FEDERAL HOME LOAN BANKS

Combined Financial Report
for the Quarterly Period Ended June 30, 2017

This Combined Financial Report provides financial information on the Federal Home Loan Banks. Investors should use this Combined Financial Report with other documents provided by, or on behalf of, the Federal Home Loan Banks when considering whether or not to purchase Federal Home Loan Bank consolidated bonds and consolidated discount notes (collectively referred to as consolidated obligations).

Consolidated obligations are the joint and several obligations of all Federal Home Loan Banks, even though each Federal Home Loan Bank is a separately chartered entity with its own board of directors and management. This means that each individual Federal Home Loan Bank is responsible for the payment of principal and interest on all consolidated obligations issued by the Federal Home Loan Banks. 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 the Combined Financial Reports. Neither the Combined Financial Reports nor any offering materials provided on behalf of the Federal Home Loan Banks describe all the risks of investing in Federal Home Loan Bank consolidated obligations. Investors should consult with their financial and legal advisors about the risks of investing in these consolidated obligations.

The financial information contained in this Combined Financial Report is for the quarterly period ended June 30, 2017. This Combined Financial Report should be read in conjunction with the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, issued on March 28, 2017. Combined Financial Reports are available on the Federal Home Loan Banks Office of Finance web site at www.fhlb-of.com. This web site address is provided as a matter of convenience only, and its contents are not made part of this report and are not intended to be incorporated by reference into this report.

Any information contained in the Combined Financial Reports or any other documents provided by, or on behalf of, the Federal Home Loan Banks will be considered modified or superseded to the extent that the information is, or is deemed to be, modified or superseded by subsequent information contained in documents provided by, or on behalf of, the Federal Home Loan Banks.

Investors should direct questions about Federal Home Loan Bank 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 August 14, 2017.

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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 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, and the issuer has agreed with the 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), the fiscal agent of the FHLBanks, comprise the FHLBank System.

The Office of Finance is responsible for preparing the Combined Financial Report 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 Report. The Office of Finance is responsible for combining the financial information it receives from each of the FHLBanks.

The FHLBanks Combined Financial Report is intended to be used by investors in consolidated obligations (consolidated bonds and consolidated discount notes) of the FHLBanks as these are the 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.

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. This is the case in the 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 are not necessarily identical 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 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 that 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 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. FHLBank financial reports are made available on the web site of each FHLBank and on the SEC's web site at www.sec.gov. This web site address is provided as a matter of convenience only, and its contents are not made part of this report and are not intended to be incorporated by reference into this report.

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF CONDITION
(Unaudited)

(dollars in millions, except par value)	June 30, 2017	December 31, 2016
Assets		
Cash and due from banks	$ 7,952	$ 7,441
Interest-bearing deposits	3,122	2,878
Securities purchased under agreements to resell	48,417	52,771
Federal funds sold	74,622	48,633
Investment securities		
Trading securities *(Note 3)*	8,261	9,461
Available-for-sale securities *(Note 4)*	81,277	81,673
Held-to-maturity securities, fair value of $97,935 and $97,357 *(Note 5)*	96,849	96,601
Total investment securities	186,387	187,735
Advances, includes $9,033 and $14,279 at fair value held under fair value option *(Note 7)*	706,849	705,225
Mortgage loans held for portfolio, net		
Mortgage loans held for portfolio *(Note 8)*	50,555	48,494
Allowance for credit losses on mortgage loans *(Note 9)*	(17)	(18)
Total mortgage loans held for portfolio, net	50,538	48,476
Accrued interest receivable	1,384	1,260
Premises, software, and equipment, net	272	228
Derivative assets, net *(Note 10)*	1,425	1,407
Other assets	731	658
Total assets	$ 1,081,699	$ 1,056,712
Liabilities		
Deposits *(Note 11)*	$ 9,338	$ 8,089
Consolidated obligations *(Note 12)*		
Discount notes, includes $4,203 and $18,597 at fair value held under fair value option	428,684	409,815
Bonds, includes $12,463 and $16,898 at fair value held under fair value option	582,248	578,927
Total consolidated obligations	1,010,932	988,742
Mandatorily redeemable capital stock	1,484	1,704
Accrued interest payable	1,196	1,100
Affordable Housing Program payable	989	946
Derivative liabilities, net *(Note 10)*	573	810
Other liabilities	2,624	2,862
Total liabilities	1,027,136	1,004,253
Commitments and contingencies *(Note 16)*		
Capital *(Note 13)*		
Capital stock		
Class B putable ($100 par value) issued and outstanding shares	36,669	36,072
Class A putable ($100 par value) issued and outstanding shares	214	162
Total capital stock	36,883	36,234
Additional capital from merger	—	52
Retained earnings		
Unrestricted	12,262	11,789
Restricted	4,976	4,541
Total retained earnings	17,238	16,330
Accumulated other comprehensive income (loss) *(Note 14)*	442	(157)
Total capital	54,563	52,459
Total liabilities and capital	$ 1,081,699	$ 1,056,712

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 June 30, 2017	Three Months Ended June 30, 2016	Six Months Ended June 30, 2017	Six Months Ended June 30, 2016
Interest income				
Advances	$ 2,175	$ 1,234	$ 3,705	$ 2,375
Prepayment fees on advances, net	8	37	17	50
Interest-bearing deposits	14	10	24	18
Securities purchased under agreements to resell	42	20	71	42
Federal funds sold	204	63	351	123
Investment securities				
Trading securities	39	49	78	102
Available-for-sale securities	453	385	882	776
Held-to-maturity securities	491	446	959	894
Total investment securities	983	880	1,919	1,772
Mortgage loans held for portfolio	421	392	835	800
Other	1	(2)	2	—
Total interest income	3,848	2,634	6,924	5,180
Interest expense				
Consolidated obligations				
Discount notes	851	513	1,477	1,002
Bonds	1,775	1,179	3,373	2,264
Total consolidated obligations	2,626	1,692	4,850	3,266
Deposits	16	4	27	8
Subordinated notes	—	10	—	24
Mandatorily redeemable capital stock	17	23	38	40
Total interest expense	2,659	1,729	4,915	3,338
Net interest income	1,189	905	2,009	1,842
Provision (reversal) for credit losses	1	1	1	2
Net interest income after provision (reversal) for credit losses	1,188	904	2,008	1,840
Non-interest income				
Other-than-temporary impairment losses				
Total other-than-temporary impairment losses	(6)	(5)	(8)	(21)
Net amount of impairment losses reclassified to/(from) accumulated other comprehensive income (loss)	(2)	(1)	(5)	6
Net other-than-temporary impairment losses	(8)	(6)	(13)	(15)
Net gains (losses) on trading securities	16	46	26	148
Net realized gains (losses) from sale of available-for-sale securities	1	3	2	16
Net realized gains (losses) from sale of held-to-maturity securities	2	1	2	1
Net gains (losses) on financial instruments held under fair value option	(1)	(10)	(8)	—
Net gains (losses) on derivatives and hedging activities	(17)	(73)	293	(310)
Gains on litigation settlements, net	—	252	139	600
Net gains (losses) on debt extinguishments	—	(2)	—	(3)
Other, net	44	43	88	85
Total non-interest income (loss)	37	254	529	522
Non-interest expense				
Compensation and benefits	158	151	326	304
Other operating expenses	95	88	187	176
Federal Housing Finance Agency	15	13	32	29
Office of Finance	11	11	26	24
Other	6	7	121	13
Total non-interest expense	285	270	692	546
Net income before assessments	940	888	1,845	1,816
Affordable Housing Program assessments	96	92	189	186
Net income	$ 844	$ 796	$ 1,656	$ 1,630

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 June 30, 2017	Three Months Ended June 30, 2016	Six Months Ended June 30, 2017	Six Months Ended June 30, 2016
Net income	$ 844	$ 796	$ 1,656	$ 1,630
Other comprehensive income				
Net unrealized gains/losses on available-for-sale securities				
Unrealized gains (losses)	91	24	358	42
Reclassification of realized net (gains) losses included in net income	(1)	(4)	(2)	(16)
Total net unrealized gains/losses on available-for-sale securities	90	20	356	26
Net unrealized gains/losses on held-to-maturity securities transferred from available-for-sale securities				
Unrealized gains (losses)	—	—	—	1
Total net unrealized gains/losses on held-to-maturity securities transferred from available-for-sale securities	—	—	—	1
Net non-credit portion of other-than-temporary impairment losses on available-for-sale securities				
Net change in fair value of other-than-temporarily impaired securities	100	81	126	7
Net amount of impairment losses reclassified to (from) non-interest income	1	1	4	(7)
Reclassification of (gains) losses included in net income	—	1	—	—
Total net non-credit portion of other-than-temporary impairment losses on available-for-sale securities	101	83	130	—
Net non-credit portion of other-than-temporary impairment losses on held-to-maturity securities				
Net amount of impairment losses reclassified to (from) non-interest income	1	—	1	1
Accretion of non-credit portion	20	24	45	48
Total net non-credit portion of other-than-temporary impairment losses on held-to-maturity securities	21	24	46	49
Net unrealized gains/losses relating to hedging activities				
Unrealized gains (losses)	3	(29)	59	(160)
Reclassification of (gains) losses included in net income	2	4	5	11
Total net unrealized gains/losses relating to hedging activities	5	(25)	64	(149)
Pension and postretirement benefits	2	(2)	3	2
Total other comprehensive income (loss)	219	100	599	(71)
Comprehensive income	$ 1,063	$ 896	$ 2,255	$ 1,559

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

FEDERAL HOME LOAN BANKS
COMBINED STATEMENT OF CAPITAL
SIX MONTHS ENDED JUNE 30, 2017 AND 2016
(Unaudited)

	Capital Stock - Putable					
	Class B			Class A		
(dollars and shares in millions)	Shares		Par Value	Shares		Par Value
Balance, December 31, 2015	340	$	34,005	2	$	180
Comprehensive income (loss)	—		—	—		—
Proceeds from issuance of capital stock	126		12,560	—		3
Repurchases/redemptions of capital stock	(99)		(9,852)	(2)		(217)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(19)		(1,892)	—		(20)
Transfers between Class B and Class A shares	(2)		(242)	2		242
Dividends on capital stock						
Cash	—		—	—		—
Stock	—		46	—		—
Balance, June 30, 2016	346	$	34,625	2	$	188
Balance, December 31, 2016	361	$	36,072	2	$	162
Comprehensive income (loss)	—		—	—		—
Proceeds from issuance of capital stock	168		16,830	—		1
Repurchases/redemptions of capital stock	(153)		(15,276)	(3)		(267)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(7)		(693)	—		(3)
Transfers between Class B and Class A shares	(3)		(321)	3		321
Dividends on capital stock						
Cash	—		—	—		—
Stock	1		57	—		—
Balance, June 30, 2017	367	$	36,669	2	$	214

Capital Stock - Putable							
Total			Retained Earnings				
Shares	Par Value	Additional Capital from Merger	Unrestricted	Restricted	Total	Accumulated Other Comprehensive Income (Loss)	Total Capital
342	$ 34,185	$ 194	$ 10,447	$ 3,850	$ 14,297	$ (634)	$ 48,042
—	—	—	1,312	318	1,630	(71)	1,559
126	12,563	—	—	—	—	—	12,563
(101)	(10,069)	—	—	—	—	—	(10,069)
(19)	(1,912)	—	—	—	—	—	(1,912)
—	—	—	—	—	—	—	—
—	—	(66)	(586)	—	(586)	—	(652)
—	46	—	(46)	—	(46)	—	—
348	$ 34,813	$ 128	$ 11,127	$ 4,168	$ 15,295	$ (705)	$ 49,531
363	$ 36,234	$ 52	$ 11,789	$ 4,541	$ 16,330	$ (157)	$ 52,459
—	—	—	1,221	435	1,656	599	2,255
168	16,831	—	—	—	—	—	16,831
(156)	(15,543)	—	—	—	—	—	(15,543)
(7)	(696)	—	—	—	—	—	(696)
—	—	—	—	—	—	—	—
—	—	(52)	(691)	—	(691)	—	(743)
1	57	—	(57)	—	(57)	—	—
369	$ 36,883	$ —	$ 12,262	$ 4,976	$ 17,238	$ 442	$ 54,563

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)	Six Months Ended June 30, 2017	2016
Operating activities		
Net income	$ 1,656	$ 1,630
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	127	9
Net change in derivatives and hedging activities	237	314
Net other-than-temporary impairment losses	13	15
Other adjustments	(26)	(33)
Net change in fair value adjustments on trading securities	(18)	(120)
Net change in fair value adjustments on financial instruments held under fair value option	8	—
Net change in		
Trading securities	(9)	(29)
Accrued interest receivable	(147)	(67)
Other assets	(64)	34
Accrued interest payable	91	16
Other liabilities	(37)	38
Total adjustments	175	177
Net cash provided by (used in) operating activities	1,831	1,807
Investing activities		
Net change in		
Interest-bearing deposits	98	(3,042)
Securities purchased under agreements to resell	4,354	917
Federal funds sold	(25,989)	(3,291)
Premises, software, and equipment	(75)	(27)
Trading securities		
Net decrease (increase) in short-term	(600)	—
Proceeds from long-term	2,134	2,275
Purchases of long-term	(309)	(3,643)
Available-for-sale securities		
Net decrease (increase) in short-term	950	(500)
Proceeds from long-term	5,020	8,442
Purchases of long-term	(4,464)	(13,043)
Held-to-maturity securities		
Net decrease (increase) in short-term	38	7
Proceeds from long-term	9,654	8,647
Purchases of long-term	(10,546)	(9,085)
Advances		
Principal collected	4,430,786	3,374,469
Made	(4,432,851)	(3,428,186)
Mortgage loans held for portfolio		
Principal collected	3,365	3,704
Purchases	(5,510)	(4,867)
Proceeds from sales of foreclosed assets	34	53
Other investing activities	(16)	1
Net cash provided by (used in) investing activities	(23,927)	(67,169)

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

(dollars in millions)	Six Months Ended June 30, 2017	2016
Financing activities		
Net change in deposits and pass-through reserves, and other financing activities	$ 1,113	$ (1,089)
Net proceeds (payments) on derivative contracts with financing element	(119)	(202)
Net proceeds from issuance of consolidated obligations		
Discount notes	3,055,017	1,746,568
Bonds	208,176	254,686
Payments for maturing and retiring consolidated obligations		
Discount notes	(3,036,285)	(1,769,736)
Bonds	(204,926)	(173,042)
Payments for retirement of subordinated notes	—	(944)
Proceeds from issuance of capital stock	16,831	12,563
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(914)	(811)
Payments for repurchases/redemptions of capital stock	(15,543)	(10,069)
Cash dividends paid	(743)	(652)
Net cash provided by (used in) financing activities	22,607	57,272
Net increase (decrease) in cash and due from banks	511	(8,090)
Cash and due from banks at beginning of the period	7,441	14,289
Cash and due from banks at end of the period	$ 7,952	$ 6,199
Supplemental disclosures		
Interest paid	$ 4,594	$ 3,298
Affordable Housing Program payments, net	$ 150	$ 138
Transfers of mortgage loans to other assets	$ 12	$ 28
Transfers of mortgage loans held for sale to securitized mortgage loans	$ 169	$ 206
Net capital stock reclassified to/(from) mandatorily redeemable capital stock	$ 696	$ 1,912

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.

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, 2016. 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, 2017.

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 presentation 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 are 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 par. Because these transfers represent inter-company transfers under combination accounting principles, an inter-company elimination is made for any gain or loss on 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 2016 combined financial statements have been reclassified or revised to conform to the financial statement presentation for the three and six months ended June 30, 2017. 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 June 30, 2017 and December 31, 2016, the FHLBanks had $48,417 million and $52,771 million in securities purchased under agreements to resell. Based on the fair value of the related collateral held, the securities purchased under agreements to resell were fully collateralized for the periods presented. There were no offsetting liabilities related to these securities at June 30, 2017 and December 31, 2016.

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, including initial and certain variation margin, 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.Clearnet LLC and/or CME Clearing. Effective January 3, 2017, CME Clearing made certain amendments to its rulebook, changing the legal characterization of variation margin payments to be daily settlement payments, rather than collateral. Variation margin related to LCH.Clearnet LLC contracts continues to be presented as cash collateral. At both Clearinghouses, initial margin continues to be considered cash collateral.

Note 2 - Recently Issued and Adopted Accounting Guidance

Premium Amortization on Purchased Callable Debt Securities

On March 30, 2017, the Financial Accounting Standards Board (FASB) issued amended guidance to shorten the amortization period for certain purchased callable debt securities held at a premium. Specifically, the amendments require the premium to be amortized to the earliest call date. The amendments do not require an accounting change for securities held at a discount; the discount continues to be amortized to maturity. This guidance is effective for the FHLBanks for interim and annual periods beginning on January 1, 2019, and early adoption is permitted. This guidance should be applied using a modified retrospective method through a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. The FHLBanks are in the process of evaluating this guidance, and its effect on the FHLBanks’ combined financial condition, combined results of operations, and combined cash flows has not yet been determined.

Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost

On March 10, 2017, the FASB issued amended guidance that requires an employer to disaggregate the service cost component from the other components of net periodic pension cost and net periodic postretirement benefit cost (net benefit cost). The amendments also provide explicit guidance on how to present the service cost component and the other components of net benefit cost on the income statement and allow only the service cost component of net benefit cost to be eligible for capitalization. This guidance is effective for the FHLBanks for interim and annual periods beginning on January 1, 2018, and early adoption is permitted. This guidance should be applied 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 should be applied prospectively on and after the effective date. 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.

Classification of Certain Cash Receipts and Cash Payments

On August 26, 2016, the FASB issued amendments to clarify guidance 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 is effective for the FHLBanks for interim and annual periods beginning on January 1, 2018, and early adoption is permitted. This guidance should be applied using a retrospective transition method to each period presented. The FHLBanks do not intend to adopt this guidance early. 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.

Recognition and Measurement of Financial Assets and Financial Liabilities

On January 5, 2016, the FASB issued amended guidance on certain aspects of recognition, measurement, presentation, and disclosure of financial instruments. This guidance includes, but is not limited to, the following:

- Requires an entity to present separately in other comprehensive income (OCI) the portion of the total change in the fair value of a liability resulting from a change in the instrument-specific credit risk when the entity has elected to measure the liability at fair value in accordance with the fair value option for financial instruments.
- Requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset (that is, securities or loans and receivables) on the statement of condition or the accompanying notes to the financial statements.
- Eliminates the requirement for public entities to disclose the method(s) and significant assumptions used to estimate the fair value that is required to be disclosed for financial instruments measured at amortized cost on the statement of condition.

This guidance becomes effective for the FHLBanks for the interim and annual periods beginning on January 1, 2018, and early adoption is only permitted for certain provisions. The amendments, in general, should be applied by means of a cumulative-effect adjustment on the statement of condition as of the beginning of the period of adoption. Although the FHLBanks are in the process of evaluating this guidance, it is expected to affect FHLBanks' disclosures. However, the requirement to present the instrument-specific credit risk in OCI is not expected to have a material effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.

Contingent Put and Call Options in Debt Instruments

On March 14, 2016, the FASB issued amendments to clarify the requirements for assessing whether contingent call (put) options that can accelerate the payment of principal on debt instruments are clearly and closely related to their debt hosts. The guidance requires entities to apply only the four-step decision sequence when assessing whether the economic characteristics and risks of call (put) options are clearly and closely related to the economic characteristics and risks of their debt hosts. Consequently, when a call (put) option is contingently exercisable, an entity does not have to assess whether the event that triggers the ability to exercise a call (put) option is related to interest rates or credit risks. This guidance became effective for the FHLBanks for the interim and annual periods beginning on January 1, 2017. The adoption of this guidance did not have any 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	June 30, 2017	December 31, 2016
Non-mortgage-backed securities		
U.S. Treasury obligations	$ 613	$ 1,606
Certificates of deposit	600	—
Other U.S. obligations	207	216
GSE and Tennessee Valley Authority obligations	4,899	5,693
State or local housing agency obligations	1	—
Other	295	290
Total non-mortgage-backed securities	6,615	7,805
Mortgage-backed securities		
Other U.S. obligations single-family MBS	18	20
GSE single-family MBS	114	127
GSE multifamily MBS	1,514	1,509
Total mortgage-backed securities	1,646	1,656
Total	$ 8,261	$ 9,461

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Net unrealized gains (losses) on trading securities held at period-end	$ 18	$ 47	$ 29	$ 154
Net unrealized and realized gains (losses) on trading securities sold/ matured during the period	(2)	(1)	(3)	(6)
Net gains (losses) on trading securities	$ 16	$ 46	$ 26	$ 148

Note 4 - Available-for-Sale Securities

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

	June 30, 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	$ 350	$ —	$ —	$ —	$ 350
Other U.S. obligations	4,020	—	23	(8)	4,035
GSE and Tennessee Valley Authority obligations	16,228	—	189	(47)	16,370
State or local housing agency obligations	1,294	—	4	(6)	1,292
Federal Family Education Loan Program ABS	4,197	—	222	(7)	4,412
Other	1,007	—	13	(27)	993
Total non-mortgage-backed securities	27,096	—	451	(95)	27,452
Mortgage-backed securities					
Other U.S. obligations single-family MBS	5,403	—	40	(4)	5,439
Other U.S. obligations multifamily MBS	494	—	—	(2)	492
GSE single-family MBS	8,795	—	40	(31)	8,804
GSE multifamily MBS	32,438	—	384	(29)	32,793
Private-label residential MBS	5,803	(63)	557	—	6,297
Total mortgage-backed securities	52,933	(63)	1,021	(66)	53,825
Total	$ 80,029	$ (63)	$ 1,472	$ (161)	$ 81,277

	December 31, 2016				
	Amortized Cost(1)	OTTI Recognized in AOCI(2)	Gross Unrealized Gains(3)	Gross Unrealized Losses(3)	Fair Value
Non-mortgage-backed securities					
Certificates of deposit	$ 1,300	$ —	$ —	$ —	$ 1,300
Other U.S. obligations	4,270	—	25	(13)	4,282
GSE and Tennessee Valley Authority obligations	16,218	—	102	(77)	16,243
State or local housing agency obligations	1,289	—	1	(17)	1,273
Federal Family Education Loan Program ABS	4,430	—	165	(23)	4,572
Other	1,085	—	9	(30)	1,064
Total non-mortgage-backed securities	28,592	—	302	(160)	28,734
Mortgage-backed securities					
Other U.S. obligations single-family MBS	5,561	—	36	(20)	5,577
Other U.S. obligations multifamily MBS	565	—	—	(2)	563
GSE single-family MBS	9,613	—	23	(60)	9,576
GSE multifamily MBS	30,108	—	359	(77)	30,390
Private-label residential MBS	6,472	(120)	485	(4)	6,833
Total mortgage-backed securities	52,319	(120)	903	(163)	52,939
Total	$ 80,911	$ (120)	$ 1,205	$ (323)	$ 81,673

(1) Amortized cost of AFS securities includes adjustments made to the cost basis of an investment for accretion, amortization, previous OTTI recognized in earnings, and/or fair value hedge accounting adjustments.
(2) OTTI recognized in AOCI does not include $548 million and $475 million in subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at June 30, 2017 and December 31, 2016, 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 $548 million and $475 million in subsequent unrealized gains (losses) in fair value of previously other-than-temporarily impaired AFS securities at June 30, 2017 and December 31, 2016, 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)

	June 30, 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						
Other U.S. Obligations	$ 295	$ (1)	$ 2,356	$ (7)	$ 2,651	$ (8)
GSE and Tennessee Valley Authority obligations	789	(2)	1,283	(45)	2,072	(47)
State or local housing agency obligations	202	(5)	628	(1)	830	(6)
Federal Family Education Loan Program ABS	—	—	679	(7)	679	(7)
Other	—	—	422	(27)	422	(27)
Total non-mortgage-backed securities	1,286	(8)	5,368	(87)	6,654	(95)
Mortgage-backed securities						
Other U.S. obligations single-family MBS	11	—	1,511	(4)	1,522	(4)
Other U.S. obligations multifamily MBS	353	(1)	138	(1)	491	(2)
GSE single-family MBS	3,051	(24)	854	(7)	3,905	(31)
GSE multifamily MBS	2,467	(3)	6,042	(26)	8,509	(29)
Private-label residential MBS	58	(2)	1,150	(61)	1,208	(63)
Total mortgage-backed securities	5,940	(30)	9,695	(99)	15,635	(129)
Total	$ 7,226	$ (38)	$ 15,063	$ (186)	$ 22,289	$ (224)

	December 31, 2016					
	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						
Other U.S. Obligations	$ 209	$ (1)	$ 2,972	$ (12)	$ 3,181	$ (13)
GSE and Tennessee Valley Authority obligations	3,342	(14)	945	(63)	4,287	(77)
State or local housing agency obligations	530	(16)	395	(1)	925	(17)
Federal Family Education Loan Program ABS	—	—	753	(23)	753	(23)
Other	—	—	423	(30)	423	(30)
Total non-mortgage-backed securities	4,081	(31)	5,488	(129)	9,569	(160)
Mortgage-backed securities						
Other U.S. obligations single-family MBS	1,318	(3)	2,260	(17)	3,578	(20)
Other U.S. obligations multifamily MBS	326	(1)	165	(1)	491	(2)
GSE single-family MBS	5,943	(50)	735	(10)	6,678	(60)
GSE multifamily MBS	4,564	(22)	9,043	(55)	13,607	(77)
Private-label residential MBS	132	(1)	1,514	(123)	1,646	(124)
Total mortgage-backed securities	12,283	(77)	13,717	(206)	26,000	(283)
Total	$ 16,364	$ (108)	$ 19,205	$ (335)	$ 35,569	$ (443)

(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.

