	37,329	—	—	53,642
Total unsecured investment credit exposure	$ 20,336	$ 65,858	$ 3,021	$ 143	$ 89,358

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(1) Does not reflect any changes in ratings, outlook, or watch status occurring after September 30, 2018. The ratings presented in this table represent the lowest long-term rating available 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.

(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 35 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 September 30, 2018, 91.2% of the carrying value of the total unsecured investments held by the FHLBanks had overnight maturities.

Table 35 - Contractual Maturity of Unsecured Investment Credit Exposure by Domicile of Counterparty at September 30, 2018
(dollars in millions)

Carrying Value(1)	Overnight	Due 2 days through 30 days	Due 31 days through 90 days	Total
Domestic	$ 35,716	$ —	$ —	$ 35,716
U.S. branches and agency offices of foreign commercial banks				
Canada	14,119	1,500	600	16,219
Australia	7,165	430	785	8,380
Sweden	5,523	350	390	6,263
Netherlands	5,715	—	100	5,815
Norway	4,075	50	425	4,550
Germany	2,905	500	825	4,230
France	2,630	185	—	2,815
Austria	1,365	—	—	1,365
United Kingdom	1,350	—	—	1,350
Singapore	200	—	800	1,000
Japan	700	120	—	820
Switzerland	—	—	535	535
Belgium	—	—	300	300
Total U.S. branches and agency offices of foreign commercial banks	45,747	3,135	4,760	53,642
Total unsecured investment credit exposure	$ 81,463	$ 3,135	$ 4,760	$ 89,358

(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 AMA 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 enhanced the credit risk-sharing requirement by allowing an FHLBank to utilize its own model and methodology to determine the credit enhancement for AMA loans in lieu of a nationally recognized statistical rating organization ratings model. The loans delivered must now be credit enhanced by the members up to an FHLBank determined "AMA investment-grade" category instead of a specific nationally recognized statistical rating organization's rating.

Management at each FHLBank believes that it has adequate policies and procedures in place to manage credit risk on mortgage loans. (See *Note 9 - Allowance for Credit Losses* to the accompanying combined financial statements for additional information about mortgage loan credit quality indicators and the allowance for credit losses.)

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 104 to 109 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2017, 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 September 30, 2018.

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 September 30, 2018.

Table 36 presents the derivative positions with non-member counterparties and member institutions to which the FHLBanks had credit exposure at September 30, 2018.

Table 36 - Derivative Counterparty Credit Exposure at September 30, 2018
(dollars in millions)

Credit Rating(1)	Notional Amount	Net Derivatives Fair Value Before Collateral	Cash Collateral Pledged To (From) Counterparties	Non-cash Collateral Pledged To (From) Counterparties	Net Credit Exposure to Counterparties
Non-member counterparties					
Asset positions with credit exposure					
Uncleared derivatives					
Double-A	$ 300	$ 8	$ —	$ —	$ 8
Single-A	18,642	248	(114)	(101)	33
Triple-B	8,399	17	(14)	—	3
Cleared derivatives(2)	41,434	3	21	34	58
Liability positions with credit exposure					
Uncleared derivatives					
Double-A	2,533	(21)	22	—	1
Single-A	34,341	(389)	399	6	16
Triple-B	12,367	(163)	157	10	4
Cleared derivatives(2)	324,562	(55)	824	1,101	1,870
Total derivative positions with credit exposure to non-member counterparties	442,578	(352)	1,295	1,050	1,993
Member institutions(3)	530	1	—	—	1
Total	$ 443,108	$ (351)	$ 1,295	$ 1,050	$ 1,994

(1) This table does not reflect any changes in rating, outlook, or watch status occurring after September 30, 2018. 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.

(2) Represents derivative transactions cleared with LCH Ltd. and CME Clearing, the FHLBanks' clearinghouses, which are not rated. LCH Ltd.'s ultimate parent, London Stock Exchange Group Plc, is rated A3 by Moody's and A- by S&P. CME Clearing's 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 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, 2017, 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 37 presents each FHLBank that includes quantitative market value of equity and duration of equity information in its individual 2018 Third Quarter SEC Form 10-Q.

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

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

(1) The FHLBank of Pittsburgh monitors and measures market value of equity to par value of capital stock, as described in its 2018 Third 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 2018 Third 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 2018 Third 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 2018 Third 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 38 presents the duration of equity reported by each FHLBank to the FHFA in accordance with the FHFA's guidance, which prescribes that down and up interest-rate shocks equal 200 basis points. However, the applicable guidance restricts the down rate from assuming a negative interest rate. Therefore, each FHLBank adjusts the down rate accordingly in periods of very low levels of interest rates.