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

	June 30, 2017		December 31, 2016	
Year of Maturity	**Amortized Cost**	**Fair Value**	**Amortized Cost**	**Fair Value**
Non-mortgage-backed securities				
Due in one year or less	$ 2,475	$ 2,483	$ 3,838	$ 3,843
Due after one year through five years	7,025	7,082	5,870	5,908
Due after five years through ten years	9,965	10,049	11,019	11,052
Due after ten years	3,434	3,426	3,435	3,359
Federal Family Education Loan Program ABS(1)	4,197	4,412	4,430	4,572
Total non-mortgage-backed securities	27,096	27,452	28,592	28,734
Mortgage-backed securities(1)	52,933	53,825	52,319	52,939
Total	$ 80,029	$ 81,277	$ 80,911	$ 81,673

(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 June 30,		Six Months Ended June 30,	
	2017	**2016**	**2017**	**2016**
Proceeds from sale of AFS securities	$ 81	$ 1,697	$ 251	$ 3,057
Gross gains on sale of AFS securities	$ 1	$ 3	$ 2	$ 16
Gross losses on sale of AFS securities	—	—	—	—
Net realized gains/(losses) from sale of AFS securities	$ 1	$ 3	$ 2	$ 16

See *Note 6 - Other-than-Temporary Impairment Analysis* for analysis related to OTTI.

Note 5 - Held-to-Maturity Securities

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

	June 30, 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	$ 1,800	$ —	$ 1,800	$ —	$ —	$ 1,800
Other U.S. obligations	1,550	—	1,550	41	(1)	1,590
GSE and Tennessee Valley Authority obligations	6,751	—	6,751	72	(6)	6,817
State or local housing agency obligations	2,535	—	2,535	3	(87)	2,451
Total non-mortgage-backed securities	12,636	—	12,636	116	(94)	12,658
Mortgage-backed securities						
Other U.S. obligations single-family MBS	8,131	—	8,131	36	(22)	8,145
Other U.S. obligations multifamily MBS	4	—	4	—	—	4
GSE single-family MBS	37,885	—	37,885	336	(141)	38,080
GSE multifamily MBS	34,372	—	34,372	278	(33)	34,617
Private-label residential MBS	3,966	(363)	3,603	594	(29)	4,168
Manufactured housing loan ABS	62	—	62	2	(1)	63
Home equity loan ABS	179	(23)	156	46	(2)	200
Total mortgage-backed securities	84,599	(386)	84,213	1,292	(228)	85,277
Total	$ 97,235	$ (386)	$ 96,849	$ 1,408	$ (322)	$ 97,935

	December 31, 2016					
	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	$ 1,750	$ —	$ 1,750	$ —	$ —	$ 1,750
Other U.S. obligations	1,751	—	1,751	42	(1)	1,792
GSE and Tennessee Valley Authority obligations	6,470	—	6,470	63	(6)	6,527
State or local housing agency obligations	2,575	—	2,575	2	(104)	2,473
Total non-mortgage-backed securities	12,546	—	12,546	107	(111)	12,542
Mortgage-backed securities						
Other U.S. obligations single-family MBS	8,493	—	8,493	30	(37)	8,486
Other U.S. obligations multifamily MBS	5	—	5	—	—	5
GSE single-family MBS	41,116	—	41,116	290	(266)	41,140
GSE multifamily MBS	30,083	—	30,083	231	(70)	30,244
Private-label residential MBS	4,520	(402)	4,118	576	(48)	4,646
Manufactured housing loan ABS	69	—	69	3	(1)	71
Home equity loan ABS	201	(30)	171	55	(3)	223
Total mortgage-backed securities	84,487	(432)	84,055	1,185	(425)	84,815
Total	$ 97,033	$ (432)	$ 96,601	$ 1,292	$ (536)	$ 97,357

(1) Amortized cost of HTM securities includes adjustments made to the cost basis of an investment for accretion, amortization, and/or previous 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)

	June 30, 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						
Other U.S. obligations	$ 208	$ —	$ 16	$ (1)	$ 224	$ (1)
GSE and Tennessee Valley Authority obligations	2,474	(6)	—	—	2,474	(6)
State or local housing agency obligations	271	—	1,088	(87)	1,359	(87)
Total non-mortgage-backed securities	2,953	(6)	1,104	(88)	4,057	(94)
Mortgage-backed securities						
Other U.S. obligations single-family MBS	2,095	(19)	1,051	(3)	3,146	(22)
GSE single-family MBS	7,968	(78)	5,033	(63)	13,001	(141)
GSE multifamily MBS	2,932	(22)	3,014	(11)	5,946	(33)
Private-label residential MBS	29	—	2,235	(210)	2,264	(210)
Manufactured housing loan ABS	12	—	7	(1)	19	(1)
Home equity loan ABS	—	—	48	(2)	48	(2)
Total mortgage-backed securities	13,036	(119)	11,388	(290)	24,424	(409)
Total	$ 15,989	$ (125)	$ 12,492	$ (378)	$ 28,481	$ (503)

	December 31, 2016					
	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						
Other U.S. obligations	$ 37	$ —	$ 16	$ (1)	$ 53	$ (1)
GSE and Tennessee Valley Authority obligations	2,605	(6)	—	—	2,605	(6)
State or local housing agency obligations	368	(13)	843	(91)	1,211	(104)
Total non-mortgage-backed securities	3,010	(19)	859	(92)	3,869	(111)
Mortgage-backed securities						
Other U.S. obligations single-family MBS	2,896	(25)	1,503	(12)	4,399	(37)
GSE single-family MBS	16,052	(164)	6,237	(102)	22,289	(266)
GSE multifamily MBS	11,349	(45)	4,973	(25)	16,322	(70)
Private-label residential MBS	66	—	3,148	(261)	3,214	(261)
Manufactured housing loan ABS	—	—	7	(1)	7	(1)
Home equity loan ABS	6	—	47	(3)	53	(3)
Total mortgage-backed securities	30,369	(234)	15,915	(404)	46,284	(638)
Total	$ 33,379	$ (253)	$ 16,774	$ (496)	$ 50,153	$ (749)

(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.

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

	June 30, 2017			December 31, 2016		
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	$ 4,899	$ 4,899	$ 4,898	$ 4,917	$ 4,917	$ 4,919
Due after one year through five years	3,715	3,715	3,722	3,879	3,879	3,885
Due after five years through ten years	1,017	1,017	1,049	799	799	826
Due after ten years	3,005	3,005	2,989	2,951	2,951	2,912
Total non-mortgage-backed securities	12,636	12,636	12,658	12,546	12,546	12,542
Mortgage-backed securities(2)	84,599	84,213	85,277	84,487	84,055	84,815
Total	$ 97,235	$ 96,849	$ 97,935	$ 97,033	$ 96,601	$ 97,357

(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 either 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 June 30, 2017	Three Months Ended June 30, 2016	Six Months Ended June 30, 2017	Six Months Ended June 30, 2016
Proceeds from sale of HTM securities	$ 101	$ 67	$ 101	$ 115
Carrying value of HTM securities sold	99	66	99	114
Net realized gains (losses) from sale of HTM securities	$ 2	$ 1	$ 2	$ 1

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-14, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016. The FHLBanks' uniform framework is disclosed in *Note 7 - Other-than-Temporary Impairment Analysis*, pages F-30 to F-31, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016.

Certain Private-label MBS

The FHLBanks' system-wide governance committee developed a short-term housing price forecast with projected changes ranging from a decrease of 5.0% to an increase of 11.0% over the twelve month period beginning April 1, 2017. For the vast majority of markets, the projected short-term housing price changes range from an increase of 1% to an increase of 6.0%. Thereafter, a unique path is projected for each geographic area based on an internally developed framework derived from historical data.

Table 6.1 presents the June 30, 2017 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 June 30, 2017, 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 June 30, 2017
(dollars in millions)

	Held-to-Maturity Securities(1)				Available-for-Sale Securities(1)		
	Unpaid Principal Balance	Amortized Cost	Carrying Value	Fair Value	Unpaid Principal Balance	Amortized Cost	Fair Value
Private-label residential MBS(2)							
Prime	$ 719	$ 589	$ 450	$ 633	$ 2,192	$ 1,773	$ 1,982
Alt-A	1,147	871	688	959	4,966	4,027	4,312
Subprime	409	225	184	307	—	—	—
Total private-label residential MBS	2,275	1,685	1,322	1,899	7,158	5,800	6,294
Home equity loan ABS(2)							
Subprime	109	84	61	103	—	—	—
Total home equity loan ABS	109	84	61	103	—	—	—
Total	$ 2,384	$ 1,769	$ 1,383	$ 2,002	$ 7,158	$ 5,800	$ 6,294

(1) Table 6.1 does not include all HTM and AFS securities that are in an unrealized loss position as of June 30, 2017. 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. The rollforward relates to the amount of credit losses on investment securities held by the FHLBanks for which a portion of OTTI losses was recognized in accumulated other comprehensive income (loss).

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Balance, at beginning of period	$ 2,924	$ 3,179	$ 2,983	$ 3,240
Additions				
Additional OTTI credit losses for securities upon which an OTTI charge was previously recognized (1)	8	6	13	15
Reductions				
Securities sold or matured during the period(2)	(6)	—	(6)	(2)
Increases in cash flows expected to be collected (accreted as interest income over the remaining lives of the applicable securities)	(61)	(64)	(125)	(132)
Balance, at end of period	$ 2,865	$ 3,121	$ 2,865	$ 3,121

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(1) For the three months ended June 30, 2017 and 2016, additional OTTI credit losses for securities upon which an OTTI charge was previously recognized relates to all securities that were also previously impaired prior to April 1, 2017 and 2016. For the six months ended June 30, 2017 and 2016, additional OTTI credit losses for securities upon which an OTTI charge was previously recognized relates to all securities that were also previously impaired prior to January 1, 2017 and 2016.

(2) Represents reductions related to securities sold or having reached final maturity during the period, and therefore are no longer held by the FHLBanks at the end of the period.

All other AFS and HTM Investment Securities

At June 30, 2017, 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 June 30, 2017.

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 discount note rates.

Table 7.1 - Advances Redemption Terms
(dollars in millions)

Contractual Maturity	June 30, 2017 Amount	June 30, 2017 Weighted-Average Interest Rate	December 31, 2016 Amount	December 31, 2016 Weighted-Average Interest Rate
Overdrawn demand and overnight deposit accounts	$ 82	5.91%	$ 6	1.53%
Due in 1 year or less	361,441	1.29%	286,615	0.91%
Due after 1 year through 2 years	119,700	1.49%	141,504	1.27%
Due after 2 years through 3 years	68,004	1.61%	86,360	1.25%
Due after 3 years through 4 years	55,760	1.61%	53,816	1.32%
Due after 4 years through 5 years	29,811	1.84%	53,765	1.41%
Thereafter	70,154	1.75%	80,795	1.38%
Index-amortizing advances(1)	1,424	2.71%	1,448	2.76%
Total par value	706,376	1.45%	704,309	1.15%
Commitment fees	(1)		(1)	
Discounts on AHP advances	(28)		(29)	
Premiums	112		140	
Discounts	(54)		(59)	
Hedging adjustments	418		846	
Fair value option valuation adjustments	26		19	
Total	$ 706,849		$ 705,225	

(1) Index-amortizing advances require repayment according to predetermined amortization schedules linked to the level of various indices. Generally, as market interest rates rise (fall), the maturity of an index-amortizing advance extends (contracts).

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). At June 30, 2017 and December 31, 2016, the FHLBanks had callable and prepayable advances outstanding totaling $155.5 billion and $215.5 billion. 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. At June 30, 2017 and December 31, 2016, the FHLBanks had putable advances outstanding totaling $11.5 billion and $11.7 billion.

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. At June 30, 2017 and December 31, 2016, the FHLBanks had convertible advances outstanding totaling $2.3 billion and $3.1 billion.

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	
	June 30, 2017	December 31, 2016	June 30, 2017	December 31, 2016
Overdrawn demand and overnight deposit accounts	$ 82	$ 6	$ 82	$ 6
Due in 1 year or less	462,710	444,438	366,572	293,854
Due after 1 year through 2 years	103,319	103,668	119,756	138,499
Due after 2 years through 3 years	54,603	62,894	67,620	86,466
Due after 3 years through 4 years	35,812	34,513	55,773	52,780
Due after 4 years through 5 years	21,970	31,367	29,754	53,717
Thereafter	26,456	25,975	65,395	77,539
Index-amortizing advances	1,424	1,448	1,424	1,448
Total par value	$ 706,376	$ 704,309	$ 706,376	$ 704,309

(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)

Contractual Maturity	June 30, 2017	December 31, 2016
Total fixed-rate	$ 376,811	$ 329,776
Total variable-rate	329,565	374,533
Total par value	$ 706,376	$ 704,309

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 $503.3 billion and $509.0 billion at June 30, 2017 and December 31, 2016. These advances were made to 104 and 98 borrowers (members and non-members) at June 30, 2017 and December 31, 2016, which represented 71.3% and 72.3% of total advances outstanding at June 30, 2017 and December 31, 2016. (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)

	June 30, 2017	December 31, 2016
Fixed-rate, long-term single-family mortgage loans	$ 43,390	$ 40,941
Fixed-rate, medium-term(1) single-family mortgage loans	6,196	6,644
Total unpaid principal balance	49,586	47,585
Premiums	935	873
Discounts	(44)	(47)
Deferred loan costs, net	(3)	(3)
Hedging adjustments	81	86
Total mortgage loans held for portfolio	$ 50,555	$ 48,494

(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)

	June 30, 2017	December 31, 2016
Conventional mortgage loans	$ 45,656	$ 43,519
Government-guaranteed or -insured mortgage loans	3,930	4,066
Total unpaid principal balance	$ 49,586	$ 47,585

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-16 to F-17 and pages F-35 to F-41 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, 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 June 30, 2017 and December 31, 2016, 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 June 30, 2017 and December 31, 2016, 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 six months ended June 30, 2017 and 2016.

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 June 30, 2017 and December 31, 2016, 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 June 30, 2017 and December 31, 2016. 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 six months ended June 30, 2017 and 2016.

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Balance, at beginning of period	$ 18	$ 18	$ 18	$ 18
Charge-offs, net of recoveries	(2)	(1)	(2)	(2)
Provision (reversal) for credit losses	1	1	1	2
Balance, at end of period	$ 17	$ 18	$ 17	$ 18

Table 9.2 presents the recorded investment in mortgage loans by impairment methodology at June 30, 2017 and December 31, 2016. 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)

	June 30, 2017	December 31, 2016
Allowance for credit losses		
Individually evaluated for impairment	$ 5	$ 6
Collectively evaluated for impairment	12	12
Total allowance for credit losses	$ 17	$ 18
Recorded investment		
Individually evaluated for impairment	$ 276	$ 307
Collectively evaluated for impairment	46,486	44,243
Total recorded investment	$ 46,762	$ 44,550

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 June 30, 2017 and December 31, 2016.

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

	June 30, 2017		
	Conventional MPF/MPP	Government-Guaranteed or -Insured	Total
Past due 30-59 days	$ 330	$ 146	$ 476
Past due 60-89 days	83	45	128
Past due 90 days or more	210	59	269
Total past due mortgage loans	623	250	873
Total current mortgage loans	46,139	3,767	49,906
Total mortgage loans(1)	$ 46,762	$ 4,017	$ 50,779
Other delinquency statistics			
In process of foreclosure, included above(2)	$ 111	$ 19	$ 130
Serious delinquency rate(3)	0.46%	1.49%	0.54%
Past due 90 days or more and still accruing interest	$ 42	$ 59	$ 101
Loans on non-accrual status	$ 205	$ —	$ 205

	December 31, 2016		
	Conventional MPF/MPP	Government-Guaranteed or -Insured	Total
Past due 30-59 days	$ 386	$ 178	$ 564
Past due 60-89 days	102	55	157
Past due 90 days or more	256	75	331
Total past due mortgage loans	744	308	1,052
Total current mortgage loans	43,806	3,850	47,656
Total mortgage loans(1)	$ 44,550	$ 4,158	$ 48,708
Other delinquency statistics			
In process of foreclosure, included above(2)	$ 136	$ 21	$ 157
Serious delinquency rate(3)	0.59%	1.83%	0.69%
Past due 90 days or more and still accruing interest	$ 53	$ 75	$ 128
Loans on non-accrual status	$ 240	$ —	$ 240

(1) The difference between the recorded investment and the carrying value of total mortgage loans of $224 million and $214 million at June 30, 2017 and December 31, 2016, relates primarily to accrued interest. (See *Note 8 - Mortgage Loans* for details on the carrying values of total mortgage loans.)
(2) 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.
(3) 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 June 30, 2017 and December 31, 2016.

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

	June 30, 2017			December 31, 2016		
	Recorded Investment	Unpaid Principal Balance	Related Allowance	Recorded Investment	Unpaid Principal Balance	Related Allowance
With no related allowance	$ 246	$ 250	$ —	$ 275	$ 281	$ —
With an allowance	29	29	5	31	31	6
Total	$ 275	$ 279	$ 5	$ 306	$ 312	$ 6

Table 9.5 presents the average recorded investment and related interest income recognized on impaired loans during the three and six months ended June 30, 2017 and 2016.

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 June 30,			
	2017		2016	
	Average Recorded Investment	Interest Income Recognized	Average Recorded Investment	Interest Income Recognized
With no related allowance	$ 252	$ 1	$ 286	$ 1
With an allowance	30	—	34	—
Total	$ 282	$ 1	$ 320	$ 1

	Six Months Ended June 30,			
	2017		2016	
	Average Recorded Investment	Interest Income Recognized	Average Recorded Investment	Interest Income Recognized
With no related allowance	$ 258	$ 2	$ 294	$ 2
With an allowance	31	1	35	1
Total	$ 289	$ 3	$ 329	$ 3

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-39 to F-40 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, for additional information on credit enhancements for the Mortgage Partnership Finance Program and Mortgage Purchase Program.)

At June 30, 2017 and December 31, 2016, the amounts of First Loss Account remaining to cover the losses under the MPF program were $403 million and $396 million. This balance excludes amounts that may be recovered through the recapture of performance-based credit enhancement fees. The First Loss Account represents the first layer or portion of credit losses that each 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 June 30, 2017 and December 31, 2016, the amounts of Lender Risk Account remaining to cover future potential losses under the MPP were $326 million and $311 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 outstanding as of June 30, 2017 and December 31, 2016 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.

An MPF or MPP loan considered to be a troubled debt restructuring is individually evaluated for impairment when determining its related allowance for credit losses. Credit loss is measured by factoring in expected cash shortfalls (i.e., loss severity rate) incurred as of the reporting date as well as the economic loss attributable to delaying the original contractual principal and interest due dates, if applicable. As of June 30, 2017 and December 31, 2016, the recorded investment balances of mortgage loans classified as troubled debt restructurings were $141 million and $152 million.

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

These investments 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 June 30, 2017 and December 31, 2016. 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 June 30, 2017 and December 31, 2016.

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-41 to F-49 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, 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 (excluding fair value adjustments related to variation margin on daily settled contracts), and total derivative assets and liabilities. Total derivative assets and liabilities include the effect of netting adjustments, cash collateral, and variation margin for daily settled contracts. 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)

	June 30, 2017			December 31, 2016		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as hedging instruments						
Interest-rate swaps	$ 329,614	$ 1,664	$ 3,405	$ 345,673	$ 1,923	$ 4,273
Interest-rate swaptions	2	—	—	3	—	—
Total derivatives designated as hedging instruments	329,616	1,664	3,405	345,676	1,923	4,273
Derivatives not designated as hedging instruments						
Interest-rate swaps	103,497	467	550	123,240	520	627
Interest-rate swaptions	2,770	34	—	3,111	54	—
Interest-rate caps or floors	27,485	31	4	26,671	75	13
Interest-rate futures or forwards	595	1	1	767	2	1
Mortgage delivery commitments	1,740	2	4	1,584	4	15
Other	551	5	4	328	6	5
Total derivatives not designated as hedging instruments	136,638	540	563	155,701	661	661
Total derivatives before netting and collateral adjustments	$ 466,254	2,204	3,968	$ 501,377	2,584	4,934
Netting adjustments, cash collateral, and variation margin for daily settled contracts(1)		(779)	(3,395)		(1,177)	(4,124)
Total derivative assets and total derivative liabilities		$ 1,425	$ 573		$ 1,407	$ 810

(1) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, cash collateral and related accrued interest held or placed by that FHLBank with the same clearing agent and/or counterparty, and effective January 3, 2017, includes fair value adjustments on derivatives for which variation margin is characterized as a daily settled contract. Cash collateral posted and related accrued interest was $2,349 million and $3,600 million at June 30, 2017 and December 31, 2016. Cash collateral received and related accrued interest was $286 million and $653 million at June 30, 2017 and December 31, 2016. Variation margin for daily settled contracts was $630 million at June 30, 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 June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Derivatives designated as hedging instruments				
Total net gains related to fair value hedge ineffectiveness(1)	$ (2)	$ (10)	$ 313	$ (43)
Total net gains related to cash flow hedge ineffectiveness	1	3	2	3
Derivatives not designated as hedging instruments				
Economic hedges				
Interest-rate swaps	17	(46)	39	(221)
Interest-rate swaptions	(16)	7	(24)	17
Interest-rate caps or floors	(18)	(18)	(37)	(31)
Interest-rate futures or forwards	(5)	(16)	(7)	(29)
Net interest settlements	(14)	(13)	(26)	(44)
Other	—	—	—	(2)
Mortgage delivery commitments	17	19	26	39
Intermediary interest-rate swap transactions	1	1	4	1
Total net gains (losses) related to derivatives not designated as hedging instruments	(18)	(66)	(25)	(270)
Other(2)	2	—	3	—
Net gains (losses) on derivatives and hedging activities	$ (17)	$ (73)	$ 293	$ (310)

(1) Consists of interest-rate swaps.
(2) Consist of price alignment amount on 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 June 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	$ (269)	$ 276	$ 7	$ (204)
Consolidated bonds	274	(279)	(5)	77
Available-for-sale securities	(218)	214	(4)	(122)
Total	$ (213)	$ 211	$ (2)	$ (249)

	Three Months Ended June 30, 2016			
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	$ (482)	$ 494	$ 12	$ (456)
Consolidated bonds	156	(148)	8	236
Consolidated discount notes	2	(3)	(1)	1
Available-for-sale securities	(494)	465	(29)	(165)
Total	$ (818)	$ 808	$ (10)	$ (384)

	Six Months Ended June 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	$ 398	$ (71)	$ 327	$ (456)
Consolidated bonds	138	(150)	(12)	200
Consolidated discount notes	3	(3)	—	(3)
Available-for-sale securities	(88)	86	(2)	(257)
Total	$ 451	$ (138)	$ 313	$ (516)

	Six Months Ended June 30, 2016			
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	$ (2,035)	$ 2,065	$ 30	$ (983)
Consolidated bonds	646	(674)	(28)	514
Consolidated discount notes	8	(11)	(3)	(4)
Available-for-sale securities	(1,332)	1,290	(42)	(337)
Total	$ (2,713)	$ 2,670	$ (43)	$ (810)

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(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 $(1) million and $(18) million of amortization/accretion related to fair value hedging activities for the three months ended June 30, 2017 and 2016 and $(296) million and $(32) million for the six months ended June 30, 2017 and 2016.