Table 38 - Duration of Equity
(in years)

	September 30, 2018			December 31, 2017		
FHLBank	**Down**	**Base**	**Up**	**Down**	**Base**	**Up**
Boston	(3.7)	0.6	2.2	(2.6)	(0.5)	3.2
New York	(1.6)	0.1	0.4	1.8	(0.4)	0.4
Pittsburgh	0.0	0.1	0.6	(0.4)	0.0	0.6
Atlanta	(1.2)	(0.1)	1.6	0.1	0.5	2.5
Cincinnati	(4.3)	1.9	1.0	(5.3)	0.5	1.4
Indianapolis	2.1	2.6	0.8	2.3	2.9	3.7
Chicago	1.5	1.5	2.3	2.9	1.2	2.2
Des Moines	(1.8)	0.8	1.6	(0.2)	1.3	2.7
Dallas	(1.4)	0.4	1.3	0.7	0.0	0.8
Topeka	1.9	1.2	2.9	2.9	(1.5)	2.4
San Francisco	1.7	1.2	2.1	3.8	1.6	2.3

Duration Gap

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

Table 39 - Duration Gap
(in months)

FHLBank	September 30, 2018	December 31, 2017
Boston	0.5	(0.3)
New York	(0.3)	(0.5)
Pittsburgh	(0.2)	(0.2)
Atlanta	(0.1)	0.2
Cincinnati	0.1	0.0
Indianapolis	1.0	1.2
Chicago	1.2	0.9
Des Moines	0.2	0.5
Dallas	0.0	(0.2)
Topeka	0.7	(1.0)
San Francisco	0.7	1.1

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, 2017, 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 concluded, as of December 31, 2017, that its individual internal control over financial reporting is effective based on the criteria established in *Internal Control-Integrated Framework.* Additionally, the independent registered public accounting firm of each FHLBank opined that the individual FHLBank maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017. (See *Part II. Item 8 - Financial Statements and Supplementary Data* or *Item 9A - Controls and Procedures* of each FHLBank's 2017 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 September 30, 2018, that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. Additionally, management of each FHLBank concluded that its disclosure controls and procedures were effective at a reasonable assurance level as of the end of the period covered by its 2018 Third Quarter SEC Form 10-Q. (See *Part I. Item 4 - Controls and Procedures* of each FHLBank's 2018 Third 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 2018 Third 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 September 30, 2018, 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, 2017, except as follows. (See each FHLBank's 2018 Third Quarter SEC Form 10-Q for any updates to the risk factors included in such FHLBank's 2017 SEC Form 10-K under *Part I. Item 1A - Risk Factors*.)

Changes to and replacement of the LIBOR benchmark interest rate could adversely affect the FHLBanks' business, financial condition, and results of operations.

In July 2017, the United Kingdom's Financial Conduct Authority (the FCA), which regulates LIBOR, announced that, after 2021, it will no longer persuade or compel banks to submit rates for the calculation of LIBOR. The FCA’s announcement indicates that the continuation of LIBOR on the current basis cannot and will not be guaranteed after 2021. The FCA has indicated it will support the LIBOR indices through 2021 to allow for an orderly transition to an alternative reference rate(s).

In response, the Federal Reserve Board and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee (ARRC) to identify a set of alternative reference interest rates for possible use as market benchmarks. The ARRC has proposed the Secured Overnight Financing Rate (SOFR) as its recommended alternative to 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.

The FHLBanks are currently evaluating the potential effect of the eventual replacement of the LIBOR benchmark interest rate, including the possibility of SOFR as the dominant replacement. The market transition away from LIBOR and towards SOFR is expected to be complicated, including the development of term and credit adjustments to accommodate differences between LIBOR and SOFR. Introduction of an alternative rate also may introduce additional basis risk for market participants, as an alternative index is utilized along with LIBOR. There can be no guarantee that SOFR will become widely used and that alternatives may or may not be developed with additional complications. The FHLBanks are not able to predict whether LIBOR will cease to be available after 2021, whether SOFR will become a widely accepted benchmark in place of LIBOR, or what the effect of a possible transition to SOFR or an alternate replacement will have on the business, financial condition, and results of operations of an FHLBank or the FHLBanks on a combined basis.

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, 2017. (See each affected FHLBank's 2018 Third Quarter SEC Form 10-Q for any updates to the Loan Rule disclosure included in such FHLBank's 2017 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 September 30, 2018, the FHLBanks had 385 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 40 presents combined regulatory capital stock, which includes mandatorily redeemable capital stock, held by type of member and Table 41 presents FHLBank membership by type of member.