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)

	Three Months Ended June 30, 2017			
Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	**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 (Losses) Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)**
Interest-rate swaps				
Consolidated bonds	$ (5)	Interest expense	$ (4)	$ 1
Consolidated discount notes	8	Interest expense	(1)	—
Interest-rate caps or floors				
Advances	—	Interest income	2	—
Total	$ 3		$ (3)	$ 1

	Three Months Ended June 30, 2016			
Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	**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 (Losses) Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)**
Interest-rate swaps				
Consolidated bonds	$ (10)	Interest expense	$ (8)	$ (1)
Consolidated discount notes	(19)	Interest expense	(1)	4
Interest-rate caps or floors				
Advances	—	Interest income	2	—
Total	$ (29)		$ (7)	$ 3

	Six Months Ended June 30, 2017			
Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	**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 (Losses) Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)**
Interest-rate swaps				
Consolidated bonds	$ (6)	Interest expense	$ (10)	$ 1
Consolidated discount notes	65	Interest expense	(2)	1
Interest-rate caps or floors				
Advances	—	Interest income	5	—
Total	$ 59		$ (7)	$ 2

	Six Months Ended June 30, 2016			
Derivatives and Hedged Items in Cash Flow Hedging Relationships(1)	**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 (Losses) Recognized in Net Gains (Losses) on Derivatives and Hedging Activities (Ineffective Portion)**
Interest-rate swaps				
Consolidated bonds	$ (28)	Interest expense	$ (17)	$ (1)
Consolidated discount notes	(132)	Interest expense	(2)	4
Interest-rate caps or floors				
Advances	—	Interest income	5	—
Total	$ (160)		$ (14)	$ 3

(1) Table 10.4 does not include $(51) million and $(61) million for the effect of net interest settlements on net interest income attributable to open cash flow hedges for the three months ended June 30, 2017 and 2016 and $(105) million and $(117) million for the six months ended June 30, 2017 and 2016.

For the three and six months ended June 30, 2017 and 2016, 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 June 30, 2017, $11 million of deferred net losses on derivative instruments in AOCI is expected to be reclassified to earnings during the next twelve months. At June 30, 2017, the maximum length of time over which an FHLBank is hedging its exposure to the variability in future cash flows for forecasted transactions is fifteen 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 with collateral delivery thresholds on the majority of 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. The aggregate fair value of all uncleared derivative instruments with credit-risk-related contingent features that were in a net liability position (before cash collateral and related accrued interest) at June 30, 2017, was $1.1 billion, for which the FHLBanks have posted collateral with a fair value of $0.9 billion 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 $0.1 billion of collateral at fair value to their uncleared derivatives counterparties at June 30, 2017.

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.Clearnet LLC and/or CME Clearing. Effective January 3, 2017, CME Clearing made certain amendments to its rulebook, changing the legal characterization of variation margin payments to be daily settlement payments, rather than collateral. Variation margin related to LCH.Clearnet LLC contracts continues to be presented as 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.

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. 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 June 30, 2017.

Offsetting of Derivative Assets and Derivative Liabilities

An FHLBank presents derivative instruments, related cash collateral, including initial and certain variation margin, 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.

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 and variation margin for daily settled contracts.

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

	June 30, 2017		December 31, 2016	
	Derivative Assets	Derivative Liabilities	Derivative Assets	Derivative Liabilities
Derivative instruments meeting netting requirements				
Gross recognized amount				
Uncleared derivatives	$ 804	$ 1,901	$ 947	$ 2,586
Cleared derivatives	1,397	2,062	1,632	2,333
Total gross recognized amount	2,201	3,963	2,579	4,919
Gross amounts of netting adjustments, cash collateral, and variation margin for daily settled contracts(1)				
Uncleared derivatives	(623)	(1,337)	(789)	(1,802)
Cleared derivatives	(156)	(2,058)	(388)	(2,322)
Total gross amounts of netting adjustments, cash collateral, and variation margin for daily settled contracts(1)	(779)	(3,395)	(1,177)	(4,124)
Net amounts after netting adjustments, cash collateral, and variation margin for daily settled contracts				
Uncleared derivatives	181	564	158	784
Cleared derivatives	1,241	4	1,244	11
Total net amounts after netting adjustments, cash collateral, and variation margin for daily settled contracts	1,422	568	1,402	795
Derivative instruments not meeting netting requirements(2)				
Uncleared derivatives	3	5	5	15
Total derivative instruments not meeting netting requirements(2)	3	5	5	15
Total derivative assets and total derivative liabilities				
Uncleared derivatives	184	569	163	799
Cleared derivatives	1,241	4	1,244	11
Total derivative assets and total derivative liabilities presented on the Combined Statement of Condition	1,425	573	1,407	810
Non-cash collateral received or pledged not offset				
Can be sold or repledged				
Uncleared derivatives	—	12	—	30
Cleared derivatives	—	—	—	2
Total can be sold or repledged	—	12	—	32
Cannot be sold or repledged				
Uncleared derivatives	125	298	113	291
Cleared derivatives	(2)	4	(2)	9
Total cannot be sold or repledged	123	302	111	300
Net amount(3)				
Uncleared derivatives	59	259	50	478
Cleared derivatives	1,243	—	1,246	—
Total net amount(3)	$ 1,302	$ 259	$ 1,296	$ 478

(1) Variation margin for daily settled contracts was $630 million at June 30, 2017.
(2) Represents derivatives that are not subject to an enforceable netting agreement (e.g., mortgage delivery commitments and certain interest-rate futures or forwards).
(3) Any overcollateralization at an FHLBank's individual clearing agent and/or counterparty level is not included in the determination of the net amount. At June 30, 2017 and December 31, 2016, the FHLBanks had additional net credit exposure of $637 million and $700 million due to instances where an FHLBank's non-cash collateral to a counterparty exceeded the FHLBank's net derivative liability position.

Note 11 - Deposits

The FHLBanks offer demand and overnight deposit programs to members and qualifying non-members. In addition, certain FHLBanks offer short-term interest-bearing deposit programs to members, and in certain cases, 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 items as other deposits.

Table 11.1 - Deposits
(dollars in millions)

	June 30, 2017	December 31, 2016
Interest-bearing		
Demand and overnight	$ 8,623	$ 7,101
Term	384	634
Other	15	13
Total interest-bearing	9,022	7,748
Non-interest-bearing		
Demand and overnight	138	167
Other	178	174
Total non-interest-bearing	316	341
Total deposits	$ 9,338	$ 8,089

Note 12 - Consolidated Obligations

Consolidated obligations consist of consolidated bonds and consolidated discount notes. 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 at or below their face value and are redeemed at par when they mature.

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

	Book Value	Par Value	Weighted-Average Interest Rate(1)
June 30, 2017	$ 428,684	$ 429,248	0.92%
December 31, 2016	$ 409,815	$ 410,122	0.48%

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(1) Represents yield to maturity excluding concession fees.

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

	June 30, 2017		December 31, 2016	
Year of Contractual Maturity	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
Due in 1 year or less	$ 356,122	1.09%	$ 335,511	0.86%
Due after 1 year through 2 years	100,764	1.26%	109,532	1.06%
Due after 2 years through 3 years	36,348	1.69%	44,422	1.48%
Due after 3 years through 4 years	21,219	1.92%	18,798	2.07%
Due after 4 years through 5 years	23,628	1.84%	28,007	1.77%
Thereafter	44,032	2.73%	42,575	2.67%
Index-amortizing notes	53	5.31%	123	4.74%
Total par value	582,166	1.34%	578,968	1.16%
Net premiums	401		436	
Hedging adjustments	(290)		(437)	
Fair value option valuation adjustments	(29)		(40)	
Total	$ 582,248		$ 578,927	

Consolidated obligations outstanding were issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms that may use a variety of indices for interest-rate resets, such as 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 obligations 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)

Par Value of Consolidated Bonds	June 30, 2017	December 31, 2016
Non-callable/non-putable	$ 517,112	$ 513,846
Callable	65,054	65,122
Total par value	$ 582,166	$ 578,968

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

Year of Contractual Maturity or Next Call Date	June 30, 2017	December 31, 2016
Due in 1 year or less	$ 414,161	$ 395,474
Due after 1 year through 2 years	94,529	99,898
Due after 2 years through 3 years	30,134	38,185
Due after 3 years through 4 years	13,644	13,441
Due after 4 years through 5 years	13,109	14,927
Thereafter	16,536	16,920
Index-amortizing notes	53	123
Total par value	$ 582,166	$ 578,968

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 is required to 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 is required to 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 June 30, 2017, each FHLBank was in compliance with FHFA regulatory capital requirements.

Table 13.1 - Risk-Based Capital Requirements at June 30, 2017
(dollars in millions)

	Risk-Based Capital	
FHLBank	Minimum Requirement	Actual
Boston	$ 646	$ 3,691
New York	821	8,226
Pittsburgh	950	4,815
Atlanta	1,616	6,617
Cincinnati	782	5,146
Indianapolis	851	2,794
Chicago	1,033	4,982
Des Moines	940	7,788
Dallas	779	3,027
Topeka	345	2,014
San Francisco	2,094	6,280

Table 13.2 - Regulatory Capital Requirements at June 30, 2017
(dollars in millions)

	Regulatory Capital Ratio		Regulatory Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	4.0%	6.1%	$ 2,430	$ 3,691
New York	4.0%	5.3%	6,221	8,226
Pittsburgh	4.0%	4.8%	4,033	4,815
Atlanta	4.0%	5.0%	5,347	6,617
Cincinnati	4.0%	4.7%	4,362	5,146
Indianapolis	4.0%	4.6%	2,428	2,794
Chicago	4.0%	6.1%	3,271	4,982
Des Moines	4.0%	4.7%	6,600	7,788
Dallas	4.0%	4.8%	2,515	3,027
Topeka	4.0%	4.5%	1,990	2,230
San Francisco	4.0%	6.2%	4,077	6,280

Table 13.3 - Leverage Capital Requirements at June 30, 2017
(dollars in millions)

	Leverage Capital Ratio		Leverage Capital	
FHLBank	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	5.0%	9.1%	$ 3,038	$ 5,537
New York	5.0%	7.9%	7,776	12,339
Pittsburgh	5.0%	7.2%	5,041	7,223
Atlanta	5.0%	7.4%	6,684	9,925
Cincinnati	5.0%	7.1%	5,453	7,719
Indianapolis	5.0%	6.9%	3,036	4,191
Chicago	5.0%	9.1%	4,089	7,473
Des Moines	5.0%	7.1%	8,249	11,681
Dallas	5.0%	7.2%	3,143	4,541
Topeka	5.0%	6.5%	2,487	3,237
San Francisco	5.0%	9.2%	5,096	9,420

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, 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 establishes amounts to be retained in restricted retained earnings, which are not made available for dividends in the current dividend period. These amounts are not related to the Capital Agreement; however, they are also classified as restricted retained earnings on the Combined Statement of Condition. The FHLBank of San Francisco retains in restricted retained earnings any cumulative net gains in earnings (net of applicable assessments) resulting from gains or losses on derivatives and associated hedged items and financial instruments carried at fair value (valuation adjustments). In addition to any cumulative net gains resulting from valuation adjustments, the FHLBank of San Francisco holds an additional amount in restricted retained earnings intended to protect paid-in capital from the effects of an extremely adverse credit event, an extremely adverse operations risk event, a cumulative net loss related to the FHLBank of San Francisco's derivatives and associated hedged items and financial instruments carried at fair value, an extremely adverse change in the market value of the FHLBank of San Francisco's capital, a significant amount of additional credit-related OTTI on private-label residential MBS, or some combination of these effects, especially in periods of extremely low net income, and to maintain capital compliance.

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 Excess Stock Repurchase, Retained Earnings, and Dividend 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, 2015	$ 10,447	$ 2,190	$ 1,660	$ 3,850	$ 14,297
Net income	1,312	328	(10)	318	1,630
Dividends on capital stock					
Cash	(586)	—	—	—	(586)
Stock	(46)	—	—	—	(46)
Balance, June 30, 2016	$ 11,127	$ 2,518	$ 1,650	$ 4,168	$ 15,295
Balance, December 31, 2016	$ 11,789	$ 2,873	$ 1,668	$ 4,541	$ 16,330
Net income	1,221	332	103	435	1,656
Dividends on capital stock					
Cash	(691)	—	—	—	(691)
Stock	(57)	—	—	—	(57)
Balance, June 30, 2017	$ 12,262	$ 3,205	$ 1,771	$ 4,976	$ 17,238

(1) Represents retained earnings restricted by the FHLBank of San Francisco's Excess Stock Repurchase, Retained Earnings, and Dividend Framework related to valuation adjustments and other restricted retained earnings.

Mandatorily Redeemable Capital Stock

An FHLBank generally reclassifies capital stock subject to redemption from capital to the mandatorily redeemable capital stock liability upon expiration of a grace period, if applicable, after a member exercises a written redemption right, or gives notice of intent to withdraw from membership, or attains non-member status by merger or acquisition, relocation, charter termination, or involuntary termination from membership. Shares of capital stock meeting these definitions are reclassified to mandatorily redeemable capital stock at fair value. Dividends related to capital stock classified as mandatorily redeemable capital stock are accrued at the expected dividend rate and reported as interest expense on the Combined Statement of Income. For the three months ended June 30, 2017 and 2016, dividends on mandatorily redeemable capital stock of $17 million and $23 million were recorded as interest expense. For the six months ended June 30, 2017 and 2016, dividends on mandatorily redeemable capital stock of $38 million and $40 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 June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Balance, beginning of period	$ 1,462	$ 1,912	$ 1,704	$ 745
Net capital stock subject to mandatory redemption reclassified (to)/ from capital	499	254	696	1,912 (a)
Redemption/repurchase of mandatorily redeemable capital stock	(477)	(321)	(914)	(811)
Other(1)	—	—	(2)	(1)
Balance, end of period	$ 1,484	$ 1,845	$ 1,484	$ 1,845

(a) Includes $1,276 million of reclassifications to 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.

(1) Represents 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)

	June 30, 2017	December 31, 2016
Year 1	$ 16	$ 7
Year 2	5	17
Year 3	36	36
Year 4	396	388
Year 5	318	27
Thereafter(1)	629	1,084
Past contractual redemption date due to remaining activity(2)	84	145
Total	$ 1,484	$ 1,704

(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 June 30, 2017, no FHLBank had excess capital stock outstanding totaling more than one percent of its total assets.

Capital Classification Determination

The FHFA has implemented the prompt corrective action provisions of the Housing and Economic Recovery Act of 2008, as amended. The FHFA rule defined four capital classifications for the FHLBanks: adequately capitalized, undercapitalized, significantly undercapitalized, and critically undercapitalized, and the FHFA issued a regulation implementing the prompt corrective action provisions that apply to FHLBanks that are not deemed to be adequately capitalized. 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 is 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 six months ended June 30, 2017 and 2016.

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

	Three Months Ended June 30,						
	Net Unrealized Gains (Losses) on AFS Securities (Note 4)	Net Unrealized Gains (Losses) on HTM Securities Transferred from AFS Securities	Net Non-Credit Portion of OTTI Losses on AFS Securities (Notes 4 and 6)	Net Non-Credit Portion of OTTI 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, March 31, 2016	$ 372	$ —	$ 158	$ (502)	$ (750)	$ (83)	$ (805)
Other comprehensive income before reclassifications							
Unrealized gains (losses)	24	—	51	—	(29)	—	46
Non-credit OTTI losses	—	—	(1)	(1)	—	—	(2)
Change in fair value of other-than-temporarily impaired securities	—	—	30	—	—	—	30
Accretion of non-credit loss	—	—	—	24	—	—	24
Reclassifications from accumulated other comprehensive income (loss) to net income							
Reclassification of realized net (gains) losses included in net income	(4)	—	1	—	—	—	(3)
Non-credit OTTI to credit OTTI	—	—	2	1	—	—	3
Amortization on hedging activities(1)	—	—	—	—	4	—	4
Amortization - pension and postretirement	—	—	—	—	—	(2)	(2)
Net current period other comprehensive income (loss)	20	—	83	24	(25)	(2)	100
Balance, June 30, 2016	$ 392	$ —	$ 241	$ (478)	$ (775)	$ (85)	$ (705)
Balance, March 31, 2017	$ 673	$ —	$ 384	$ (407)	$ (327)	$ (100)	$ 223
Other comprehensive income before reclassifications							
Unrealized gains (losses)	91	—	62	—	3	—	156
Non-credit OTTI losses	—	—	(3)	—	—	—	(3)
Change in fair value of other-than-temporarily impaired securities	—	—	38	—	—	—	38
Accretion of non-credit loss	—	—	—	20	—	—	20
Reclassifications from accumulated other comprehensive income (loss) to net income							
Reclassification of realized net (gains) losses included in net income	(1)	—	—	—	—	—	(1)
Non-credit OTTI to credit OTTI	—	—	4	1	—	—	5
Amortization on hedging activities(1)	—	—	—	—	2	—	2
Amortization - pension and postretirement	—	—	—	—	—	2	2
Net current period other comprehensive income (loss)	90	—	101	21	5	2	219
Balance, June 30, 2017	$ 763	$ —	$ 485	$ (386)	$ (322)	$ (98)	$ 442

	Six Months Ended June 30,						
	Net Unrealized Gains (Losses) on AFS Securities (Note 4)	Net Unrealized Gains (Losses) on HTM Securities Transferred from AFS Securities	Net Non-Credit Portion of OTTI Losses on AFS Securities (Notes 4 and 6)	Net Non-Credit Portion of OTTI 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, 2015	$ 366	$ (1)	$ 241	$ (527)	$ (626)	$ (87)	$ (634)
Other comprehensive income before reclassifications							
Unrealized gains (losses)	42	1	—	—	(160)	—	(117)
Non-credit OTTI losses	—	—	(12)	(1)	—	—	(13)
Change in fair value of other-than-temporarily impaired securities	—	—	7	—	—	—	7
Accretion of non-credit loss	—	—	—	48	—	—	48
Reclassifications from accumulated other comprehensive income (loss) to net income							
Reclassification of realized net (gains) losses included in net income	(16)	—	—	—	—	—	(16)
Non-credit OTTI to credit OTTI	—	—	5	2	—	—	7
Amortization on hedging activities(1)	—	—	—	—	11	—	11
Amortization - pension and postretirement	—	—	—	—	—	2	2
Net current period other comprehensive income (loss)	26	1	—	49	(149)	2	(71)
Balance, June 30, 2016	$ 392	$ —	$ 241	$ (478)	$ (775)	$ (85)	$ (705)
Balance, December 31, 2016	$ 407	$ —	$ 355	$ (432)	$ (386)	$ (101)	$ (157)
Other comprehensive income before reclassifications							
Unrealized gains (losses)	358	—	73	—	59	—	490
Non-credit OTTI losses	—	—	(3)				(3)
Change in fair value of other-than-temporarily impaired securities	—	—	53	—	—	—	53
Accretion of non-credit loss	—	—	—	45	—	—	45
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	—	—	7	1	—	—	8
Amortization on hedging activities(1)	—	—	—	—	5	—	5
Amortization - pension and postretirement	—	—	—	—	—	3	3
Net current period other comprehensive income (loss)	356	—	130	46	64	3	599
Balance, June 30, 2017	$ 763	$ —	$ 485	$ (386)	$ (322)	$ (98)	$ 442

	Three Months Ended June 30,		Six Months Ended June 30,	
(1) **Amortization on hedging activities consists of amortization to:**	2017	2016	2017	2016
Interest income - Advances	$ 2	$ 2	$ 5	$ 5
Interest expense - Consolidated bonds	(4)	(8)	(10)	(17)
Interest expense - Consolidated discount notes	(1)	(1)	(2)	(2)
Net gains (losses) on derivatives and hedging activities	1	3	2	3
Total amortization on hedging activities	$ (2)	$ (4)	$ (5)	$ (11)

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. 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 June 30, 2017 and December 31, 2016.

Fair Value Hierarchy

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 on a non-recurring basis. 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 are 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 recorded at fair value on a recurring basis during the three and six months ended June 30, 2017 and 2016.

Table 15.1 presents the carrying value, fair value, and fair value hierarchy of financial assets and liabilities of the FHLBanks at June 30, 2017 and December 31, 2016. 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.

Table 15.1 - Fair Value Summary
(dollars in millions)

	June 30, 2017					
		Fair Value				
Financial Instruments	**Carrying Value**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Netting Adjustment, Cash Collateral, and Variation Margin for Daily Settled Contracts(1)**
Assets						
Cash and due from banks	$ 7,952	$ 7,952	$ 7,952	$ —	$ —	$ —
Interest-bearing deposits	3,122	3,122	2,293	829	—	—
Securities purchased under agreements to resell	48,417	48,417	—	48,417	—	—
Federal funds sold	74,622	74,622	—	74,622	—	—
Trading securities	8,261	8,261	19	8,242	—	—
Available-for-sale securities	81,277	81,277	48	74,916	6,313	—
Held-to-maturity securities	96,849	97,935	—	91,991	5,944	—
Advances(2)	706,849	707,544	—	707,544	—	—
Mortgage loans held for portfolio, net	50,538	51,183	—	51,034	149	—
Mortgage loans held for sale(3)	119	119	—	119	—	—
Accrued interest receivable	1,384	1,384	—	1,384	—	—
Derivative assets, net	1,425	1,425	—	2,204	—	(779)
Other assets	138	137	110	27	—	—
Liabilities						
Deposits	9,338	9,338	—	9,338	—	—
Consolidated obligations						
Discount notes(4)	428,684	428,679	—	428,679	—	—
Bonds(5)	582,248	583,299	—	583,299	—	—
Total consolidated obligations	1,010,932	1,011,978	—	1,011,978	—	—
Mandatorily redeemable capital stock	1,484	1,484	1,484	—	—	—
Accrued interest payable	1,196	1,196	—	1,196	—	—
Derivative liabilities, net	573	573	—	3,968	—	(3,395)
Other liabilities	91	90	74	16	—	—

		December 31, 2016				
		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	$ 7,441	$ 7,441	$ 7,441	$ —	$ —	$ —
Interest-bearing deposits	2,878	2,878	1,390	1,488	—	—
Securities purchased under agreements to resell	52,771	52,771	—	52,771	—	—
Federal funds sold	48,633	48,633	—	48,633	—	—
Trading securities	9,461	9,461	17	9,444	—	—
Available-for-sale securities	81,673	81,673	44	74,788	6,841	—
Held-to-maturity securities	96,601	97,357	—	90,942	6,415	—
Advances(2)	705,225	705,656	—	705,656	—	—
Mortgage loans held for portfolio, net	48,476	49,079	—	48,908	171	—
Mortgage loans held for sale(3)	44	44	—	44	—	—
Accrued interest receivable	1,260	1,260	—	1,260	—	—
Derivative assets, net	1,407	1,407	—	2,584	—	(1,177)
Other assets	107	107	98	9	—	—
Liabilities						
Deposits	8,089	8,089	—	8,089	—	—
Consolidated obligations						
Discount notes(4)	409,815	409,821	—	409,821	—	—
Bonds(5)	578,927	579,798	—	579,798	—	—
Total consolidated obligations	988,742	989,619	—	989,619	—	—
Mandatorily redeemable capital stock	1,704	1,704	1,704	—	—	—
Accrued interest payable	1,100	1,100	—	1,100	—	—
Derivative liabilities, net	810	810	—	4,934	—	(4,124)
Other liabilities	68	68	68	—	—	—

(1) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, cash collateral and related accrued interest held or placed by that FHLBank with the same clearing agent and/or counterparty, and effective January 3, 2017, includes fair value adjustments on derivatives for which variation margin is characterized as a daily settled contract. Variation margin for daily settled contracts was $630 million at June 30, 2017.

(2) Includes $9,033 million and $14,279 million of advances recorded under fair value option at June 30, 2017 and December 31, 2016.

(3) Represents mortgage loans held for sale recorded under fair value option, included in other assets on the Combined Statement of Condition at June 30, 2017 and December 31, 2016.

(4) Includes $4,203 million and $18,597 million of consolidated discount notes recorded under fair value option at June 30, 2017 and December 31, 2016.

(5) Includes $12,463 million and $16,898 million of consolidated bonds recorded under fair value option at June 30, 2017 and December 31, 2016.

Summary of Valuation Methodologies and Primary Inputs

A description of the valuation methodologies and primary inputs is disclosed in *Note 19 - Fair Value*, pages F-66 to F-70, of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016. There have been no significant changes in these valuation methodologies and primary inputs during the three and six months ended June 30, 2017.

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 June 30, 2017 and December 31, 2016, 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)

	June 30, 2017				
	Total	Level 1	Level 2	Level 3	Netting Adjustment, Cash Collateral, and Variation Margin for Daily Settled Contracts(1)
Recurring fair value measurements - Assets					
Trading securities					
U.S. Treasury obligations	$ 613	$ —	$ 613	$ —	$ —
Certificates of deposit	600	—	600	—	—
Other U.S. obligations	207	—	207	—	—
GSE and Tennessee Valley Authority obligations	4,899	—	4,899	—	—
State or local housing agency obligations	1	—	1	—	—
Other non-MBS	295	19	276	—	—
Other U.S. obligations single-family MBS	18	—	18	—	—
GSE single-family MBS	114	—	114	—	—
GSE multifamily MBS	1,514	—	1,514	—	—
Total trading securities	8,261	19	8,242	—	—
Available-for-sale securities					
Certificates of deposit	350	—	350	—	—
Other U.S. obligations	4,035	—	4,035	—	—
GSE and Tennessee Valley Authority obligations	16,370	—	16,370	—	—
State or local housing agency obligations	1,292	—	1,276	16	—
Federal Family Education Loan Program ABS	4,412	—	4,412	—	—
Other non-MBS	993	48	945	—	—
Other U.S. obligations single-family MBS	5,439	—	5,439	—	—
Other U.S. obligations multifamily MBS	492	—	492	—	—
GSE single-family MBS	8,804	—	8,804	—	—
GSE multifamily MBS	32,793	—	32,793	—	—
Private-label residential MBS	6,297	—	—	6,297	—
Total available-for-sale securities	81,277	48	74,916	6,313	—
Advances(2)	9,033	—	9,033	—	—
Mortgage loans held for sale(3)	119	—	119	—	—
Derivative assets, net					
Interest-rate related	1,423	—	2,202	—	(779)
Mortgage delivery commitments	2	—	2	—	—
Total derivative assets, net	1,425	—	2,204	—	(779)
Other assets	121	110	11	—	—
Total recurring assets at fair value	$ 100,236	$ 177	$ 94,525	$ 6,313	$ (779)

	June 30, 2017				
	Total	Level 1	Level 2	Level 3	Netting Adjustment, Cash Collateral, and Variation Margin for Daily Settled Contracts(1)
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(4)	$ 4,203	$ —	$ 4,203	$ —	$ —
Bonds(5)	12,463	—	12,463	—	—
Total consolidated obligations	16,666	—	16,666	—	—
Derivative liabilities, net					
Interest-rate related	569	—	3,964	—	(3,395)
Mortgage delivery commitments	4	—	4	—	—
Total derivative liabilities, net	573	—	3,968	—	(3,395)
Total recurring liabilities at fair value	$ 17,239	$ —	$ 20,634	$ —	$ (3,395)
Non-recurring fair value measurements - Assets(6)					
Held-to-maturity securities					
Private-label residential MBS	$ 4	$ —	$ —	$ 4	
Mortgage loans held for portfolio	37	—	1	36	
Real estate owned	9	—	—	9	
Total non-recurring assets at fair value	$ 50	$ —	$ 1	$ 49	

	December 31, 2016				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Recurring fair value measurements - Assets					
Trading securities					
U.S. Treasury obligations	$ 1,606	$ —	$ 1,606	$ —	$ —
Other U.S. obligations	216	—	216	—	—
GSE and Tennessee Valley Authority obligations	5,693	—	5,693	—	—
Other non-MBS	290	17	273	—	—
Other U.S. obligations single-family MBS	20	—	20	—	—
GSE single-family MBS	127	—	127	—	—
GSE multifamily MBS	1,509	—	1,509	—	—
Total trading securities	9,461	17	9,444	—	—
Available-for-sale securities					
Certificates of deposit	1,300	—	1,300	—	—
Other U.S. obligations	4,282	—	4,282	—	—
GSE and Tennessee Valley Authority obligations	16,243	—	16,243	—	—
State or local housing agency obligations	1,273	—	1,265	8	—
Federal Family Education Loan Program ABS	4,572	—	4,572	—	—
Other non-MBS	1,064	44	1,020	—	—
Other U.S. obligations single-family MBS	5,577	—	5,577	—	—
Other U.S. obligations multifamily MBS	563	—	563	—	—
GSE single-family MBS	9,576	—	9,576	—	—
GSE multifamily MBS	30,390	—	30,390	—	—
Private-label residential MBS	6,833	—	—	6,833	—
Total available-for-sale securities	81,673	44	74,788	6,841	—

	December 31, 2016				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Advances(2)	$ 14,279	$ —	$ 14,279	$ —	$ —
Mortgage loans held for sale(3)	44	—	44	—	—
Derivative assets, net					
Interest-rate related	1,403	—	2,580	—	(1,177)
Mortgage delivery commitments	4	—	4	—	—
Total derivative assets, net	1,407	—	2,584	—	(1,177)
Other assets	107	98	9	—	—
Total recurring assets at fair value	$ 106,971	$ 159	$ 101,148	$ 6,841	$ (1,177)
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(4)	$ 18,597	$ —	$ 18,597	$ —	$ —
Bonds(5)	16,898	—	16,898	—	—
Total consolidated obligations	35,495	—	35,495	—	—
Derivative liabilities, net					
Interest-rate related	795	—	4,919	—	(4,124)
Mortgage delivery commitments	15	—	15	—	—
Total derivative liabilities, net	810	—	4,934	—	(4,124)
Total recurring liabilities at fair value	$ 36,305	$ —	$ 40,429	$ —	$ (4,124)
Non-recurring fair value measurements - Assets(7)					
Held-to-maturity securities					
Private-label residential MBS	$ 13	$ —	$ —	$ 13	
Mortgage loans held for portfolio	75	—	3	72	
Real estate owned	19	—	—	19	
Total non-recurring assets at fair value	$ 107	$ —	$ 3	$ 104	

(1) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, cash collateral and related accrued interest held or placed by that FHLBank with the same clearing agent and/or counterparty, and effective January 3, 2017, includes fair value adjustments on derivatives for which variation margin is characterized as a daily settled contract. Variation margin for daily settled contracts was $630 million at June 30, 2017.

(2) Represents advances recorded under fair value option at June 30, 2017 and December 31, 2016.

(3) Represents mortgage loans held for sale recorded under fair value option, included in other assets on the Combined Statement of Condition at June 30, 2017 and December 31, 2016.

(4) Represents consolidated discount notes recorded under fair value option at June 30, 2017 and December 31, 2016.

(5) Represents consolidated bonds recorded under fair value option at June 30, 2017 and December 31, 2016.

(6) The fair value information presented is as of the date the fair value adjustment was recorded during the six months ended June 30, 2017.

(7) The fair value information presented is as of the date the fair value adjustment was recorded during the year ended December 31, 2016.

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 six months ended June 30, 2017 and 2016.

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

	Three Months Ended June 30, 2017				
	Available-for-Sale Securities			Derivative Assets(1)	
	State and Local Housing Agency Obligations	Private-Label Residential MBS	Home Equity Loan ABS	Interest-Rate Related	Consolidated Bonds
Balance, at beginning of period	$ 8	$ 6,538	$ —	$ —	$ —
Total gains (losses) included in earnings					
Interest income	—	47	—	—	—
Net other-than-temporary impairment losses	—	(8)	—	—	—
Total gains (losses) included in other comprehensive income					
Net unrealized gains (losses) on available-for-sale securities	—	1	—	—	—
Net amount of impairment losses reclassified to (from) non-interest income	—	1	—	—	—
Net change in fair value of other-than-temporarily impaired securities	—	100	—	—	—
Purchases, issuances, sales, and settlements					
Purchases	8	—	—	—	—
Settlements	—	(382)	—	—	—
Balance, at end of period	$ 16	$ 6,297	$ —	$ —	$ —
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	$ —	$ 23	$ —	$ —	$ —

	Three Months Ended June 30, 2016			
	Available-for-Sale Securities		Derivative Assets(1)	
	Private-Label Residential MBS	Home Equity Loan ABS	Interest-Rate Related	Consolidated Bonds
Balance, at beginning of period	$ 7,878	$ —	$ —	$ —
Total gains (losses) included in earnings				
Net gains (losses) on sale of available-for-sale securities	—	(1)	—	—
Interest income	47	—	—	—
Net other-than-temporary impairment losses	(4)	—	—	—
Total gains (losses) included in other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	3	—	—	—
Net amount of impairment losses reclassified to (from) non-interest income	(1)	1	—	—
Net change in fair value of other-than-temporarily impaired securities	81	—	—	—
Purchases, issuances, sales, and settlements				
Settlements	(577)	—	—	—
Balance, at end of period	$ 7,427	$ —	$ —	$ —
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	$ 29	$ —	$ —	$ —

	Six Months Ended June 30, 2017				
	Available-for-Sale Securities			Derivative Assets(1)	
	State and Local Housing Agency Obligations	Private-Label Residential MBS	Home Equity Loan ABS	Interest-Rate Related	Consolidated Bonds
Balance, at beginning of period	$ 8	$ 6,833	$ —	$ —	$ —
Total gains (losses) included in earnings					
Interest income	—	93	—	—	—
Net other-than-temporary impairment losses	—	(12)	—	—	—
Total gains (losses) included in other comprehensive income					
Net unrealized gains (losses) on available-for-sale securities	—	3	—	—	—
Net amount of impairment losses reclassified to (from) non-interest income	—	4	—	—	—
Net change in fair value of other-than-temporarily impaired securities	—	126	—	—	—
Purchases, issuances, sales, and settlements					
Purchases	8	—	—	—	—
Settlements	—	(750)	—	—	—
Balance, at end of period	$ 16	$ 6,297	$ —	$ —	$ —
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	$ —	$ 49	$ —	$ —	$ —

	Six Months Ended June 30, 2016			
	Available-for-Sale Securities		Derivative Assets(1)	
	Private-Label Residential MBS	Home Equity Loan ABS	Interest-Rate Related	Consolidated Bonds
Balance, at beginning of period	$ 8,282	$ 10	$ 4	$ (55)
Total gains (losses) included in earnings				
Net gains (losses) on derivatives and hedging activities	—	—	(4)	55
Interest income	94	—	—	—
Net other-than-temporary impairment losses	(12)	—	—	—
Total gains (losses) included in other comprehensive income				
Net unrealized gains (losses) on available-for-sale securities	1	—	—	—
Net amount of impairment losses reclassified to (from) non-interest income	(7)	—	—	—
Net change in fair value of other-than-temporarily impaired securities	8	(1)	—	—
Purchases, issuances, sales, and settlements				
Sales	—	(8)	—	—
Settlements	(939)	(1)	—	—
Balance, at end of period	$ 7,427	$ —	$ —	$ —
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	$ 55	$ —	$ —	$ 55

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(1) Balances exclude netting adjustments and cash collateral.

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.

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. Net losses on financial instruments held under fair value option were $1 million and $8 million for the three and six months ended June 30, 2017, and were $10 million for the three months ended June 30, 2016. There were no net gains or losses on financial instruments held under fair value option for the six months ended June 30, 2016. The change in fair value does not include changes in instrument-specific credit risk. Each of the Electing FHLBanks determined that no adjustments to the fair values of its instruments recorded under fair value option for instrument-specific credit risk were necessary for the three and six months ended June 30, 2017 and 2016.

Table 15.4 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 June 30, 2017 and December 31, 2016.

Table 15.4 - Aggregate Fair Value and Aggregate Unpaid Balance
(dollars in millions)

	June 30, 2017			December 31, 2016		
	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)	$ 9,033	$ 9,007	$ 26	$ 14,279	$ 14,260	$ 19
Mortgage loans held for sale(2)	119	116	3	44	44	—
Consolidated discount notes	4,203	4,194	9	18,597	18,574	23
Consolidated bonds	12,463	12,492	(29)	16,898	16,938	(40)

(1) At June 30, 2017 and December 31, 2016, 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 at June 30, 2017 and December 31, 2016.

Note 16 - Commitments and Contingencies

Off-Balance Sheet Commitments

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

	June 30, 2017			December 31, 2016
Notional amount	Expire Within One Year	Expire After One Year	Total	Total
Standby letters of credit outstanding(1)	$ 104,441	$ 29,361	$ 133,802	$ 134,623
Unsettled consolidated bonds, at par	12,004	—	12,004	3,700
Commitments to fund additional advances	2,545	170	2,715	1,065
Unused lines of credit - advances	2,427	—	2,427	2,361
Commitments for standby bond purchases	757	1,510	2,267	2,083
Unsettled consolidated discount notes, at par	953	—	953	1,105
Commitments to purchase mortgage loans	945	—	945	898
Other(2)	409	—	409	367

(1) Excludes unconditional commitments to issue standby letters of credit of $271 million and $472 million at June 30, 2017 and December 31, 2016.
(2) Consists primarily of commitments related to MPF products and commitments to purchase investments not yet traded.

Standby Letters of Credit. A standby letter of credit is a financing arrangement between an FHLBank and its member. 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 payment amount may be converted into a collateralized advance to the member. These 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 $149 million and $184 million at June 30, 2017 and December 31, 2016.

Each FHLBank monitors the creditworthiness of its members that have standby letters of credit. In addition, standby letters of credit 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 June 30, 2017 and December 31, 2016, the FHLBanks had standby bond-purchase commitments with 13 and 11 state housing authorities. During the six months ended June 30, 2017 and 2016, 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.)

Lehman Bankruptcy

On September 15, 2008, Lehman Brothers Holdings, Inc. (LBHI), the parent company of Lehman Brothers Special Financing (LBSF) and a guarantor of LBSF's obligations, announced it had filed a petition for bankruptcy protection under Chapter 11 of the U.S. Bankruptcy Code. This filing precipitated the termination of the FHLBanks' derivatives transactions with LBSF. Each affected FHLBank calculated its resulting settlement amount, including in that calculation any unreturned collateral pledged in connection with those transactions. Several FHLBanks received a derivatives alternative dispute resolution notice from the LBHI bankruptcy estate relating to the unwinding of derivatives transactions between LBSF and individual FHLBanks in 2008. All of these FHLBanks have subsequently settled their disputes with the LBHI bankruptcy estate.

On April 11, 2017, the FHLBank of New York reached an agreement in principle to settle all pending claims related to the LBHI bankruptcy. This settlement provides that the FHLBank of New York will pay $70 million to the LBHI bankruptcy estate. The FHLBank of New York believes the settlement is in the best interest of itself and its members, as it will remove the uncertainty presented by this litigation. A provision of $70 million for the settlement was established as a charge to earnings in the FHLBank of New York's statement of income for the three months ended March 31, 2017, and a corresponding reserve was recorded in its statement of condition as of March 31, 2017. On April 18, 2017, the FHLBank of New York paid $70 million to LBSF.

Other Legal Proceedings

The FHLBanks are subject to other 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 July 1, 2017, 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, and the following event:

FHLBank of San Francisco

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 Joint Capital Enhancement Agreement, as amended (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 Excess Stock Repurchase, Retained Earnings, and Dividend Framework to eliminate two categories of restricted retained earnings and approved revisions to the FHLBank of San Francisco's retained earnings methodology to provide for a minimum required level of retained earnings, inclusive of the Capital Agreement, of $2,300 million.

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CONDITION
JUNE 30, 2017
(Unaudited)

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 7,952	$ 2	$ 177	$ 534
Investments	312,548	(149)	18,142	33,647
Advances	706,849	—	38,428	117,934
Mortgage loans held for portfolio, net	50,538	2	3,804	2,848
Other assets	3,812	(4)	203	566
Total assets	$ 1,081,699	$ (149)	$ 60,754	$ 155,529
Liabilities				
Deposits	$ 9,338	$ (35)	$ 469	$ 1,928
Consolidated obligations				
Discount notes	428,684	(1)	27,866	57,331
Bonds	582,248	(120)	28,518	87,559
Total consolidated obligations	1,010,932	(121)	56,384	144,890
Mandatorily redeemable capital stock	1,484	—	37	21
Other liabilities	5,382	3	530	570
Total liabilities	1,027,136	(153)	57,420	147,409
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	36,669	(2)	2,408	6,757
Class A putable ($100 par value) issued and outstanding	214	—	—	—
Total capital stock	36,883	(2)	2,408	6,757
Additional capital from merger	—	—	—	—
Retained earnings				
Unrestricted	12,262	9	1,001	1,026
Restricted	4,976	(1)	245	423
Total retained earnings	17,238	8	1,246	1,449
Accumulated other comprehensive income (loss)	442	(2)	(320)	(86)
Total capital	54,563	4	3,334	8,120
Total liabilities and capital	$ 1,081,699	$ (149)	$ 60,754	$ 155,529

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 4,010	$ 1,070	$ 370	$ 92	$ 168	$ 964	$ 43	$ 492	$ 30
18,944	39,752	27,934	18,141	29,461	37,763	28,122	15,756	45,035
74,080	91,590	71,088	32,253	46,844	118,878	34,132	26,443	55,179
3,538	486	9,447	9,894	4,965	6,953	379	6,839	1,383
258	779	214	332	341	430	186	211	296
$ 100,830	$ 133,677	$ 109,053	$ 60,712	$ 81,779	$ 164,988	$ 62,862	$ 49,741	$ 101,923
$ 590	$ 1,370	$ 713	$ 674	$ 558	$ 964	$ 1,165	$ 496	$ 446
31,929	51,355	49,360	21,036	37,944	66,558	28,015	23,956	33,335
62,911	73,822	53,359	35,282	37,878	89,171	30,020	22,882	60,966
94,840	125,177	102,719	56,318	75,822	155,729	58,035	46,838	94,301
5	2	36	167	303	480	23	6	404
461	400	487	829	350	419	501	163	669
95,896	126,949	103,955	57,988	77,033	157,592	59,724	47,503	95,820
3,733	4,680	4,220	1,702	1,526	5,623	2,115	1,220	2,687
—	—	—	—	—	—	—	214	—
3,733	4,680	4,220	1,702	1,526	5,623	2,115	1,434	2,687
—	—	—	—	—	—	—	—	—
828	1,592	600	759	2,734	1,399	795	647	872
250	343	290	166	419	285	95	144	2,317
1,078	1,935	890	925	3,153	1,684	890	791	3,189
123	113	(12)	97	67	89	133	13	227
4,934	6,728	5,098	2,724	4,746	7,396	3,138	2,238	6,103
$ 100,830	$ 133,677	$ 109,053	$ 60,712	$ 81,779	$ 164,988	$ 62,862	$ 49,741	$ 101,923

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CONDITION
DECEMBER 31, 2016
(Unaudited)

(dollars in millions, except par value)	Combined	Combining Adjustments	Boston	New York
Assets				
Cash and due from banks	$ 7,441	$ (1)	$ 520	$ 152
Investments	292,017	(234)	18,032	30,685
Advances	705,225	—	39,099	109,257
Mortgage loans held for portfolio, net	48,476	2	3,694	2,746
Other assets	3,553	(1,347)	201	766
Total assets	$ 1,056,712	$ (1,580)	$ 61,546	$ 143,606
Liabilities				
Deposits	$ 8,089	$ (17)	$ 482	$ 1,241
Consolidated obligations				
Discount notes	409,815	—	30,054	49,358
Bonds	578,927	(234)	27,171	84,785
Total consolidated obligations	988,742	(234)	57,225	134,143
Mandatorily redeemable capital stock	1,704	1	33	31
Other liabilities	5,718	(1,348)	561	567
Total liabilities	1,004,253	(1,598)	58,301	135,982
Capital				
Capital stock				
Class B putable ($100 par value) issued and outstanding	36,072	(1)	2,412	6,308
Class A putable ($100 par value) issued and outstanding	162	—	—	—
Total capital stock	36,234	(1)	2,412	6,308
Additional capital from merger	52	—	—	—
Retained earnings				
Unrestricted	11,789	15	988	1,029
Restricted	4,541	1	229	383
Total retained earnings	16,330	16	1,217	1,412
Accumulated other comprehensive income (loss)	(157)	3	(384)	(96)
Total capital	52,459	18	3,245	7,624
Total liabilities and capital	$ 1,056,712	$ (1,580)	$ 61,546	$ 143,606

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 3,588	$ 1,815	$ 9	$ 547	$ 351	$ 223	$ 28	$ 207	$ 2
17,227	36,510	25,334	15,460	28,060	41,218	25,129	13,610	40,986
76,809	99,077	69,882	28,096	45,067	131,601	32,506	23,986	49,845
3,391	523	9,149	9,501	4,967	6,913	124	6,640	826
245	746	261	303	247	650	425	774	282
$ 101,260	$ 138,671	$ 104,635	$ 53,907	$ 78,692	$ 180,605	$ 58,212	$ 45,217	$ 91,941
$ 559	$ 1,118	$ 765	$ 524	$ 496	$ 1,113	$ 1,040	$ 599	$ 169
28,500	41,292	44,690	16,802	35,949	80,947	26,942	21,775	33,506
67,156	88,647	53,191	33,467	36,903	89,898	26,997	20,722	50,224
95,656	129,939	97,881	50,269	72,852	170,845	53,939	42,497	83,730
5	1	35	170	301	664	3	3	457
246	662	976	508	348	582	413	155	2,048
96,466	131,720	99,657	51,471	73,997	173,204	55,395	43,254	86,404
3,755	4,955	4,157	1,493	1,711	5,917	1,930	1,065	2,370
—	—	—	—	—	—	—	162	—
3,755	4,955	4,157	1,493	1,711	5,917	1,930	1,227	2,370
—	—	—	—	—	52	—	—	—
772	1,582	574	735	2,631	1,219	745	611	888
214	310	260	152	389	231	79	125	2,168
986	1,892	834	887	3,020	1,450	824	736	3,056
53	104	(13)	56	(36)	(18)	63	—	111
4,794	6,951	4,978	2,436	4,695	7,401	2,817	1,963	5,537
$ 101,260	$ 138,671	$ 104,635	$ 53,907	$ 78,692	$ 180,605	$ 58,212	$ 45,217	$ 91,941