Table 40 - Regulatory Capital Stock Held by Type of Member
(dollars in millions)

	September 30, 2018		December 31, 2017	
	Amount	Percentage of Regulatory Capital Stock	Amount	Percentage of Regulatory Capital Stock
Commercial banks	$ 23,916	62.2%	$ 23,848	61.3%
Savings institutions	4,862	12.6%	5,238	13.4%
Insurance companies	4,578	11.9%	4,331	11.1%
Credit unions	4,048	10.5%	4,231	10.9%
Community development financial institutions	11	—	9	—
Total GAAP capital stock	37,415	97.2%	37,657	96.7%
Mandatorily redeemable capital stock	1,078	2.8%	1,272	3.3%
Total combined regulatory capital stock	$ 38,493	100.0%	$ 38,929	100.0%

Table 41 - Membership by Type of Member

	September 30, 2018		December 31, 2017	
	Number	Percentage of Total Members	Number	Percentage of Total Members
Commercial banks	4,236	61.4%	4,367	62.5%
Credit unions	1,479	21.4%	1,436	20.5%
Savings institutions	704	10.2%	733	10.5%
Insurance companies	426	6.2%	405	5.8%
Community development financial institutions	55	0.8%	48	0.7%
Total	6,900	100.0%	6,989	100.0%

The information on regulatory capital stock presented in Table 42 is accumulated at the holding-company level. The percentage of total regulatory capital stock identified in Table 42 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 42 - Top 10 Regulatory Capital Stockholders by Holding Company at September 30, 2018
(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Regulatory Capital Stock(3)	Percentage of Total Regulatory Capital Stock	Mandatorily Redeemable Capital Stock
Wells Fargo & Company	Des Moines, Dallas, Topeka, San Francisco	$ 1,977	5.1%	$ 20
JPMorgan Chase & Co.	Pittsburgh, Cincinnati, Chicago, Des Moines, San Francisco	1,822	4.7%	483
Bank of America Corporation	Boston, Atlanta, Des Moines, San Francisco	1,245	3.2%	5
Citigroup Inc.	New York, Dallas, San Francisco	1,160	3.0%	—
The PNC Financial Services Group, Inc.	Pittsburgh, Atlanta, Cincinnati	1,003	2.6%	16
MetLife, Inc.	Boston, New York, Pittsburgh, Des Moines	821	2.1%	52
U.S. Bancorp	Cincinnati, Des Moines, Topeka	755	2.0%	1
Ally Financial Inc.	Pittsburgh	732	1.9%	—
New York Community Bancorp, Inc.	New York	655	1.7%	—
Navy Federal Credit Union	Atlanta	570	1.5%	—
		$ 10,740	27.8%	$ 577

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

(2) At September 30, 2018, 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 September 30, 2018			
Assets			
Investments(2)	$ 19,322	$ 42,177	$ 20,321
Advances	40,928	100,166	68,301
Mortgage loans held for portfolio	4,193	2,911	4,340
Allowance for credit losses on mortgage loans	(1)	(1)	(8)
Total assets	64,694	145,857	93,482
Consolidated obligations(3)			
Discount notes	33,432	50,821	27,756
Bonds	26,741	85,910	59,837
Total consolidated obligations	60,173	136,731	87,593
Mandatorily redeemable capital stock	32	7	24
Total capital			
Capital stock(4)	2,477	5,856	3,547
Retained earnings	1,386	1,679	1,255
Accumulated other comprehensive income (loss)	(343)	47	95
Total capital	3,520	7,582	4,897
Asset composition (as a percentage of the individual FHLBank's total assets)			
Investments(2)	29.9%	28.9%	21.7%
Advances	63.3%	68.7%	73.1%
Mortgage loans held for portfolio, net	6.5%	2.0%	4.6%
Total retained earnings as a percentage of FHLBank's total assets	2.1%	1.2%	1.3%
FHLBank's total assets as a percentage of FHLBank System's total assets	5.9%	13.4%	8.6%
At September 30, 2017			
Assets			
Investments(2)	$ 19,341	$ 31,796	$ 19,529
Advances	37,467	113,081	74,228
Mortgage loans held for portfolio	3,943	2,882	3,769
Allowance for credit losses on mortgage loans	(1)	(1)	(6)
Total assets	60,975	148,349	99,865
Consolidated obligations(3)			
Discount notes	28,048	37,681	38,877
Bonds	28,492	100,893	55,140
Total consolidated obligations	56,540	138,574	94,017
Mandatorily redeemable capital stock	36	20	5
Total capital			
Capital stock(4)	2,273	6,318	3,697
Retained earnings	1,265	1,498	1,119
Accumulated other comprehensive income (loss)	(310)	(78)	124
Total capital	3,228	7,738	4,940
Asset composition (as a percentage of the individual FHLBank's total assets)			
Investments(2)	31.7%	21.4%	19.6%
Advances	61.4%	76.2%	74.3%
Mortgage loans held for portfolio, net	6.5%	1.9%	3.8%
Total retained earnings as a percentage of individual FHLBank's total assets	2.1%	1.0%	1.1%
FHLBank's total assets as a percentage of FHLBank System's total assets	5.6%	13.5%	9.1%