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF INCOME
THREE MONTHS ENDED JUNE 30, 2017 and 2016
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
June 30, 2017				
Interest income				
Advances	$ 2,183	$ 3	$ 127	$ 361
Investments	1,243	(4)	65	136
Mortgage loans held for portfolio	421	2	31	23
Other interest income	1	(1)	1	—
Total interest income	3,848	—	224	520
Interest expense				
Consolidated obligations - Discount notes	851	1	55	102
Consolidated obligations - Bonds	1,775	3	104	238
Other interest expense	33	—	1	4
Total interest expense	2,659	4	160	344
Net interest income	1,189	(4)	64	176
Provision (reversal) for credit losses	1	—	—	—
Net interest income after provision (reversal) for credit losses	1,188	(4)	64	176
Non-interest income (loss)	37	(5)	1	1
Non-interest expense	285	(7)	20	32
Affordable Housing Program assessments	96	1	5	14
Net income	$ 844	$ (3)	$ 40	$ 131
June 30, 2016				
Interest income				
Advances	$ 1,271	$ 3	$ 82	$ 210
Investments	973	(3)	56	86
Mortgage loans held for portfolio	392	—	30	22
Other interest income	(2)	(2)	—	—
Total interest income	2,634	(2)	168	318
Interest expense				
Consolidated obligations - Discount notes	513	1	22	48
Consolidated obligations - Bonds	1,179	3	90	139
Other interest expense	37	(2)	1	2
Total interest expense	1,729	2	113	189
Net interest income	905	(4)	55	129
Provision (reversal) for credit losses	1	—	—	—
Net interest income after provision (reversal) for credit losses	904	(4)	55	129
Non-interest income (loss)	254	(4)	17	—
Non-interest expense	270	(5)	19	27
Affordable Housing Program assessments	92	2	6	10
Net income	$ 796	$ (5)	$ 47	$ 92

	Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
	$ 237	$ 250	$ 215	$ 95	$ 130	$ 381	$ 96	$ 95	$ 193
	80	165	95	71	190	145	86	52	162
	32	6	74	78	53	59	3	49	11
	—	—	—	—	—	—	—	1	—
	349	421	384	244	373	585	185	197	366
	57	103	79	42	119	124	44	58	67
	180	202	197	134	133	286	77	74	147
	1	2	2	3	4	5	3	—	8
	238	307	278	179	256	415	124	132	222
	111	114	106	65	117	170	61	65	144
	—	—	—	—	1	—	—	—	—
	111	114	106	65	116	170	61	65	144
	8	12	10	(4)	16	6	8	—	(16)
	21	30	19	20	44	31	21	15	39
	10	10	10	4	9	15	4	5	9
	$ 88	$ 86	$ 87	$ 37	$ 79	$ 130	$ 44	$ 45	$ 80
	$ 157	$ 139	$ 140	$ 51	$ 74	$ 189	$ 52	$ 57	$ 117
	61	120	95	48	188	99	46	36	141
	29	7	63	68	55	59	1	51	7
	—	—	—	—	—	—	—	—	—
	247	266	298	167	317	347	99	144	265
	27	63	44	15	95	113	29	24	32
	126	122	170	104	98	135	32	56	104
	1	1	2	2	13	5	—	—	12
	154	186	216	121	206	253	61	80	148
	93	80	82	46	111	94	38	64	117
	—	—	—	—	—	1	—	—	—
	93	80	82	46	111	93	38	64	117
	1	17	7	(2)	45	192	5	(15)	(9)
	19	31	21	19	41	27	20	14	37
	8	6	7	3	11	26	2	3	8
	$ 67	$ 60	$ 61	$ 22	$ 104	$ 232	$ 21	$ 32	$ 63

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF INCOME
SIX MONTHS ENDED JUNE 30, 2017 and 2016
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
June 30, 2017				
Interest income				
Advances	$ 3,722	$ 1	$ 234	$ 678
Investments	2,365	(6)	127	256
Mortgage loans held for portfolio	835	2	61	46
Other interest income	2	(1)	1	—
Total interest income	6,924	(4)	423	980
Interest expense				
Consolidated obligations - Discount notes	1,477	1	93	179
Consolidated obligations - Bonds	3,373	3	202	445
Other interest expense	65	—	2	6
Total interest expense	4,915	4	297	630
Net interest income	2,009	(8)	126	350
Provision (reversal) for credit losses	1	—	—	—
Net interest income after provision (reversal) for credit losses	2,008	(8)	126	350
Non-interest income (loss)	529	(8)	1	5
Non-interest expense	692	(11)	41	132
Affordable Housing Program assessments	189	2	9	22
Net income	$ 1,656	$ (7)	$ 77	$ 201
June 30, 2016				
Interest income				
Advances	$ 2,425	$ 1	$ 162	$ 401
Investments	1,955	(8)	115	172
Mortgage loans held for portfolio	800	—	61	44
Other interest income	—	—	—	—
Total interest income	5,180	(7)	338	617
Interest expense				
Consolidated obligations - Discount notes	1,002	—	45	97
Consolidated obligations - Bonds	2,264	3	181	261
Other interest expense	72	—	1	3
Total interest expense	3,338	3	227	361
Net interest income	1,842	(10)	111	256
Provision (reversal) for credit losses	2	—	—	1
Net interest income after provision (reversal) for credit losses	1,840	(10)	111	255
Non-interest income (loss)	522	(7)	13	(5)
Non-interest expense	546	(8)	38	56
Affordable Housing Program assessments	186	1	9	19
Net income	$ 1,630	$ (10)	$ 77	$ 175

	Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
	$ 443	$ 170	$ 397	$ 169	$ 229	$ 714	$ 172	$ 169	$ 346
	152	305	185	130	374	275	157	95	315
	63	13	146	154	107	117	4	102	20
	—	—	—	1	—	—	—	1	—
	658	488	728	454	710	1,106	333	367	681
	92	171	136	67	215	233	76	93	121
	345	401	380	257	258	539	139	141	263
	2	4	3	6	7	11	4	1	19
	439	576	519	330	480	783	219	235	403
	219	(88)	209	124	230	323	114	132	278
	—	—	—	—	1	—	—	—	—
	219	(88)	209	124	229	323	114	132	278
	20	331	(1)	(7)	26	41	16	9	96
	45	64	39	40	86	63	43	31	119
	19	18	17	8	17	31	8	11	27
	$ 175	$ 161	$ 152	$ 69	$ 152	$ 270	$ 79	$ 99	$ 228
	$ 289	$ 266	$ 276	$ 100	$ 137	$ 362	$ 97	$ 111	$ 223
	124	242	193	92	386	197	86	73	283
	59	16	131	137	112	120	2	103	15
	—	—	—	—	—	—	—	—	—
	472	524	600	329	635	679	185	287	521
	60	126	99	31	177	222	49	45	51
	236	223	327	200	200	251	61	113	208
	1	2	3	3	27	9	1	—	22
	297	351	429	234	404	482	111	158	281
	175	173	171	95	231	197	74	129	240
	—	—	—	—	—	1	—	—	—
	175	173	171	95	231	196	74	129	240
	2	14	3	(3)	42	324	(2)	(21)	162
	39	65	43	37	81	54	40	28	73
	14	12	13	6	19	47	3	8	35
	$ 124	$ 110	$ 118	$ 49	$ 173	$ 419	$ 29	$ 72	$ 294

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF COMPREHENSIVE INCOME
THREE MONTHS ENDED JUNE 30, 2017 AND 2016
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
June 30, 2017				
Net income	$ 844	$ (3)	$ 40	$ 131
Other comprehensive income				
Net unrealized gains/losses on available-for-sale securities	90	—	16	2
Net non-credit portion of other-than-temporary impairment losses on available-for-sale securities	101	—	—	—
Net non-credit portion of other-than-temporary impairment losses on held-to-maturity securities	21	2	9	—
Net unrealized gains/losses relating to hedging activities	5	—	(2)	(13)
Pension and postretirement benefits	2	(2)	—	1
Total other comprehensive income (loss)	219	—	23	(10)
Comprehensive income	$ 1,063	$ (3)	$ 63	$ 121
June 30, 2016				
Net income	$ 796	$ (5)	$ 47	$ 92
Other comprehensive income				
Net unrealized gains/losses on available-for-sale securities	20	1	28	(1)
Net non-credit portion of other-than-temporary impairment losses on available-for-sale securities	83	1	—	—
Net non-credit portion of other-than-temporary impairment losses on held-to-maturity securities	24	(1)	10	2
Net unrealized gains/losses relating to hedging activities	(25)	—	(3)	(22)
Pension and postretirement benefits	(2)	(3)	(2)	—
Total other comprehensive income (loss)	100	(2)	33	(21)
Comprehensive income	$ 896	$ (7)	$ 80	$ 71

Pittsburgh		Atlanta		Cincinnati		Indianapolis		Chicago		Des Moines		Dallas		Topeka		San Francisco	
$	88	$	86	$	87	$	37	$	79	$	130	$	44	$	45	$	80
	31		—		—		15		(19)		41		1		3		—
	9		8		—		1		—		—		—		—		83
	—		—		—		—		8		—		1		—		1
	—		—		—		—		25		—		(5)		—		—
	—		—		1		1		—		1		—		—		—
	40		8		1		17		14		42		(3)		3		84
$	128	$	94	$	88	$	54	$	93	$	172	$	41	$	48	$	164
$	67	$	60	$	61	$	22	$	104	$	232	$	21	$	32	$	63
	34		—		—		(1)		(60)		36		(15)		(2)		—
	5		26		—		—		—		—		—		—		51
	—		—		—		—		10		—		1		1		1
	—		—		—		—		8		—		(8)		—		—
	—		1		1		(1)		1		1		—		—		—
	39		27		1		(2)		(41)		37		(22)		(1)		52
$	106	$	87	$	62	$	20	$	63	$	269	$	(1)	$	31	$	115

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF COMPREHENSIVE INCOME
SIX MONTHS ENDED JUNE 30, 2017 AND 2016
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
June 30, 2017				
Net income	$ 1,656	$ (7)	$ 77	$ 201
Other comprehensive income				
Net unrealized gains/losses on available-for-sale securities	356	(1)	43	5
Net non-credit portion of other-than-temporary impairment losses on available-for-sale securities	130	(1)	—	—
Net non-credit portion of other-than-temporary impairment losses on held-to-maturity securities	46	(1)	18	7
Net unrealized gains/losses relating to hedging activities	64	(1)	3	(3)
Pension and postretirement benefits	3	(1)	—	1
Total other comprehensive income (loss)	599	(5)	64	10
Comprehensive income	$ 2,255	$ (12)	$ 141	$ 211
June 30, 2016				
Net income	$ 1,630	$ (10)	$ 77	$ 175
Other comprehensive income				
Net unrealized gains/losses on available-for-sale securities	26	(2)	80	(4)
Net unrealized gains/losses on held-to-maturity securities transferred from available-for-sale securities	1	1	—	—
Net non-credit portion of other-than-temporary impairment losses on available-for-sale securities	—	1	—	—
Net non-credit portion of other-than-temporary impairment losses on held-to-maturity securities	49	(1)	20	4
Net unrealized gains/losses relating to hedging activities	(149)	—	(13)	(78)
Pension and postretirement benefits	2	1	(2)	—
Total other comprehensive income (loss)	(71)	—	85	(78)
Comprehensive income	$ 1,559	$ (10)	$ 162	$ 97

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 175	$ 161	$ 152	$ 69	$ 152	$ 270	$ 79	$ 99	$ 228
63	—	—	38	19	105	72	12	—
7	8	—	2	—	—	—	—	114
—	—	—	—	17	—	2	1	2
—	—	—	—	69	—	(4)	—	—
—	1	1	1	(2)	2	—	—	—
70	9	1	41	103	107	70	13	116
$ 245	$ 170	$ 153	$ 110	$ 255	$ 377	$ 149	$ 112	$ 344
$ 124	$ 110	$ 118	$ 49	$ 173	$ 419	$ 29	$ 72	$ 294
61	—	—	(1)	(100)	(1)	(10)	3	—
—	—	—	—	—	—	—	—	—
(8)	17	—	(6)	—	—	—	—	(4)
—	—	—	—	21	—	2	1	2
—	—	—	—	(45)	—	(13)	—	—
—	1	1	(1)	1	—	—	—	1
53	18	1	(8)	(123)	(1)	(21)	4	(1)
$ 177	$ 128	$ 119	$ 41	$ 50	$ 418	$ 8	$ 76	$ 293

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CAPITAL
SIX MONTHS ENDED JUNE 30, 2017 AND 2016
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Balance, December 31, 2015	$ 48,042	$ 30	$ 3,023	$ 6,719
Comprehensive income (loss)	1,559	(10)	162	97
Proceeds from issuance of capital stock	12,563	—	226	2,012
Repurchases/redemptions of capital stock	(10,069)	2	(209)	(1,918)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(1,912)	(1)	—	(13)
Dividends of capital stock	46	—	—	—
Dividends				
Cash	(652)	—	(41)	(123)
Stock	(46)	—	—	—
Balance, June 30, 2016	$ 49,531	$ 21	$ 3,161	$ 6,774
Balance, December 31, 2016	$ 52,459	$ 18	$ 3,245	$ 7,624
Comprehensive income (loss)	2,255	(12)	141	211
Proceeds from issuance of capital stock	16,831	1	523	2,957
Repurchases/redemptions of capital stock	(15,543)	(1)	(518)	(2,505)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(696)	(1)	(9)	(3)
Dividends of capital stock	57	—	—	—
Dividends				
Cash	(743)	(1)	(48)	(164)
Stock	(57)	—	—	—
Balance, June 30, 2017	$ 54,563	$ 4	$ 3,334	$ 8,120

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 4,501	$ 7,016	$ 5,153	$ 2,386	$ 4,652	$ 5,625	$ 2,199	$ 1,842	$ 4,896
177	128	119	41	50	418	8	76	293
1,368	2,954	36	52	707	3,232	653	670	653
(1,631)	(2,813)	—	—	(584)	(1,974)	(389)	(219)	(334)
(45)	(2)	(238)	(179)	(299)	(731)	—	(352)	(52)
—	—	—	—	—	—	7	39	—
(80)	(111)	(87)	(31)	(19)	(66)	—	—	(94)
—	—	—	—	—	—	(7)	(39)	—
$ 4,290	$ 7,172	$ 4,983	$ 2,269	$ 4,507	$ 6,504	$ 2,471	$ 2,017	$ 5,362
$ 4,794	$ 6,951	$ 4,978	$ 2,436	$ 4,695	$ 7,401	$ 2,817	$ 1,963	$ 5,537
245	170	153	110	255	377	149	112	344
2,097	4,351	250	209	1,462	2,905	670	855	551
(2,119)	(4,610)	—	—	(1,641)	(3,171)	(478)	(268)	(232)
—	(16)	(187)	—	(6)	(28)	(20)	(424)	(2)
—	—	—	—	—	—	13	44	—
(83)	(118)	(96)	(31)	(19)	(88)	—	—	(95)
—	—	—	—	—	—	(13)	(44)	—
$ 4,934	$ 6,728	$ 5,098	$ 2,724	$ 4,746	$ 7,396	$ 3,138	$ 2,238	$ 6,103

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

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Operating activities				
Net cash provided by (used in) operating activities	$ 1,831	$ 1	$ 77	$ 202
Investing activities				
Net change/net proceeds and payments in				
Loans to FHLBanks	—	(1,345)	—	255
Premises, software, and equipment	(75)	1	(2)	(16)
Investments	(19,660)	(81)	(43)	(2,946)
Advances	(2,065)	1	655	(8,703)
Mortgage loans held for portfolio	(2,145)	1	(116)	(104)
Proceeds from sales of foreclosed assets	34	(2)	2	3
Other investing activities	(16)	—	—	—
Net cash provided by (used in) investing activities	(23,927)	(1,425)	496	(11,511)
Financing activities				
Net change in deposits and pass-through reserves, and other financing activities	1,113	(22)	(13)	670
Net change in loans from FHLBanks	—	1,345	—	—
Net proceeds (payments) on derivative contracts with financing element	(119)	(1)	(3)	(10)
Net proceeds from issuance of consolidated obligations				
Discount notes	3,055,017	1	84,129	565,986
Bonds	208,176	—	5,377	36,631
Payments for maturing and retiring consolidated obligations				
Discount notes	(3,036,285)	—	(86,331)	(558,007)
Bonds	(204,926)	106	(4,027)	(33,854)
Proceeds from issuance of capital stock	16,831	1	523	2,957
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(914)	(1)	(5)	(13)
Payments for repurchases/redemptions of capital stock	(15,543)	(1)	(518)	(2,505)
Cash dividends paid	(743)	(1)	(48)	(164)
Net cash provided by (used in) financing activities	22,607	1,427	(916)	11,691
Net increase (decrease) in cash and due from banks	511	3	(343)	382
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	$ 7,952	$ 2	$ 177	$ 534

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 129	$ 127	$ 222	$ 115	$ 225	$ 249	$ 144	$ 102	$ 238
—	—	—	—	—	200	290	600	—
(1)	(2)	(1)	(2)	(5)	(21)	(2)	(13)	(11)
(1,384)	(3,088)	(3,057)	(2,327)	(1,401)	3,507	(2,750)	(2,111)	(3,979)
2,735	7,103	(1,205)	(4,157)	(1,758)	12,699	(1,634)	(2,471)	(5,330)
(157)	35	(320)	(420)	(2)	(50)	(255)	(212)	(545)
3	2	—	—	19	4	—	1	2
—	—	—	—	—	—	—	(16)	—
1,196	4,050	(4,583)	(6,906)	(3,147)	16,339	(4,351)	(4,222)	(9,863)
32	250	(72)	138	62	(150)	30	(81)	269
—	—	—	—	—	—	—	—	(1,345)
—	(16)	(3)	(10)	(16)	(2)	(46)	(12)	—
97,328	363,932	293,477	108,964	725,466	118,084	148,238	470,882	78,530
23,154	24,983	13,680	12,523	10,579	26,848	11,677	7,903	34,821
(93,915)	(353,897)	(288,823)	(104,741)	(723,480)	(132,486)	(147,171)	(468,715)	(78,719)
(27,397)	(39,782)	(13,505)	(10,714)	(9,670)	(27,575)	(8,698)	(5,738)	(24,072)
2,097	4,351	250	209	1,462	2,905	670	855	551
—	(15)	(186)	(2)	(4)	(212)	—	(421)	(55)
(2,119)	(4,610)	—	—	(1,641)	(3,171)	(478)	(268)	(232)
(83)	(118)	(96)	(31)	(19)	(88)	—	—	(95)
(903)	(4,922)	4,722	6,336	2,739	(15,847)	4,222	4,405	9,653
422	(745)	361	(455)	(183)	741	15	285	28
3,588	1,815	9	547	351	223	28	207	2
$ 4,010	$ 1,070	$ 370	$ 92	$ 168	$ 964	$ 43	$ 492	$ 30

FEDERAL HOME LOAN BANKS
CONDENSED COMBINING SCHEDULES—STATEMENTS OF CASH FLOWS
SIX MONTHS ENDED JUNE 30, 2016
(Unaudited)

(dollars in millions)	Combined	Combining Adjustments	Boston	New York
Operating activities				
Net cash provided by (used in) operating activities	$ 1,807	$ 1	$ 87	$ 201
Investing activities				
Net change/net proceeds and payment in				
Premises, software, and equipment	(27)	—	(1)	(2)
Investments	(12,316)	(38)	(1,642)	(4,088)
Advances	(53,717)	2	(2,068)	(863)
Mortgage loans held for portfolio	(1,163)	—	(52)	(112)
Proceeds from sales of foreclosed assets	53	(2)	3	2
Other investing activities	1	—	—	—
Net cash provided by (used in) investing activities	(67,169)	(38)	(3,760)	(5,063)
Financing activities				
Net change in				
Deposits and pass-through reserves	(1,089)	(16)	152	(228)
Net proceeds (payments) on derivative contracts with financing element	(202)	—	(7)	(37)
Net proceeds from issuance of consolidated obligations				
Discount notes	1,746,568	—	76,299	149,507
Bonds	254,686	3	9,716	29,753
Payments for maturing and retiring consolidated obligations				
Discount notes	(1,769,736)	(1)	(74,298)	(147,296)
Bonds	(173,042)	50	(7,998)	(26,788)
Payments for retirement of subordinated notes	(944)	—	—	—
Proceeds from issuance of capital stock	12,563	—	226	2,012
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(811)	(2)	(7)	(2)
Payments for repurchases/redemptions of capital stock	(10,069)	2	(209)	(1,918)
Cash dividends paid	(652)	—	(41)	(123)
Net cash provided by (used in) financing activities	57,272	36	3,833	4,880
Net increase (decrease) in cash and due from banks	(8,090)	(1)	160	18
Cash and due from banks at beginning of the period	14,289	—	254	327
Cash and due from banks at end of the period	$ 6,199	$ (1)	$ 414	$ 345

Pittsburgh	Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 100	$ 169	$ 159	$ 111	$ (8)	$ 468	$ 82	$ 111	$ 326
(1)	(1)	(1)	(2)	(4)	(5)	(2)	(3)	(5)
1,805	(2,389)	14,746	(5,890)	(667)	(3,884)	(6,660)	123	(3,732)
8,196	(2,139)	(1,219)	557	(9,458)	(26,969)	(6,312)	(2,530)	(10,914)
(74)	63	(553)	(620)	161	103	(12)	(91)	24
5	7	—	—	24	9	—	3	2
—	—	—	—	—	—	—	1	—
9,931	(4,459)	12,973	(5,955)	(9,944)	(30,746)	(12,986)	(2,497)	(14,625)
(31)	62	101	107	(6)	(44)	(194)	(120)	(872)
(18)	(45)	(8)	(16)	(28)	(3)	(32)	(16)	8
52,975	275,195	173,694	153,113	231,170	143,494	159,472	265,946	65,703
33,134	32,518	28,842	17,767	14,341	49,439	11,370	8,111	19,692
(74,436)	(276,080)	(202,006)	(156,450)	(226,872)	(150,017)	(149,977)	(260,877)	(51,426)
(20,998)	(27,970)	(13,522)	(13,183)	(7,932)	(14,169)	(8,706)	(11,227)	(20,599)
—	—	—	—	(944)	—	—	—	—
1,368	2,954	36	52	707	3,232	653	670	653
(45)	(7)	(180)	(16)	(5)	(136)	(6)	(351)	(54)
(1,631)	(2,813)	—	—	(584)	(1,974)	(389)	(219)	(334)
(80)	(111)	(87)	(31)	(19)	(66)	—	—	(94)
(9,762)	3,703	(13,130)	1,343	9,828	29,756	12,191	1,917	12,677
269	(587)	2	(4,501)	(124)	(522)	(713)	(469)	(1,622)
2,377	1,751	10	4,932	499	982	837	683	1,637
$ 2,646	$ 1,164	$ 12	$ 431	$ 375	$ 460	$ 124	$ 214	$ 15

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SELECTED FINANCIAL DATA

(dollars in millions)	2017 June 30,	2017 March 31,	2016 December 31,	2016 September 30,	2016 June 30,
Selected Statement of Condition Data at					
Investments(1)	$ 312,548	$ 308,551	$ 292,017	$ 291,516	$ 285,789
Advances	706,849	660,740	705,225	688,597	689,792
Mortgage loans held for portfolio	50,555	48,990	48,494	47,065	45,695
Allowance for credit losses on mortgage loans	(17)	(18)	(18)	(19)	(18)
Total assets	1,081,699	1,026,027	1,056,712	1,036,110	1,030,643
Consolidated obligations					
Discount notes	428,684	376,967	409,815	434,510	471,032
Bonds	582,248	581,538	578,927	534,087	494,158
Total consolidated obligations	1,010,932	958,505	988,742	968,597	965,190
Mandatorily redeemable capital stock	1,484	1,462	1,704	1,892	1,845
Capital					
Total capital stock(2)	36,883	35,003	36,234	35,270	34,813
Additional capital from merger(3)	—	9	52	92	128
Retained earnings	17,238	16,779	16,330	15,838	15,295
Accumulated other comprehensive income (loss)	442	223	(157)	(350)	(705)
Total capital	54,563	52,014	52,459	50,850	49,531
Selected Statement of Income Data for the quarter ended					
Net interest income	$ 1,189	$ 820	$ 1,015	$ 978	$ 905
Provision (reversal) for credit losses	1	—	1	3	1
Net interest income after provision (reversal) for credit losses	1,188	820	1,014	975	904
Non-interest income (loss)	37	492	351	281	254
Non-interest expense	285	407	346	291	270
Affordable Housing Program Assessments	96	93	106	100	92
Net income	$ 844	$ 812	$ 913	$ 865	$ 796
Selected Other Data for the quarter ended					
Cash and stock dividends	$ 394	$ 406	$ 461	$ 358	$ 356
Dividend payout ratio(4)	46.68%	50.00%	50.49%	41.39%	44.72%
Return on average equity(5)	6.36%	6.20%	7.07%	6.85%	6.64%
Return on average assets	0.32%	0.31%	0.35%	0.33%	0.32%
Average equity to average assets	5.03%	4.98%	4.92%	4.87%	4.85%
Net interest margin(6)	0.46%	0.31%	0.39%	0.38%	0.37%
Selected Other Data at					
GAAP capital-to-asset ratio	5.04%	5.07%	4.96%	4.91%	4.81%
Regulatory capital-to-assets ratio(7)	5.14%	5.19%	5.14%	5.13%	5.05%

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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) Additional capital from merger resulted from the merger effective May 31, 2015, between the FHLBank of Des Moines and the FHLBank of Seattle, and primarily represents the amount of the FHLBank of Seattle's closing retained earnings balance as of the merger date, adjusted for fair value and other purchase accounting adjustments, and identified intangible assets, and is net of dividends paid by the FHLBank of Des Moines subsequent to the merger date. The balance in additional capital from merger was depleted following the first quarter dividend payment in May 2017.

(4) 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.

(5) Return on average equity is equal to net income expressed as a percentage of average total capital.

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

(7) The regulatory capital-to-assets ratio is calculated based on the FHLBanks' regulatory capital as a percentage of total assets. (See *Note 13 - Capital* to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

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

Investors should read this financial discussion and analysis of combined financial condition and combined results of operations together with the combined financial statements and the accompanying notes in this Combined Financial Report of the Federal Home Loan Banks (FHLBanks). Each FHLBank discusses its financial condition and results of operations in its periodic reports filed with the U.S Securities and Exchange Commission (SEC). The results of operations for interim periods are not necessarily indicative of the results to be expected for the year ending December 31, 2017. 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, 2016, included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016.

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 the individual FHLBanks. This Financial Discussion and Analysis does not generally include a separate description of how each FHLBank's operations affect the combined financial condition and combined results of operations. That level of information about each of the FHLBanks 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 records of the FHLBanks. (See *Condensed Combining Schedules* for information regarding each individual 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 *Risk Factors* on pages 19 to 27 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016. 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;
- 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, 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 future 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 support from FHLBank debt underwriters, and changes resulting from any modification of credit ratings;

- 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; 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, the fiscal agent 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 are generally designed to 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 the joint and several obligation 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, 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. However, 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 relatively 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. In addition to ratings on the FHLBanks' consolidated obligations, each FHLBank is rated individually by Moody's Investors Service (Moody's) and S&P Global Ratings (S&P). (See *External Credit Ratings* for more information.) Investors should note that a rating issued by a rating agency is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn by the rating agency at any time. Investors should evaluate the rating of each rating agency independently. Moody's, S&P, or other rating organizations could downgrade or upgrade the credit rating of the U.S. government and, in turn, GSEs, including the FHLBanks and their consolidated obligations.

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) the conditions in the housing markets; (3) interest rate levels and volatility; and (4) the legislative and regulatory environment.

Economy and Financial Markets. The FHLBanks' members may use wholesale funding in the form of advances along with other funding instruments, such as retail deposits, as sources of liquidity to make residential mortgage loans. The FHLBanks' overall results of operations are influenced by the economy and financial markets, and, in particular, by the FHLBanks' member demand for advances and the FHLBanks' ability to maintain sufficient access to diverse sources of funding at relatively favorable rates.

The FHLBanks' flexibility in utilizing various funding tools, in combination with a diverse investor base and their status as GSEs, have helped ensure reliable market access and investor demand for FHLBank consolidated obligations, despite market uncertainty and regulations affecting debt underwriters. The FHLBanks continued to meet their funding needs in response to demand for advances during the three and six months ended June 30, 2017.

Economic and market data received prior to the Federal Open Market Committee meeting in May 2017 indicated that the labor market continued to strengthen and that economic activity has been rising moderately. On a 12-month basis, inflation has declined recently; however, inflation is expected to stabilize around two percent over the medium term. The Federal Open Market Committee also stated that it is maintaining its existing policy of reinvesting principal payments from its holdings of agency debt and agency mortgage-backed securities (MBS) back into agency MBS, and of rolling over maturing Treasury securities at auction. However, in June 2017, the Federal Open Market Committee stated that it expects to implement a balance sheet normalization program this year, which would gradually reduce the Federal Reserve's securities holdings.

The unemployment rate declined to 4.4% in June 2017 compared to 4.7% in December 2016. U.S. real gross domestic product increased at an annual rate of 2.6% in the second quarter of 2017, according to the advance estimate released by the Bureau of Economic Analysis, compared to an increase at an annual rate of 1.8% in the fourth quarter of 2016.

Conditions in 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. In June 2017, total existing home sales were 5.52 million, based on a seasonally-adjusted annual rate, an increase of 0.7% on a year-over-year basis. This increase was driven by strong consumer confidence, low mortgage rates, and a stronger labor market. Declining housing inventory and strong demand have continued to push home prices higher; however, existing home sales remain slightly above last year's pace. Total housing inventory was 2.0 million existing homes available for sale at the end of June 2017, a decrease of 7.1% from June 2016. The median existing home price was $263,800 in June 2017, an increase of 6.5% from June 2016.

Interest Rate Levels and Volatility. The level and volatility of interest rates affect FHLBank member demand for wholesale funding. 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 first half of 2017. In the United States, overall economic conditions, monetary policy, financial regulation, heavy issuance of corporate debt, and the presidential transition continue to be influencing factors.

Table 1 presents key interest rate data that illustrates the increases in average interest rates during the three and six months ended June 30, 2017, compared to the same periods in 2016, as well as increases in short-term rates since December 31, 2016.

Table 1 - Key Interest Rates

	Three-Month Average		Six-Month Average		Ending Rate	
	June 30, 2017	June 30, 2016	June 30, 2017	June 30, 2016	June 30, 2017	December 31, 2016
Federal funds effective rate	0.95%	0.37%	0.83%	0.37%	1.06%	0.55%
3-month LIBOR	1.21%	0.64%	1.14%	0.63%	1.30%	1.00%
2-year swap rate	1.55%	0.90%	1.55%	0.91%	1.62%	1.45%
10-year swap rate	2.22%	1.62%	2.30%	1.70%	2.28%	2.34%
3-month U.S. Treasury yield	0.90%	0.25%	0.74%	0.26%	1.01%	0.50%
2-year U.S. Treasury yield	1.29%	0.77%	1.26%	0.80%	1.38%	1.19%
10-year U.S. Treasury yield	2.26%	1.75%	2.35%	1.83%	2.31%	2.45%
30-year residential mortgage note rate	4.20%	3.82%	4.28%	3.89%	4.13%	4.39%

Source: Bloomberg

In June 2017, the Federal Reserve Board, acting through its Federal Open Market Committee, decided to raise the target range for the federal funds rate to 1.00% to 1.25%, 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 six months ended June 30, 2017, the cost of FHLBank consolidated obligations, as measured by the spread to comparative U.S. Treasury rates, improved slightly, but has remained relatively stable. Average funding spreads to three-month LIBOR improved for the three and six months ended June 30, 2017 compared to the same periods in 2016, resulting primarily from increased investor demand for FHLBank consolidated obligations and rising LIBOR. 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		Six-Month Average		Ending Spread	
Borrowing Term	**June 30, 2017**	**June 30, 2016**	**June 30, 2017**	**June 30, 2016**	**June 30, 2017**	**December 31, 2016**
3-months	(23.2)	(25.2)	(32.7)	(23.2)	(23.6)	(42.7)
2-years	(15.4)	(2.8)	(17.7)	0.7	(17.0)	(16.5)
5-years	3.1	17.5	3.0	20.4	0.6	9.0
10-years	47.7	58.5	49.6	62.7	39.9	57.7

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 $1.082 trillion at June 30, 2017, an increase of 2.4% from $1.057 trillion at December 31, 2016.

- Advances were $706.8 billion at June 30, 2017, the highest balance since mid-2009, and an increase of 0.2% from $705.2 billion at December 31, 2016. Commercial banks were the largest member borrowers with 65.2% of total par value of advances outstanding at June 30, 2017. The top 10 advance holding company borrowers represented 37.8% of total par value of advances outstanding at June 30, 2017.

- Investments totaled $312.5 billion at June 30, 2017, an increase of 7.0% from $292.0 billion at December 31, 2016, driven by an increase in federal funds sold.

- Mortgage loans held for portfolio, net were $50.5 billion at June 30, 2017, an increase of 4.3% from $48.5 billion at December 31, 2016, as mortgage loan purchases of $5.5 billion outpaced principal repayments of $3.4 billion.

Total liabilities were $1.027 trillion at June 30, 2017, an increase of 2.3% from $1.004 trillion at December 31, 2016, primarily the result of an increase in consolidated obligations.

- Consolidated obligations were $1,010.9 billion at June 30, 2017, an increase of 2.2% from $988.7 billion at December 31, 2016, consistent with the increase in total assets. The increase in total consolidated obligations consisted of a 4.6% increase in consolidated discount notes, resulting from an ongoing investor preference for short-term, highly liquid, debt securities, and a 0.6% increase in consolidated bonds.

Total GAAP capital was $54.6 billion at June 30, 2017, an increase of 4.0% from $52.5 billion at December 31, 2016. This increase was driven by growth in retained earnings, as well as increases in capital stock and accumulated other comprehensive income. The GAAP capital-to-assets ratio was 5.04% and the regulatory capital-to-assets ratio was 5.14% at June 30, 2017. Each FHLBank was in compliance with FHFA regulatory capital requirements at June 30, 2017.

- Capital stock was $36.9 billion at June 30, 2017, an increase of 1.8% from $36.2 billion at December 31, 2016.

- Retained earnings were $17.2 billion at June 30, 2017, an increase of 5.6% from $16.3 billion at December 31, 2016, resulting from net income of $1,656 million, offset by dividends of $748 million.

Combined Results of Operations. Net income was $844 million for the three months ended June 30, 2017, an increase of $48 million, or 6.0%, compared to the same period in 2016. This increase was primarily the result of an increase in net interest income, partially offset by lower gains on litigation settlements. Net income was $1,656 million for the six months ended June 30, 2017, an increase of $26 million, or 1.6%, compared to the same period in 2016. This increase was primarily the result of gains on derivatives and hedging activities and an increase in net interest income, partially offset by lower gains on litigation settlements and an increase in non-interest expense.

Net interest income after provision (reversal) for credit losses was $1,188 million for the three months ended June 30, 2017, an increase of $284 million, or 31.4%, compared to the same period in 2016. Net interest margin was 0.46% for the three months ended June 30, 2017, an increase of 9 basis points compared to the same period in 2016. Net interest income after provision (reversal) for credit losses was $2,008 million for the six months ended June 30, 2017, an increase of $168 million, or 9.1%, compared to the same period in 2016. Net interest margin was 0.38% for the six months ended June 30, 2017, unchanged compared to the same period in 2016.

Non-interest income was $37 million for the three months ended June 30, 2017, a decrease of $217 million, or 85.4%, compared to the same period in 2016, due primarily to lower gains on litigation settlements. Non-interest income was $529 million for the six months ended June 30, 2017, an increase of $7 million, or 1.3%, compared to the same period in 2016, resulting primarily from gains on derivatives and hedging activities, offset by lower gains on litigation settlements.

Non-interest expense was $285 million for the three months ended June 30, 2017, an increase of $15 million, or 5.6%, compared to the same period in 2016. Non-interest expense was $692 million for the six months ended June 30, 2017, an increase of $146 million, or 26.7%, compared to the same period in 2016, due primarily to a charge resulting from a bankruptcy claim settlement and a charitable contribution expense.

Affordable Housing Program assessments were $96 million and $189 million for the three and six months ended June 30, 2017, increases of $4 million, or 4.3%, and $3 million, or 1.6%, compared to the same periods in 2016. Affordable Housing Program assessments result from individual FHLBank income subject to assessments.

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

Combined Financial Condition

The following discussion contains information on the major categories of the Combined Statement of Condition: advances, investments, mortgage loans, consolidated obligations, deposits, and capital. The key balance sheet highlights as of June 30, 2017, compared to December 31, 2016, were:

- Total assets were $1.082 trillion at June 30, 2017, an increase of 2.4% from $1.057 trillion at December 31, 2016;
- Total liabilities were $1.027 trillion at June 30, 2017, an increase of 2.3% from $1.004 trillion at December 31, 2016; and
- Total GAAP capital was $54.6 billion at June 30, 2017, an increase of 4.0% from $52.5 billion at December 31, 2016.

Advances

The FHLBanks provide liquidity 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.

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)

	June 30, 2017		December 31, 2016		
	Amount	Percentage of Total Par Value of Advances	Amount	Percentage of Total Par Value of Advances	Change
Fixed-rate					
Due in 1 year or less	$ 228,090	32.3%	$ 181,631	25.8%	$ 46,459
Due after 1 year through 3 years	78,672	11.1%	73,782	10.5%	4,890
Due after 3 years through 5 years	30,175	4.3%	33,368	4.7%	(3,193)
Thereafter	15,424	2.2%	18,152	2.6%	(2,728)
Total par value	352,361	49.9%	306,933	43.6%	45,428
Fixed-rate, callable or prepayable(1)					
Due in 1 year or less	1,313	0.2%	22	—	1,291
Due after 1 year through 3 years	357	0.1%	60	—	297
Due after 3 years through 5 years	339	—	224	—	115
Thereafter	208	—	234	—	(26)
Total par value	2,217	0.3%	540	—	1,677
Fixed-rate, putable					
Due in 1 year or less	3,635	0.5%	3,670	0.5%	(35)
Due after 1 year through 3 years	2,159	0.3%	3,042	0.4%	(883)
Due after 3 years through 5 years	1,343	0.2%	1,806	0.3%	(463)
Thereafter	3,958	0.6%	2,619	0.4%	1,339
Total par value	11,095	1.6%	11,137	1.6%	(42)
Variable-rate					
Due in 1 year or less	92,678	13.1%	68,119	9.7%	24,559
Due after 1 year through 3 years	65,405	9.3%	72,278	10.3%	(6,873)
Due after 3 years through 5 years	17,046	2.5%	18,936	2.7%	(1,890)
Thereafter	3,860	0.5%	2,870	0.4%	990
Total par value	178,989	25.4%	162,203	23.1%	16,786
Variable-rate, callable or prepayable(1)					
Due in 1 year or less	34,123	4.8%	31,644	4.5%	2,479
Due after 1 year through 3 years	39,120	5.5%	76,406	10.9%	(37,286)
Due after 3 years through 5 years	34,619	4.9%	51,139	7.3%	(16,520)
Thereafter	42,702	6.0%	53,134	7.5%	(10,432)
Total par value	150,564	21.2%	212,323	30.2%	(61,759)
Other(2)					
Due in 1 year or less	1,602	0.2%	1,529	0.2%	73
Due after 1 year through 3 years	1,990	0.3%	2,296	0.3%	(306)
Due after 3 years through 5 years	2,050	0.3%	2,109	0.3%	(59)
Thereafter	4,002	0.6%	3,785	0.5%	217
Total par value	9,644	1.4%	9,719	1.3%	(75)
Index-amortizing(3)	1,424	0.2%	1,448	0.2%	(24)
Overdrawn and overnight deposit accounts	82	—	6	—	76
Total par value advances	706,376	100.0%	704,309	100.0%	$ 2,067
Other adjustments(4)	473		916		
Total advances	$ 706,849		$ 705,225		

(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) Index-amortizing advances require repayment according to predetermined amortization schedules linked to the level of various indices. Generally, as market interest rates rise (fall), the maturity of an index-amortizing advance extends (contracts).
(4) Consists of hedging and fair value option valuation adjustments, unamortized premiums, discounts, and commitment fees.

The outstanding carrying value of advances was $706.8 billion at June 30, 2017, an increase of $1.6 billion or 0.2% from $705.2 billion at December 31, 2016. Although total advances remained relatively flat from December 31, 2016 to June 30, 2017, the product mix changed, as the balance of non-callable and non-prepayable fixed- and variable-rate advances increased, whereas the balance of variable-rate advances with call or prepayment options decreased. The percentage of members with outstanding advances was 57.5% at June 30, 2017 compared to 57.1% at December 31, 2016.

Table 4 presents cash flows related to advance originations and advance repayments, which illustrates advance originations exceeding repayments during the three and six months ended June 30, 2017 and 2016, resulting in growth in advances outstanding during those periods. The increase in both advance originations and advance repayments during the three and six months ended June 30, 2017, was driven by increases in advances with short-term maturities compared to the same periods in 2016.

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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017	2016	Change	2017	2016	Change
Advances originated	$ 2,610,378	$ 1,886,557	$ 723,821	$ 4,432,851	$ 3,428,186	$ 1,004,665
Advances repaid	2,564,519	1,815,363	749,156	4,430,786	3,374,469	1,056,317
Net change	$ 45,859	$ 71,194		$ 2,065	$ 53,717	

The FHLBanks make advances primarily to their members. Table 5 presents advances at par value by type of borrower and Table 6 presents member borrowers by type of member.

Table 5 - Advances at Par Value by Type of Borrower
(dollars in millions)

	June 30, 2017		December 31, 2016	
	Par Value	Percentage of Total Par Value of Advances	Par Value	Percentage of Total Par Value of Advances
Commercial bank members	$ 460,577	65.2%	$ 452,712	64.3%
Insurance company members(1)	100,890	14.3%	101,739	14.5%
Savings institution members	82,899	11.7%	86,188	12.2%
Credit union members	46,625	6.6%	46,666	6.6%
Community development financial institution members	147	—	121	—
Total member advances	691,138	97.8%	687,426	97.6%
Non-member borrowers	14,393	2.1%	16,173	2.3%
Housing associates	845	0.1%	710	0.1%
Total par value	$ 706,376	100.0%	$ 704,309	100.0%

(1) Includes $25.9 billion and $31.1 billion of advances outstanding at par value to captive insurance members at June 30, 2017 and December 31, 2016.

Table 6 - Member Borrowers by Type of Member

	June 30, 2017		December 31, 2016	
	Number	Percentage of Total Member Borrowers	Number	Percentage of Total Member Borrowers
Commercial banks	2,777	68.7%	2,799	68.8%
Credit unions	542	13.4%	532	13.1%
Savings institutions	531	13.2%	549	13.5%
Insurance companies	169	4.2%	168	4.1%
Community development financial institutions	19	0.5%	19	0.5%
Total member borrowers	4,038	100.0%	4,067	100.0%
Total members	7,027		7,125	

Table 7 presents the FHLBanks' top 10 advance holding borrowers at the holding-company level on a combined basis based on advances outstanding at par at June 30, 2017. The percentage of total advances for each holding company was computed by dividing the par value of advances by subsidiaries of that holding company by the total combined par value of advances. These percentage concentrations do not represent borrowing concentrations in an individual FHLBank.

Table 7 - Top 10 Advance Holding Borrowers by Holding Company at June 30, 2017
(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Par Value	Percentage of Total Par Value of Advances
JPMorgan Chase & Co.	Pittsburgh, Cincinnati, Chicago, Des Moines, San Francisco	$ 68,430	9.7%
Wells Fargo & Company	Des Moines, San Francisco	62,563	8.9%
Citigroup Inc.	New York, Dallas, San Francisco	35,551	5.0%
Bank of America Corporation	Boston, Atlanta, Des Moines, San Francisco	23,157	3.3%
The PNC Financial Services Group, Inc.	Pittsburgh, Atlanta, Cincinnati	19,039	2.7%
MetLife, Inc.	Boston, New York, Pittsburgh, Des Moines	15,965	2.3%
New York Community Bancorp, Inc.	New York	11,555	1.6%
Ally Financial Inc.	Pittsburgh	10,800	1.5%
Navy Federal Credit Union	Atlanta	10,162	1.4%
U.S. Bancorp	Cincinnati, Des Moines, Topeka	9,788	1.4%
		$ 267,010	37.8%

(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 June 30, 2017, 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. This investment income bolsters the FHLBanks' capacity to meet their commitments to affordable housing and community investment. Within the investment portfolio, the FHLBanks invest in investment-quality securities to reduce their credit risk. Investments totaled $312.5 billion at June 30, 2017, an increase of $20.5 billion or 7.0% from $292.0 billion at December 31, 2016, driven by an increase in federal funds sold. 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.)

The FHLBanks maintain short-term investment portfolios, 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;
- U.S. Treasury obligations;
- certificates of deposit; and
- GSE obligations.

The yield earned on these short-term investments is tied directly to short-term market interest rates. At June 30, 2017, the FHLBanks continued to maintain significant short-term investment balances as part of their ongoing 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 primarily to provide additional liquidity and to earn interest income. These investments generally provide the FHLBanks with higher returns than those available on short-term investments.

Table 8 presents the composition of investments and investment securities at June 30, 2017 and December 31, 2016. For disclosures related to an individual FHLBank's investment holdings that exceed 10% of its respective total capital, see that FHLBank's 2016 SEC Form 10-K or its 2017 Second Quarter SEC Form 10-Q for any updates.

Table 8 - Total Investments
(dollars in millions)

Carrying Value	June 30, 2017	December 31, 2016	Change
Interest-bearing deposits	$ 3,122	$ 2,878	$ 244
Securities purchased under agreements to resell	48,417	52,771	(4,354)
Federal funds sold	74,622	48,633	25,989
Total Investment Securities by Major Security Type			
Investment securities non-mortgage-backed securities			
U.S. Treasury obligations	613	1,606	(993)
Certificates of deposit	2,750	3,050	(300)
Other U.S. obligations	5,792	6,249	(457)
GSE and Tennessee Valley Authority obligations	28,020	28,406	(386)
State or local housing agency obligations	3,828	3,848	(20)
Federal Family Education Loan Program ABS	4,412	4,572	(160)
Other	1,288	1,354	(66)
Total investment securities non-mortgage-backed securities	46,703	49,085	(2,382)
Investment securities mortgage-backed securities			
Other U.S. obligations single-family MBS	13,588	14,090	(502)
Other U.S. obligations multifamily MBS	496	568	(72)
GSE single-family MBS	46,803	50,819	(4,016)
GSE multifamily MBS	68,679	61,982	6,697
Private-label residential MBS	9,900	10,951	(1,051)
Manufactured housing loan ABS	62	69	(7)
Home equity loan ABS	156	171	(15)
Total investment securities mortgage-backed securities	139,684	138,650	1,034
Total investment securities	186,387	187,735	(1,348)
Total investments	$ 312,548	$ 292,017	$ 20,531

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 prepayment and interest-rate risk 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, an economic hedge, or a cash flow 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 June 30, 2017 and December 31, 2016.

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

	June 30, 2017	December 31, 2016
Trading Securities at Fair Value		
Trading non-mortgage-backed securities		
Fixed-rate	$ 2,849	$ 3,241
Variable-rate	3,766	4,564
Total trading non-mortgage-backed securities	6,615	7,805
Trading mortgage-backed securities		
Fixed-rate	1,514	1,509
Variable-rate	132	147
Total trading mortgage-backed securities	1,646	1,656
Total trading securities	$ 8,261	$ 9,461
Available-for-Sale Securities at Amortized Cost		
Available-for-sale non-mortgage-backed securities		
Fixed-rate	$ 20,008	$ 21,136
Variable-rate	7,088	7,456
Total available-for-sale non-mortgage-backed securities	27,096	28,592
Available-for-sale mortgage-backed securities		
Fixed-rate	28,989	28,105
Variable-rate	23,944	24,214
Total available-for-sale mortgage-backed securities	52,933	52,319
Total available-for-sale securities	$ 80,029	$ 80,911
Held-to-Maturity Securities at Amortized Cost		
Held-to-maturity non-mortgage-backed securities		
Fixed-rate	$ 6,244	$ 6,483
Variable-rate	6,392	6,063
Total held-to-maturity non-mortgage-backed securities	12,636	12,546
Held-to-maturity mortgage-backed securities		
Fixed-rate	29,323	31,076
Variable-rate	55,276	53,411
Total held-to-maturity mortgage-backed securities	84,599	84,487
Total held-to-maturity securities	$ 97,235	$ 97,033

Net Unrealized Gains (Losses) on AFS and HTM Investment Securities. The FHLBanks held AFS and HTM securities in net unrealized gain (loss) positions. These net unrealized gains (losses) are due primarily to changes in interest rates, credit spreads, rate volatility, and/or illiquidity.