(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 *Financial Discussion and Analysis - Combined Results of Operations - Interbank Transfers of Consolidated Bonds and Their Effect on Combined Net Income*.
(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
	$ 44,680	$ 31,580	$ 21,181	$ 29,841	$ 35,139	$ 29,434	$ 14,439	$ 30,292
	109,746	57,771	33,567	54,667	100,787	42,242	28,472	69,359
	377	10,182	11,295	6,440	7,550	1,795	8,115	2,892
	(1)	(1)	(1)	(1)	(1)	—	(1)	—
	155,591	99,796	66,472	91,410	144,095	73,710	51,297	102,973
	62,632	45,313	22,650	37,674	42,101	33,997	22,417	24,030
	83,761	46,913	39,564	46,232	92,998	34,382	25,836	71,405
	146,393	92,226	62,214	83,906	135,099	68,379	48,253	95,435
	2	22	164	313	277	7	5	227
	5,557	4,242	1,901	1,718	5,163	2,609	1,464	2,883
	2,104	1,008	1,061	3,488	2,019	1,042	894	3,370
	91	(15)	96	118	123	280	32	337
	7,752	5,235	3,058	5,324	7,305	3,931	2,390	6,590
	28.7%	31.6%	31.9%	32.6%	24.4%	39.9%	28.1%	29.4%
	70.5%	57.9%	50.5%	59.8%	69.9%	57.3%	55.5%	67.4%
	0.2%	10.2%	17.0%	7.0%	5.2%	2.4%	15.8%	2.8%
	1.4%	1.0%	1.6%	3.8%	1.4%	1.4%	1.7%	3.3%
	14.3%	9.2%	6.1%	8.4%	13.2%	6.8%	4.7%	9.5%
	$ 41,564	$ 27,575	$ 18,648	$ 31,885	$ 39,341	$ 29,255	$ 13,767	$ 45,775
	99,812	67,943	32,953	50,153	117,514	36,288	28,319	61,629
	462	9,505	10,196	5,026	7,033	577	7,057	1,774
	(1)	(1)	(1)	(2)	(2)	—	(1)	—
	143,924	105,251	62,178	87,488	164,545	66,450	49,361	109,503
	49,727	49,540	22,381	45,460	52,976	31,439	21,281	29,902
	85,517	49,298	35,903	35,890	102,294	30,060	25,070	72,266
	135,244	98,838	58,284	81,350	155,270	61,499	46,351	102,168
	3	32	165	308	422	7	5	342
	5,041	4,229	1,779	1,557	5,624	2,207	1,467	2,815
	1,972	915	948	3,219	1,774	921	817	3,226
	123	(12)	103	96	100	161	16	308
	7,136	5,132	2,830	4,872	7,498	3,289	2,300	6,349
	28.9%	26.2%	30.0%	36.4%	23.9%	44.0%	27.9%	41.8%
	69.4%	64.6%	53.0%	57.3%	71.4%	54.6%	57.4%	56.3%
	0.3%	9.0%	16.4%	5.7%	4.3%	0.9%	14.3%	1.6%
	1.4%	0.9%	1.5%	3.7%	1.1%	1.4%	1.7%	2.9%
	13.1%	9.6%	5.7%	8.0%	15.0%	6.1%	4.5%	10.0%

Individual FHLBank Selected Financial Data and Financial Ratios (continued)