Net unrealized gains, including the net effect of non-credit related other-than-temporary impairment (OTTI) recognized in accumulated other comprehensive income (loss) (AOCI), on AFS securities totaled $1,248 million at June 30, 2017, an increase of $486 million from December 31, 2016. This increase was due primarily to higher net unrealized gains on private-label residential MBS, GSE and Tennessee Valley Authority obligations, GSE multifamily MBS, and Federal Family Education Loan Program ABS. (See *Note 4 - Available-for-Sale Securities* to the accompanying combined financial statements for additional information regarding AFS securities.)

Net unrealized gains, including the net effect of non-credit-related OTTI recognized in AOCI, on HTM securities totaled $700 million, an increase of $376 million from December 31, 2016. This increase was due primarily to higher net unrealized gains on GSE single-family MBS, GSE multifamily MBS, and private-label residential MBS. (See *Note 5 - Held-to-Maturity Securities* to the accompanying combined financial statements for additional information regarding HTM securities).

OTTI on Investment Securities. Each FHLBank evaluates its individual AFS and HTM investment securities holdings for OTTI on a quarterly basis. Private-label residential MBS, manufactured housing loan ABS, and home equity loan ABS (collectively referred to as private-label mortgage-backed securities) are those investment securities that generally carry the greatest risk of loss. (See *Note 6 - Other-than-Temporary Impairment Analysis* to the accompanying combined financial statements and *Risk Management - Credit Risk - Investments* for additional information.)

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 June 30, 2017, each of the FHLBanks of Chicago and Topeka was precluded from purchasing additional MBS/ABS investments until its respective MBS/ABS to total regulatory capital percentage declines below 300%. 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, at June 30, 2017, the FHLBanks' percentage of MBS/ABS (net of regulatory excluded MBS) was 258% of total combined regulatory capital.

Mortgage Loans Held for Portfolio, Net

An FHLBank may purchase mortgage loans to support the FHLBank's housing mission, provide an additional source of liquidity to FHLBank members, diversify its investments, and generate additional earnings. The two primary programs are the Mortgage Purchase Program (MPP) and the Mortgage Partnership Finance® (MPF) Program. (See *Risk Management - Credit Risk - Mortgage Loans Held for Portfolio* for more information.)

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

	June 30, 2017	December 31, 2016	Change
Mortgage loans held for portfolio	$ 50,555	$ 48,494	$ 2,061
Allowance for credit losses on mortgage loans	(17)	(18)	1
Total mortgage loans held for portfolio, net	$ 50,538	$ 48,476	$ 2,062

Mortgage Loans Held for Portfolio. Mortgage loans were $50.6 billion at June 30, 2017, an increase of 4.3% from $48.5 billion at December 31, 2016, as mortgage loan purchases exceeded principal repayments.

As of June 30, 2017, the FHLBank of Atlanta was not accepting additional master commitments to acquire loans for its own portfolio. However, during 2016, the FHLBank of Atlanta acquired from the FHLBank of Indianapolis a participating interest in an MPP master commitment with a member of the FHLBank of Indianapolis. This funding was completed and the master commitment was closed in January 2017. The FHLBank of Des Moines was not accepting additional master commitments to purchase mortgage loans under the MPP at June 30, 2017, and expects the balance of these existing loans, acquired through its merger with the FHLBank of Seattle, to decrease as they are paid off. However, the FHLBank of Des Moines continues to acquire mortgage loans under the MPF Program. 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. The allowance for credit losses on mortgage loans was $17 million at June 30, 2017, a decrease of 5.6% from $18 million at December 31, 2016.

Table 11 - Mortgage Loans Held for Portfolio - Characteristics and Credit Losses
(dollars in millions)

Unpaid Principal Balance	June 30, 2017	December 31, 2016
Total past due 90 days or more and still accruing interest	$ 100	$ 126
Non-accrual loans	$ 206	$ 241
Troubled debt restructurings (not included above)(1)	$ 98	$ 103

	Six Months Ended June 30, 2017	Year Ended December 31, 2016
Allowance for credit losses, beginning of period	$ 18	$ 18
Charge-offs, net of recoveries	(2)	(6)
Provision (reversal) for credit losses	1	6
Allowance for credit losses, end of period	$ 17	$ 18

(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 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. Consolidated obligations are the principal funding source used by the FHLBanks to make advances and to purchase mortgage loans and investments. The carrying value of consolidated obligations was $1,010.9 billion at June 30, 2017, an increase of $22.2 billion or 2.2% from $988.7 billion at December 31, 2016, consistent with the increase in total assets.

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 have maturities ranging from one month to 30 years. The carrying value of consolidated bonds was $582.2 billion at June 30, 2017, an increase of $3.3 billion or 0.6% from $578.9 billion at December 31, 2016. Consolidated bonds represented 57.6% and 58.6% of total consolidated obligations outstanding at June 30, 2017 and December 31, 2016.

Consolidated discount notes are issued primarily to provide short-term funding and have a maturity range of one day to one year. They are generally issued at or below par, and mature at par. 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 $428.7 billion at June 30, 2017, an increase of $18.9 billion or 4.6% from $409.8 billion at December 31, 2016. Consolidated discount notes represented 42.4% and 41.4% of total consolidated obligations outstanding at June 30, 2017 and December 31, 2016.

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

	June 30, 2017		December 31, 2016		
	Amount	Percentage of Total Par Value of Consolidated Obligations	Amount	Percentage of Total Par Value of Consolidated Obligations	Change
Consolidated Discount Notes					
Overnight	$ 13,677	1.4%	$ 5,201	0.5%	$ 8,476
Due after 1 day through 30 days	157,141	15.5%	159,352	16.1%	(2,211)
Due after 30 days through 90 days	205,156	20.2%	192,622	19.4%	12,534
Due after 90 days through 1 year	53,274	5.3%	52,947	5.4%	327
Total par value	429,248	42.4%	410,122	41.4%	19,126
Consolidated Bonds					
Fixed-rate, non-callable					
Due in 1 year or less	63,829	6.3%	78,335	7.9%	(14,506)
Due after 1 year through 3 years	82,167	8.1%	85,847	8.7%	(3,680)
Due after 3 years through 5 years	25,969	2.6%	27,663	2.8%	(1,694)
Thereafter	16,576	1.7%	16,946	1.7%	(370)
Total par value	188,541	18.7%	208,791	21.1%	(20,250)
Fixed-rate, callable					
Due in 1 year or less	7,294	0.7%	4,104	0.4%	3,190
Due after 1 year through 3 years	15,805	1.6%	17,566	1.8%	(1,761)
Due after 3 years through 5 years	11,843	1.2%	12,286	1.2%	(443)
Thereafter	21,463	2.1%	19,081	1.9%	2,382
Total par value	56,405	5.6%	53,037	5.3%	3,368
Variable-rate (non-capped and capped)					
Due in 1 year or less	284,702	28.2%	252,249	25.6%	32,453
Due after 1 year through 3 years	37,035	3.7%	48,091	4.9%	(11,056)
Due after 3 years through 5 years	375	—%	375	—%	—
Thereafter	—	—%	—	—%	—
Total par value	322,112	31.9%	300,715	30.5%	21,397
Step-up/step-down					
Due in 1 year or less	235	—%	215	—%	20
Due after 1 year through 3 years	2,036	0.2%	2,436	0.2%	(400)
Due after 3 years through 5 years	6,521	0.6%	6,266	0.7%	255
Thereafter	5,060	0.5%	5,689	0.6%	(629)
Total par value	13,852	1.3%	14,606	1.5%	(754)
Other(1)					
Due in 1 year or less	64	—%	667	0.1%	(603)
Due after 1 year through 3 years	25	—%	138	—%	(113)
Due after 3 years through 5 years	205	—%	215	—%	(10)
Thereafter	1,074	0.1%	1,019	0.1%	55
Total par value	1,368	0.1%	2,039	0.2%	(671)
Total par value consolidated bonds	582,278	57.6%	579,188	58.6%	3,090
Total par value	1,011,526	100.0%	989,310	100.0%	$ 22,216
Other adjustments(2)	(594)		(568)		
Total consolidated obligations	$ 1,010,932		$ 988,742		

(1) Includes index-amortizing notes.
(2) Consists of hedging and fair value option valuation adjustments, unamortized premiums and discounts, and also consists of combining adjustments of $121 million and $234 million at June 30, 2017 and December 31, 2016.

Table 13 presents cash flows related to consolidated obligations, which illustrates proceeds exceeding payments for the three and six months ended June 30, 2017 and 2016, resulting in an increase in consolidated obligations outstanding. The volume for both issuances and payments of consolidated obligations increased during the three and six months ended June 30, 2017, compared to the same periods in 2016. This was due to ongoing short-term funding needs resulting from investor preference for highly liquid debt securities and short-term advance demand.

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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017	2016	Change	2017	2016	Change
Net proceeds from issuance of consolidated obligations						
Discount notes	$ 1,728,607	$ 969,012	$ 759,595	$ 3,055,017	$ 1,746,568	$ 1,308,449
Bonds	113,917	136,368	(22,451)	208,176	254,686	(46,510)
Net proceeds	1,842,524	1,105,380	$ 737,144	3,263,193	2,001,254	$ 1,261,939
Payments for maturing and retiring consolidated obligations						
Discount notes	1,677,007	935,397	$ 741,610	3,036,285	1,769,736	$ 1,266,549
Bonds	113,450	103,057	10,393	204,926	173,042	31,884
Net payments	1,790,457	1,038,454	$ 752,003	3,241,211	1,942,778	$ 1,298,433
Net change	$ 52,067	$ 66,926		$ 21,982	$ 58,476	

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

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 six months ended June 30, 2017, investors preferred variable-rate consolidated obligations to fixed-rate consolidated obligations as a result of money market fund reform and investor expectations that interest rates may rise. 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 June 30,		Six Months Ended June 30,	
	2017	2016	2017	2016
Single-index, variable-rate	84.4%	59.1%	82.4%	60.3%
Fixed-rate, noncallable	10.9%	25.8%	11.9%	26.4%
Fixed-rate, callable	3.8%	12.0%	4.1%	10.7%
Step-up/step-down(1)	0.9%	2.8%	1.5%	2.3%
Other	—	0.3%	0.1%	0.3%
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 qualifying non-members. In addition, certain FHLBanks offer short-term interest-bearing deposit programs to members, and in certain cases, qualifying non-members. Deposits represent a relatively small portion of the FHLBanks' funding, totaling $9.3 billion at June 30, 2017, an increase of $1.2 billion or 15.4% from December 31, 2016. 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 92.3% and 87.8% of deposits at June 30, 2017 and December 31, 2016, with the remaining deposits primarily being term deposits and non-interest bearing deposits.

Capital

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

	June 30, 2017	December 31, 2016	Change
Capital stock	$ 36,883	$ 36,234	$ 649
Additional capital from merger	—	52	(52)
Retained earnings	17,238	16,330	908
AOCI	442	(157)	599
Total GAAP capital	54,563	52,459	2,104
Exclude: AOCI	(442)	157	(599)
Add: Mandatorily redeemable capital stock	1,484	1,704	(220)
Other(1)	(3)	(2)	(1)
Total combined regulatory capital(2)	$ 55,602	$ 54,318	$ 1,284
Total assets	$ 1,081,699	$ 1,056,712	$ 24,987
Combined GAAP capital-to-assets ratio	5.04%	4.96%	
Combined regulatory capital-to-assets ratio(3)	5.14%	5.14%	

———————

(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 $54.6 billion at June 30, 2017, an increase of 4.0% from $52.5 billion at December 31, 2016. This increase was driven by growth in retained earnings, as well as increases in capital stock and accumulated other comprehensive income. The combined GAAP capital-to-assets ratio was 5.04% at June 30, 2017, an increase of 8 basis points from 4.96% at December 31, 2016.

Capital Stock. Capital stock was $36.9 billion at June 30, 2017, an increase of 1.8% from $36.2 billion at December 31, 2016. This increase was driven by proceeds from issuance of capital stock consistent with the increase of advances.

Retained Earnings. Retained earnings were $17.2 billion at June 30, 2017, an increase of 5.6% from $16.3 billion at December 31, 2016. This increase was the result of net income of $1,656 million, offset by dividends of $748 million. Unrestricted retained earnings were $12.3 billion at June 30, 2017, an increase of 4.0% from $11.8 billion at December 31, 2016. Restricted retained earnings were $5.0 billion at June 30, 2017, an increase of 9.6% from $4.5 billion at December 31, 2016.

Accumulated Other Comprehensive Income (Loss). Accumulated other comprehensive income was $442 million at June 30, 2017, an increase of $599 million from a loss of $157 million at December 31, 2016. This increase resulted primarily from higher net unrealized gains on private-label residential MBS, GSE and Tennessee Valley Authority obligations, GSE multifamily MBS, and Federal Family Education Loan Program ABS. (See *Combined Financial Condition - Investments* for more information.)

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

	June 30, 2017	December 31, 2016
Capital stock	67.6%	69.1 %
Additional capital from merger	—	0.1 %
Retained earnings	31.6%	31.1 %
AOCI	0.8%	(0.3)%
Total GAAP capital	100.0%	100.0 %

Regulatory Capital. Total combined regulatory capital was $55.6 billion at June 30, 2017, an increase of 2.4% from $54.3 billion at December 31, 2016, driven by increases in retained earnings and capital stock, partially offset by a decrease in mandatorily redeemable capital stock.

Combined Results of Operations

Net Income

Net income was $844 million for the three months June 30, 2017, an increase of 6.0% compared to the same period in 2016. This increase was primarily the result of an increase in net interest income, partially offset by lower gains on litigation settlements.

Net income was $1,656 million for the six months ended June 30, 2017, an increase of 1.6% compared to the same period in 2016. This increase was primarily the result of gains on derivatives and hedging activities and an increase in net interest income, partially offset by lower gains on litigation settlements and an increase in non-interest expense.

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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017	2016	Change	2017	2016	Change
Net interest income after provision (reversal) for credit losses	$ 1,188	$ 904	$ 284	$ 2,008	$ 1,840	$ 168
Non-interest income	37	254	(217)	529	522	7
Non-interest expense	285	270	15	692	546	146
Affordable Housing Program assessments	96	92	4	189	186	3
Net income	$ 844	$ 796	$ 48	$ 1,656	$ 1,630	$ 26

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, mandatorily redeemable capital stock, and other borrowings. Net interest income after provision (reversal) for credit losses was $1,188 million and $2,008 million for the three and six months ended June 30, 2017, increases of 31.4% and 9.1% compared to the same periods in 2016. Net interest margin was 0.46% for the three months ended June 30, 2017, an increase of 9 basis points compared to the same period in 2016. Net interest margin was 0.38% for the six months ended June 30, 2017, unchanged compared to the same period in 2016.

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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017	2016	Change	2017	2016	Change
Interest income						
Advances	$ 2,175	$ 1,234	$ 941	$ 3,705	$ 2,375	$ 1,330
Prepayment fees on advances, net	8	37	(29)	17	50	(33)
Investments and other	1,244	971	273	2,367	1,955	412
Mortgage loans held for portfolio	421	392	29	835	800	35
Total interest income	3,848	2,634	1,214	6,924	5,180	1,744
Interest expense						
Consolidated obligations - Discount notes	851	513	338	1,477	1,002	475
Consolidated obligations - Bonds	1,775	1,179	596	3,373	2,264	1,109
Total consolidated obligations	2,626	1,692	934	4,850	3,266	1,584
Mandatorily redeemable capital stock and other borrowings	33	37	(4)	65	72	(7)
Total interest expense	2,659	1,729	930	4,915	3,338	1,577
Net interest income	1,189	905	284	2,009	1,842	167
Provision (reversal) for credit losses	1	1	—	1	2	(1)
Net interest income after provision (reversal) for credit losses	$ 1,188	$ 904	$ 284	$ 2,008	$ 1,840	$ 168

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 June 30,					
	2017			2016		
	Average Balance	Interest	Annualized Yield	Average Balance	Interest	Annualized Yield
Assets						
Interest-bearing deposits and other	$ 5,538	$ 15	1.09%	$ 8,420	$ 8	0.38%
Securities purchased under agreements to resell	18,575	42	0.91%	22,256	20	0.36%
Federal funds sold	84,125	204	0.97%	66,999	63	0.38%
Investment securities(1)(2)	182,626	983	2.16%	186,428	880	1.90%
Advances(3)	707,271	2,183	1.24%	659,587	1,271	0.78%
Mortgage loans	49,599	421	3.40%	45,094	392	3.50%
Total interest-earning assets	1,047,734	3,848	1.47%	988,784	2,634	1.07%
Other non-interest-earning assets	6,995			5,786		
Fair-value adjustment on investment securities(2)	2,326			409		
Total assets	$ 1,057,055			$ 994,979		
Liabilities and Capital						
Consolidated obligations - Discount notes	$ 402,619	851	0.85%	$ 448,838	513	0.46%
Consolidated obligations - Bonds	583,493	1,775	1.22%	476,384	1,179	1.00%
Mandatorily redeemable capital stock and other borrowings(4)	9,861	33	1.34%	10,982	37	1.36%
Total interest-bearing liabilities	995,973	2,659	1.07%	936,204	1,729	0.74%
Non-interest-bearing liabilities	7,877			10,561		
Total liabilities	1,003,850			946,765		
Capital	53,205			48,214		
Total liabilities and capital	$ 1,057,055			$ 994,979		
Net interest income		$ 1,189			$ 905	
Net interest spread			0.40%			0.33%
Net interest margin			0.46%			0.37%

	Six Months Ended June 30,					
	2017			2016		
	Average Balance	Interest	Annualized Yield	Average Balance	Interest	Annualized Yield
Assets						
Interest-bearing deposits and other	$ 5,424	$ 26	0.97%	$ 8,156	$ 18	0.44%
Securities purchased under agreements to resell	18,942	71	0.76%	24,052	42	0.35%
Federal funds sold	83,633	351	0.85%	67,126	123	0.37%
Investment securities(1)(2)	183,500	1,919	2.11%	184,798	1,772	1.93%
Advances(3)	711,826	3,722	1.05%	652,701	2,425	0.75%
Mortgage loans	49,177	835	3.42%	44,858	800	3.59%
Total interest-earning assets	1,052,502	6,924	1.33%	981,691	5,180	1.06%
Other non-interest-earning assets	6,989			6,016		
Fair-value adjustment on investment securities(2)	2,116			358		
Total assets	$ 1,061,607			$ 988,065		
Liabilities and Capital						
Consolidated obligations - Discount notes	$ 405,800	1,477	0.73%	$ 462,517	1,002	0.44%
Consolidated obligations - Bonds	584,895	3,373	1.16%	456,203	2,264	1.00%
Mandatorily redeemable capital stock and other borrowings(4)	9,903	65	1.32%	11,079	72	1.31%
Total interest-bearing liabilities	1,000,598	4,915	0.99%	929,799	3,338	0.72%
Non-interest-bearing liabilities	7,853			10,272		
Total liabilities	1,008,451			940,071		
Capital	53,156			47,994		
Total liabilities and capital	$ 1,061,607			$ 988,065		
Net interest income		$ 2,009			$ 1,842	
Net interest spread			0.34%			0.34%
Net interest margin			0.38%			0.38%

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(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 OTTI reflected in AOCI.
(3) Interest income for advances includes prepayment fees on advances, net.
(4) The average balances of other borrowings do not include non-interest-bearing deposits, but do include the average balances and the related interest expense of deposits and subordinated notes.

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 volume-related and rate-related factors. Changes in interest income and interest expense not identifiable as either volume-related or rate-related, but rather attributable to both volume and rate changes, have been allocated to the volume and rate categories based on the proportion of the absolute value of the volume and rate changes.

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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017 vs. 2016			2017 vs. 2016		
	Volume	Rate	Total	Volume	Rate	Total
Interest Income						
Interest-bearing deposits and other	$ (4)	$ 11	$ 7	$ (8)	$ 16	$ 8
Securities purchased under agreements to resell	(4)	26	22	(11)	40	29
Federal funds sold	20	121	141	36	192	228
Investment securities(1)	(18)	121	103	(12)	159	147
Advances(2)	98	814	912	242	1,055	1,297
Mortgage loans	39	(10)	29	76	(41)	35
Total interest income	131	1,083	1,214	323	1,421	1,744
Interest Expense						
Consolidated obligations - Discount notes	(58)	396	338	(134)	609	475
Consolidated obligations - Bonds	299	297	596	713	396	1,109
Mandatorily redeemable capital stock and other borrowings(3)	(4)	—	(4)	(7)	—	(7)
Total interest expense	237	693	930	572	1,005	1,577
Changes in net interest income	$ (106)	$ 390	$ 284	$ (249)	$ 416	$ 167

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(1) Investment securities consist of Trading, AFS, and HTM securities.
(2) Includes prepayment fees on advances, net.
(3) Other borrowings does not include non-interest-bearing deposits, but does include the related interest expense of deposits and subordinated notes.

Net interest income was $1,189 million and $2,009 million for the three and six months ended June 30, 2017, increases of 31.4% and 9.1% compared to the same periods in 2016. Interest income was $3,848 million and $6,924 million for the three and six months ended June 30, 2017, increases of 46.1% and 33.7% compared to the same periods in 2016, due primarily to 40 and 27 basis point increases in the yields on interest-earning assets. Interest expense was $2,659 million and $4,915 million for the three and six months ended June 30, 2017, increases of 53.8% and 47.2% compared to the same periods in 2016, due to 33 and 27 basis point increases in the yields on interest-bearing liabilities, and 6.4% and 7.6% increases in the average balances of interest-bearing liabilities.

Factors Affecting Net Interest Income.

Advances. Interest income on advances was $2,183 million and $3,722 million for the three and six months ended June 30, 2017, increases of 71.8% and 53.5% compared to the same periods in 2016, resulting primarily from increases in the yields on advances. The yields on advances were 1.24% and 1.05% for the three and six months ended June 30, 2017, increases of 46 and 30 basis points compared to the same periods in 2016. The increases in yields were due primarily to the higher interest rate environment, including the effect of derivative and hedging activities on advances interest income. (See Table 21 for additional information regarding the effect of derivative and hedging activities on net interest income.)

Mortgage Loans. Interest income on mortgage loans was $421 million and $835 million for the three and six months ended June 30, 2017, increases of 7.4% and 4.4% compared to the same periods in 2016, resulting from increases in the average balances of mortgage loans, partially offset by decreases in the yields on mortgage loans. The average balances of mortgage loans were $49.6 billion and $49.2 billion for the three and six months ended June 30, 2017, increases of 10.0% and 9.6% compared to the same periods in 2016. The increase in the average balances of mortgage loans was the result of mortgage loan purchases exceeding principal repayments. The yields on mortgage loans were 3.40% and 3.42% for the three and six months ended June 30, 2017, decreases of 10 and 17 basis points compared to the same periods in 2016.

Total Investments. Interest income on total investments was $1,244 million and $2,367 million for the three and six months ended June 30, 2017, increases of 28.1% and 21.1% compared to the same periods in 2016, primarily resulting from an increase in the yields on federal funds sold and investment securities. The yields on federal funds sold were 0.97% and 0.85% for the three and six months ended June 30, 2017, increases of 59 and 48 basis points compared to the same periods in 2016. The yields on investment securities were 2.16% and 2.11% for the three and six months ended June 30, 2017, increases of 26 and 18 basis points compared to the same periods in 2016. The increase in yields on federal funds sold and investment securities were driven by increases in market interest rates.

Consolidated Obligations. Interest expense on consolidated obligations was $2,626 million and $4,850 million for the three and six months ended June 30, 2017, increases of 55.2% and 48.5% compared to the same periods in 2016, resulting from an increase in the yields on consolidated discount notes and consolidated bonds, as well as an increase in the average balance of consolidated bonds.