(dollars in millions)	Boston	New York	Pittsburgh
Selected Other Data			
September 30, 2018			
Advance concentrations - top five borrowers	35%	57%	74%
Capital stock concentrations - top five stockholders(5)	29%	51%	67%
Regulatory capital-to-assets ratio(6)	6.0%	5.2%	5.2%
Cash and stock dividends			
Quarter-to-date September 30, 2018	$ 35	$ 103	$ 59
Quarter-to-date September 30, 2017	$ 26	$ 84	$ 43
Year-to-date September 30, 2018	$ 95	$ 310	$ 172
Year-to-date September 30, 2017	$ 74	$ 248	$ 126
Weighted average dividend rate			
Quarter-to-date September 30, 2018	5.87%	6.75%	6.42%
Quarter-to-date September 30, 2017	4.22%	6.00%	4.70%
Year-to-date September 30, 2018	5.45%	6.67%	6.42%
Year-to-date September 30, 2017	4.08%	5.50%	4.70%
Return on average equity(7)			
Quarter-to-date September 30, 2018	7.56%	7.94%	7.99%
Quarter-to-date September 30, 2017	5.64%	6.84%	6.93%
Year-to-date September 30, 2018	6.84%	7.43%	7.35%
Year-to-date September 30, 2017	4.98%	5.88%	7.30%
Return on average assets			
Quarter-to-date September 30, 2018	0.42%	0.40%	0.41%
Quarter-to-date September 30, 2017	0.31%	0.34%	0.34%
Year-to-date September 30, 2018	0.37%	0.37%	0.38%
Year-to-date September 30, 2017	0.28%	0.30%	0.36%
Net interest margin(8)			
Quarter-to-date September 30, 2018	0.50%	0.54%	0.51%
Quarter-to-date September 30, 2017	0.49%	0.46%	0.45%
Year-to-date September 30, 2018	0.51%	0.52%	0.49%
Year-to-date September 30, 2017	0.45%	0.48%	0.46%
Net interest spread			
Quarter-to-date September 30, 2018	0.38%	0.44%	0.40%
Quarter-to-date September 30, 2017	0.41%	0.40%	0.40%
Year-to-date September 30, 2018	0.40%	0.43%	0.40%
Year-to-date September 30, 2017	0.38%	0.42%	0.42%

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(5) The FHLBank of Des Moines' top five capital stock concentration ratio is calculated based on its top four capital stockholders, as its fifth largest capital stockholder consists of 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
58 %	62%	43%	60%	58%	34%	54%	59%
50 %	55%	37%	54%	44%	25%	48%	38%
4.9 %	5.3%	4.7%	6.0%	5.2%	5.0%	4.6%	6.3%
$ 82	$ 67	$ 20	$ 17	$ 71	$ 16	$ 24	$ 51
$ 58	$ 53	$ 18	$ 11	$ 42	$ 9	$ 24	$ 44
$ 227	$ 191	$ 71	$ 45	$ 180	$ 41	$ 74	$ 162
$ 176	$ 149	$ 49	$ 30	$ 130	$ 22	$ 68	$ 139
6.19 %	6.00%	4.50%	4.01%	5.28%	2.61%	6.32%	7.00%
4.91 %	5.25%	4.25%	3.04%	3.06%	1.69%	5.81%	7.00%
5.63 %	5.84%	5.16%	3.70%	4.53%	2.29%	6.10%	7.00%
4.79 %	4.83%	4.25%	2.66%	3.07%	1.46%	5.76%	7.69%
5.68 %	6.87%	5.05%	5.82%	6.16%	5.05%	6.89%	6.26%
5.46 %	5.97%	5.95%	6.54%	6.96%	4.83%	8.00%	5.19%
5.81 %	6.41%	6.58%	6.02%	6.52%	4.97%	6.74%	5.76%
4.91 %	6.06%	5.66%	6.66%	7.20%	5.13%	8.37%	7.03%
0.28 %	0.36%	0.23%	0.33%	0.31%	0.28%	0.32%	0.40%
0.27 %	0.30%	0.26%	0.36%	0.31%	0.25%	0.36%	0.30%
0.29 %	0.33%	0.31%	0.34%	0.32%	0.28%	0.31%	0.34%
0.24 %	0.30%	0.25%	0.37%	0.31%	0.27%	0.38%	0.41%
0.38 %	0.52%	0.44%	0.55%	0.42%	0.45%	0.53%	0.60%
0.35 %	0.42%	0.45%	0.59%	0.40%	0.39%	0.51%	0.55%
0.36 %	0.48%	0.45%	0.55%	0.43%	0.45%	0.50%	0.54%
0.03 %	0.42%	0.44%	0.58%	0.38%	0.40%	0.51%	0.57%
0.28 %	0.41%	0.33%	0.43%	0.31%	0.33%	0.44%	0.47%
0.31 %	0.35%	0.38%	0.52%	0.35%	0.32%	0.45%	0.49%
0.27 %	0.38%	0.35%	0.45%	0.33%	0.33%	0.42%	0.45%
(0.01)%	0.36%	0.38%	0.51%	0.34%	0.34%	0.46%	0.52%

INDEX OF TABLES CONTAINED IN THE COMBINED FINANCIAL REPORT