For the three and six months ended June 30, 2017, the yields on consolidated discount notes were 0.85% and 0.73%, increases of 39 and 29 basis points, and the yields on consolidated bonds were 1.22% and 1.16%, increases of 22 and 16 basis points compared to the same periods in 2016. The increases in the yields on consolidated discount notes and consolidated bonds were due primarily to the higher interest rate environment, including the effect of derivatives and hedging activities on consolidated bonds interest expense. (See Table 21 for additional information regarding the effect of derivatives and hedging activities on net interest income.) The average balances of consolidated bonds were $583.5 billion and $584.9 billion for the three and six months ended June 30, 2017, increases of 22.5% and 28.2% compared to the same periods in 2016.

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 six months ended June 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 June 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	$ (11)	$ 16	$ (4)	$ (4)	$ (1)	$ (4)
Net interest settlements included in net interest income(1)	(204)	(122)	—	77	(51)	(300)
Total effect on net interest income	$ (215)	$ (106)	$ (4)	$ 73	$ (52)	$ (304)

	Three Months Ended June 30, 2016					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (32)	$ 21	$ (7)	$ (7)	$ —	$ (25)
Net interest settlements included in net interest income(1)	(456)	(165)	—	236	(60)	(445)
Total effect on net interest income	$ (488)	$ (144)	$ (7)	$ 229	$ (60)	$ (470)

	Six Months Ended June 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	$ (321)	$ 36	$ (9)	$ (8)	$ (1)	$ (303)
Net interest settlements included in net interest income(1)	(456)	(257)	—	200	(108)	(621)
Total effect on net interest income	$ (777)	$ (221)	$ (9)	$ 192	$ (109)	$ (924)

	Six Months Ended June 30, 2016					
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	$ (61)	$ 41	$ (13)	$ (12)	$ (1)	$ (46)
Net interest settlements included in net interest income(1)	(983)	(337)	—	514	(121)	(927)
Total effect on net interest income	$ (1,044)	$ (296)	$ (13)	$ 502	$ (122)	$ (973)

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

Non-Interest Income

Non-interest income was $37 million for the three months ended June 30, 2017, a decrease of $217 million compared to the same period in 2016, due primarily to lower gains on litigation settlements. Non-interest income was $529 million for the six months ended June 30, 2017, an increase of $7 million compared to the same period in 2016, resulting primarily from gains on derivatives and hedging activities, offset by lower gains on litigation settlements and lower gains on trading securities.

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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017	2016	Change	2017	2016	Change
Net other-than-temporary impairment losses	$ (8)	$ (6)	$ (2)	$ (13)	$ (15)	$ 2
Net gains (losses) on trading securities	16	46	(30)	26	148	(122)
Net realized gains (losses) from sale of available-for-sale securities	1	3	(2)	2	16	(14)
Net realized gains (losses) from sale of held-to-maturity securities	2	1	1	2	1	1
Net gains (losses) on financial instruments held under fair value option	(1)	(10)	9	(8)	—	(8)
Net gains (losses) on derivatives and hedging activities	(17)	(73)	56	293	(310)	603
Gains on litigation settlements, net	—	252	(252)	139	600	(461)
Net gains (losses) on debt extinguishments	—	(2)	2	—	(3)	3
Other, net	44	43	1	88	85	3
Total non-interest income (loss)	$ 37	$ 254	$ (217)	$ 529	$ 522	$ 7

Gains (Losses) on Trading Securities. The FHLBanks classify certain investment securities generally held for liquidity purposes as trading securities under GAAP. Securities classified as trading 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 changes in interest rates, credit spreads, the passage of time, and volatility. Net gains on trading securities were $16 million and $26 million for the three and six months ended June 30, 2017. Net gains on trading securities were $46 million and $148 million for the three and six months ended June 30, 2016. 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 instruments 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 financial instruments. 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, the passage of time, and volatility. Hedge ineffectiveness occurs when changes in the fair value of the derivative and the associated hedged instrument 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 June 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	$ 7	$ (4)	$ —	$ (5)	$ —	$ —	$ —	$ (2)
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	1	—	—	—	1
Gains (losses) related to derivatives not designated as hedging instruments	(25)	(38)	9	54	(17)	(6)	5	(18)
Other(1)	—	—	—	—	—	—	2	2
Total net gains (losses) on derivatives and hedging activities	(18)	(42)	9	50	(17)	(6)	7	(17)
Net gains (losses) on trading securities(2)	—	17	—	—	—	—	—	17
Net gains (losses) on financial instruments held at fair value	10	—	(1)	(8)	(2)	—	—	(1)
Total effect on non-interest income	$ (8)	$ (25)	$ 8	$ 42	$ (19)	$ (6)	$ 7	$ (1)

	Three Months Ended June 30, 2016							
	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	$ 12	$ (29)	$ —	$ 8	$ (1)	$ —	$ —	$ (10)
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	(1)	4	—	—	3
Gains (losses) related to derivatives not designated as hedging instruments	(33)	(86)	—	52	(1)	(6)	8	(66)
Total net gains (losses) on derivatives and hedging activities	(21)	(115)	—	59	2	(6)	8	(73)
Net gains (losses) on trading securities(2)	—	40	—	—	—	—	—	40
Net gains (losses) on financial instruments held at fair value	20	—	—	(24)	(5)	(1)	—	(10)
Total effect on non-interest income	$ (1)	$ (75)	$ —	$ 35	$ (3)	$ (7)	$ 8	$ (43)

	Six Months Ended June 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	$ 327	$ (2)	$ —	$ (12)	$ —	$ —	$ —	$ 313
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	1	1	—	—	2
Gains (losses) related to derivatives not designated as hedging instruments	(21)	(40)	17	61	(33)	(17)	8	(25)
Other(1)	—	—	—	—	—	—	3	3
Total net gains (losses) on derivatives and hedging activities	306	(42)	17	50	(32)	(17)	11	293
Net gains (losses) on trading securities(2)	—	24	—	—	—	—	—	24
Net gains (losses) on financial instruments held at fair value	9	—	(1)	(17)	1	—	—	(8)
Total effect on non-interest income	$ 315	$ (18)	$ 16	$ 33	$ (31)	$ (17)	$ 11	$ 309

	Six Months Ended June 30, 2016							
	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	$ 30	$ (42)	$ —	$ (28)	$ (3)	$ —	$ —	$ (43)
Gains (losses) related to cash flow hedge ineffectiveness	—	—	—	(1)	4	—	—	3
Gains (losses) related to derivatives not designated as hedging instruments	(117)	(251)	(8)	140	(30)	(12)	8	(270)
Total net gains (losses) on derivatives and hedging activities	(87)	(293)	(8)	111	(29)	(12)	8	(310)
Net gains (losses) on trading securities(2)	—	135	—	—	—	—	—	135
Net gains (losses) on financial instruments held at fair value	87	—	—	(73)	(14)	—	—	—
Total effect on non-interest income	$ —	$ (158)	$ (8)	$ 38	$ (43)	$ (12)	$ 8	$ (175)

(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 losses on derivatives and hedging activities were $17 million for the three months ended June 30, 2017, due primarily to changes in the fair value of derivatives not designated as qualifying accounting hedges under GAAP. Net gains on derivatives and hedging activities were $293 million for the six months ended June 30, 2017, consisting primarily of gains related to fair value hedge ineffectiveness. Fair value hedge ineffectiveness was driven primarily 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.

Net losses on derivatives and hedging activities were $73 million and $310 million for the three and six months ended June 30, 2016, due primarily to changes in the fair value of derivatives not designated as qualifying accounting hedges under GAAP.

Gains on Litigation Settlement, Net. Certain 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 less than $1 million and $139 million for the three and six months ended June 30, 2017. Gains on litigation settlements, net of related legal expenses for the six months ended June 30, 2017, resulted 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. Gains on litigation settlements, net of related legal expenses, were $252 million and $600 million for the three and six months ended June 30, 2016, due primarily to the FHLBank of San Francisco's recognition of a settlement resulting in a net gain of $211 million during the first quarter of 2016, and the FHLBank of Des Moines' recognition of a settlement resulting in a net gain of $137 million during the first quarter of 2016 and $200 million during the second quarter of 2016.

Non-Interest Expense

Non-interest expense was $285 million for the three months ended June 30, 2017, an increase 5.6% compared to the same period in 2016. Non-interest expense was $692 million for the six months ended June 30, 2017, an increase of 26.7% compared to the same period in 2016, due primarily to an increase in other non-interest expense. This increase was primarily the result of a charge of $70 million by the FHLBank of New York to settle all claims related to the 2008 Lehman Brothers bankruptcy and a voluntary charitable contribution of $40 million for a donor-advised fund established to support quality jobs growth and small business expansion by the FHLBank of San Francisco, during the first quarter of 2017. The FHLBank of San Francisco also made a voluntary contribution of $4 million to the Affordable Housing Program (AHP) during the first quarter of 2017, recorded in other non-interest expense, to offset the impact on the AHP assessment of the expense related to the charitable contribution. (See *Note 16 - Commitments and Contingencies* for additional information related to the Lehman Brothers settlement for the FHLBank of New York.)

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

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017	2016	Change	2017	2016	Change
Compensation and benefits	$ 158	$ 151	$ 7	$ 326	$ 304	$ 22
Other operating expenses	95	88	7	187	176	11
Federal Housing Finance Agency	15	13	2	32	29	3
Office of Finance	11	11	—	26	24	2
Other	6	7	(1)	121	13	108
Total non-interest expense	$ 285	$ 270	$ 15	$ 692	$ 546	$ 146

Affordable Housing Program (AHP) Assessments

AHP assessments were $96 million and $189 million for the three and six months ended June 30, 2017, increases of 4.3% and 1.6% compared to the same periods in 2016. AHP assessments result from individual FHLBank income subject to 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.

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 the joint and several obligation 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 six months ended June 30, 2017 and 2016. 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 now is 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)

	Three Months Ended June 30,		Six Months Ended June 30,	
Effect on	**2017**	**2016**	**2017**	**2016**
Interest income	$ —	$ (2)	$ (4)	$ (7)
Interest expense	4	2	4	3
Provision (reversal) for credit losses	—	—	—	—
Net interest income after provision (reversal) for credit losses	(4)	(4)	(8)	(10)
Non-interest income	(5)	(4)	(8)	(7)
Non-interest expense	(7)	(5)	(11)	(8)
Affordable Housing Program assessments	1	2	2	1
Net income	$ (3)	$ (5)	$ (7)	$ (10)

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 $219 million and $599 million for the three and six months ended June 30, 2017, increases of $119 million and $670 million compared to the same periods in 2016, resulting primarily from higher fair value gains on AFS securities and net unrealized gains relating to cash flow hedging activities.

Table 26 - Comprehensive Income
(dollars in millions)

	Three Months Ended June 30,			Six Months Ended June 30,		
	2017	2016	Change	2017	2016	Change
Net income	$ 844	$ 796	$ 48	$ 1,656	$ 1,630	$ 26
Other comprehensive income						
Changes in fair value of AFS securities						
Net unrealized gains (losses) on AFS securities	90	20	70	356	26	330
Net change in fair value of other-than-temporarily impaired AFS securities	100	81	19	126	7	119
Total changes in fair value of AFS securities	190	101	89	482	33	449
Changes in non-credit OTTI losses						
Net amount of AFS and HTM impairment losses reclassified to (from) non-interest income	2	1	1	5	(6)	11
Reclassification of (gains) losses of the non-credit portion on AFS securities included in net income	—	1	(1)	—	—	—
Accretion of non-credit portion on HTM securities	20	24	(4)	45	48	(3)
Total changes in non-credit OTTI losses	22	26	(4)	50	42	8
Net unrealized gains (losses) relating to hedging activities	5	(25)	30	64	(149)	213
Other	2	(2)	4	3	3	—
Total other comprehensive income (loss)	219	100	119	599	(71)	670
Comprehensive income	$ 1,063	$ 896	$ 167	$ 2,255	$ 1,559	$ 696

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, was 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 was 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.

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 effective, until earnings are affected by the variability of the cash flows of the hedged transaction and the amounts are reclassified to non-interest income. 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 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 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 its assets and liabilities.

The FHLBanks may not be able to predict future trends in member credit needs because they 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 regularly monitors current trends and anticipates future debt issuance needs to be prepared to fund its members' credit needs and its investment opportunities. 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.

Sources and Uses of Liquidity. The FHLBanks' primary sources of liquidity are proceeds from the issuance of consolidated obligations and advance repayments, 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. As a result, the FHLBanks generally have comparatively stable access to funding at relatively favorable spreads to U.S. Treasury rates. As of July 31, 2017, the FHLBanks' consolidated obligations were rated AA+/Aaa (with outlook stable) by S&P and Moody's. (See *External Credit Ratings* for additional information).

During the six months ended June 30, 2017, the FHLBanks maintained continual access to funding and adapted their debt issuance to meet the needs of their members. The FHLBanks maintained a preference for short-term funding through the issuance of consolidated discount notes and short-term consolidated bonds during the six months ended June 30, 2017. Access to short-term debt markets has been reliable because 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, which has led to advantageous funding opportunities and increased utilization of debt maturing in one year or less. However, due to the short maturity of the debt, the FHLBanks may be exposed to access to debt markets, refinancing, and investor concentration risks. (See *Combined Financial Condition - Consolidated Obligations* for more information on short-term consolidated obligations.)

Other sources of liquidity include 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 may acquire up to $4 billion 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 shall be repaid by the FHLBanks at the earliest practicable date.

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.

Each FHLBank is focused on maintaining a liquidity and funding balance between its financial assets and financial liabilities. The FHLBanks work collectively to manage the system-wide liquidity and funding management and the FHLBanks jointly monitor the combined refinancing risk. In managing and monitoring the amounts of assets that require refunding, the FHLBanks may consider contractual maturities of the financial assets, as well as certain assumptions regarding expected cash flows (i.e., estimated prepayments and scheduled amortizations). See the notes to the accompanying combined financial statements for additional information regarding contractual maturities of certain financial assets and financial liabilities.

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 calendar 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.

    - One 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. During the six months ended June 30, 2017, each of the FHLBanks was in compliance with the FHFA's regulatory contingency liquidity requirements. 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.

Capital Resources

At June 30, 2017, each of the FHLBanks was in compliance with its statutory minimum capital requirements. (See *Note 13 - Capital* to the accompanying combined financial statements for additional information regarding minimum regulatory capital requirements.) Regulatory guidance requires each FHLBank to assess, at least once a year, the adequacy of its retained earnings under various future financial and economic scenarios, including:

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

Management and the board of directors of each FHLBank review the capital structure of that FHLBank on a periodic basis to ensure the capital structure supports the risk associated with its assets and addresses applicable regulatory and supervisory matters. In addition, an individual FHLBank may 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.)

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. (See *Note 13 - Capital* - *Restricted Retained Earnings* to the accompanying combined financial statements for more information.)

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, 2016, 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-10 to F-21 of the audited combined financial statements included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016.

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, 2016. 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 69 to 77 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016. 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 June 30, 2017.

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 70 to 71 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016. 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 June 30, 2017. 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 June 30, 2017
(dollars in millions)

		Significant Inputs			Current Credit Enhancement
	Unpaid Principal Balance	Prepayment Rates	Default Rates	Loss Severities	
		Weighted-Average	Weighted-Average	Weighted-Average	Weighted-Average
Private-label Residential MBS(1)					
Prime	$ 3,203	14.4%	6.2%	25.6%	8.1%
Alt-A	8,019	11.5%	19.7%	37.3%	7.4%
Subprime	419	2.6%	40.4%	56.9%	18.5%
Total private-label residential MBS	$ 11,641	12.0%	16.7%	34.8%	8.0%
Home Equity Loan ABS(1)					
Subprime	$ 54	4.8%	7.6%	49.6%	35.9%
Total home equity loan ABS	$ 54	4.8%	7.6%	49.6%	35.9%

(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 $8 million and $13 million for the three months ended June 30, 2017. The base case scenario represents actual OTTI-related credit losses recognized in earnings for the three months ended June 30, 2017.

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 June 30, 2017. 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 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, 2016, for a description of certain legislative and regulatory developments that occurred prior to the publication of that report.

FHFA Final Rule on Minority and Women Inclusion. On July 25, 2017, the FHFA published a final rule, effective August 24, 2017, amending its Minority and Women Inclusion regulations to clarify the scope of the FHLBanks' and the Office of Finance's obligation to promote diversity and ensure inclusion. The final rule updates the existing FHFA regulations aimed at promoting diversity and the inclusion and use of minorities, women, and individuals with disabilities and the businesses they own (MWDOB) in all FHLBanks' and the Office of Finance's business and activities, including management, employment, and contracting. The final rule will:

- require the FHLBanks and the Office of Finance to develop standalone diversity and inclusion strategic plans or incorporate diversity and inclusion into their existing strategic planning processes and adopt strategies for promoting diversity and ensuring inclusion;

- encourage the FHLBanks and the Office of Finance to expand contracting opportunities for minorities, women, and individuals with disabilities through subcontracting arrangements;

- require the FHLBanks and the Office of Finance to develop policies that address reasonable accommodations for employees to observe their religious beliefs;

- require the FHLBanks and the Office of Finance to provide information in their annual reports to the FHFA about their efforts to advance diversity and inclusion through financial transactions, identification of ways in which FHLBanks and the Office of Finance might be able to improve MWDOB business with the FHLBanks and the Office of Finance by enhancing customer access by MWDOB businesses, including through each FHLBank's affordable housing and community investment programs and strategies for promoting the diversity of supervisors and managers; and

- require the FHLBanks and the Office of Finance to classify and provide additional data in their annual reports about the number of, and amounts paid under, their contracts with MWDOB.

The FHLBanks do not expect this final rule to materially affect FHLBanks' combined financial condition or combined results of operations, but anticipate that it may result in increased compliance costs and increase the amount of tracking, monitoring, and reporting that would be required of each FHLBank and the Office of Finance.

FHFA Proposed Rule on FHLBank Capital Requirements. On July 3, 2017, the FHFA published a proposed rule to adopt, with amendments, the regulations of the Federal Housing Finance Board (predecessor to the FHFA) pertaining to the capital requirements for the FHLBanks. The proposed rule would carry over most of the existing regulations without material change but would substantively revise the credit risk component of the risk-based capital requirement, as well as the limitations on extensions of unsecured credit. The main revisions would remove requirements that the FHLBanks calculate credit risk capital charges and unsecured credit limits based on ratings issued by a nationally recognized statistical rating organization, and instead require that the FHLBanks establish and use their own internal rating methodology. With respect to derivatives, the proposed rule would impose a new capital charge for cleared derivatives, which under the existing rule do not carry a capital charge, to align with the Dodd-Frank Act's clearing mandate. The proposed rule also would revise the percentages used in the regulation to calculate credit risk capital charges for advances and for non-mortgage assets. The FHFA proposes to retain, for now, the percentages used in the regulation to calculate capital charges for mortgage-related assets, and to address the methodology for residential mortgage assets at a later date. While a March 2009 regulatory directive pertaining to certain liquidity matters will continue to remain in place, the FHFA also proposes to rescind certain minimum regulatory liquidity requirements for the FHLBanks and address these liquidity requirements in a separate rulemaking.

The FHLBanks are in the process of evaluating the proposed rule. Comments on the proposed rule are due by September 1, 2017.

FHFA Final Rule on FHLBank Membership for Non-Federally-Insured Credit Unions. On June 5, 2017, the FHFA issued a final rule, effective July 5, 2017, governing FHLBank membership that would implement statutory amendments to the FHLBank Act authorizing FHLBanks to accept applications for membership from state-chartered credit unions without federal share insurance, provided that certain prerequisites have been met. The new rule generally treats these credit unions the same as other depository institutions with an additional requirement that they obtain: (1) an affirmative statement from their state regulator that they meet the requirements for federal insurance as of the date of their application for FHLBank membership; (2) a written statement from the state regulator that it cannot or will not make any determination regarding eligibility for federal insurance; or (3) if the regulator fails or refuses to respond to the credit union's request within six months, confirmation of the failure to receive a response.

The final rule is not expected to materially affect FHLBanks' combined financial condition or combined results of operations.

External Credit Ratings

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

Table 28 - FHLBanks' Long-Term Credit Ratings, Short-Term Credit Ratings, and Outlook at July 31, 2017

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

Risk Management

The fundamental business of each FHLBank is to provide a readily available, competitively-priced source of funds, in a wide range of maturities, to meet the borrowing demands of its members and housing associates. The principal sources of funds for these activities are the proceeds from the issuance of consolidated obligations and, to a lesser extent, capital and deposits from members. Lending and investing funds, and engaging in derivative transactions, can potentially expose the FHLBanks to a number of risks, including market risk and credit risk. (See *Quantitative and Qualitative Disclosures about Market Risk* for a discussion of market risk). The FHLBanks are also subject to liquidity risk, operational risk, and business risk (see *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Risk Management*, pages 99 to 100 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, for more information). Each FHLBank has established policies and procedures to evaluate, manage, and control these risks, and must file periodic compliance reports with the FHFA. The FHFA has established regulations governing the risk management practices of the FHLBanks and conducts an annual on-site examination, interim on-site visits of each FHLBank and the Office of Finance, as well as off-site analyses.

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 conservative collateral and lending policies and procedures 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 June 30, 2017, 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 June 30, 2017, 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 80 to 84 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, for information on eligible collateral and effective lending values.)

As of June 30, 2017 there were 104 individual FHLBank borrowers (103 FHLBank members and 1 non-member financial institutions) 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, outstanding 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 2.6 at June 30, 2017, which represents the total of these 104 individual FHLBank borrowers' eligible collateral divided by these borrowers' advances and other credit products outstanding. The collateralization ratio for all borrowers was 2.9 at June 30, 2017. However, individual borrower credit obligations to the FHLBanks are not cross-collateralized between borrowers.

Table 29 presents advances, other credit products (which primarily includes 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 June 30, 2017
(dollars in millions)

	Borrowers with at Least $1.0 Billion of Advances Outstanding	All Borrowers	Percentage
Advances outstanding, at par	$ 503,316	$ 706,376	71.3%
Other credit products outstanding, at par	$ 79,687	$ 131,042	60.8%
Collateral outstanding	$ 1,488,892	$ 2,463,856	60.4%

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

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

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

Table 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 June 30, 2017
(dollars in millions)

	Blanket Lien		Listing		Delivery		Total	
Collateral Type	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
Single-family mortgage loans(1)	$ 446,316	18.1%	$ 850,124	34.5%	$ 4,763	0.2%	$ 1,301,203	52.8%
Commercial real estate loans	320,365	13.0%	127,119	5.2%	29,101	1.2%	476,585	19.4%
Multifamily mortgage loans	64,612	2.6%	141,270	5.7%	10,817	0.5%	216,699	8.8%
Home equity loans and lines of credit	95,094	3.9%	98,722	4.0%	46	—%	193,862	7.9%
U.S. agency MBS and collateralized mortgage obligations	—	N/A	—	N/A	105,533	4.3%	105,533	4.3%
Other real estate loans	47,525	1.9%	6,620	0.3%	2,690	0.1%	56,835	2.3%
Community Financial Institutions loans	36,155	1.5%	1,719	0.1%	2	—%	37,876	1.6%
U.S. agency securities (excluding MBS)	—	N/A	—	N/A	19,272	0.8%	19,272	0.8%
Commercial MBS	—	N/A	—	N/A	18,926	0.8%	18,926	0.8%
Private-label MBS and collateralized mortgage obligations	—	N/A	—	N/A	4,401	0.2%	4,401	0.2%
Other	613	—%	3,663	0.1%	28,388	1.0%	32,664	1.1%
Total collateral	$ 1,010,680	41.0%	$ 1,229,237	49.9%	$ 223,939	9.1%	$ 2,463,856	100.0%

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(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, 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 primarily to provide additional 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 page 85 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, for additional information regarding the regulatory restrictions on investments.)

Investment Quality and Ratings. The FHLBanks 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 June 30, 2017 and December 31, 2016, 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)

	June 30, 2017(1)(2)						
Carrying Value	**Triple-A**	**Double-A**	**Single-A**	**Triple-B**	**Below Triple-B**	**Unrated**	**Total**
Interest-bearing deposits	$ —	$ 60	$ 3,016	$ 46	$ —	$ —	$ 3,122
Securities purchased under agreements to resell	2,800	31,268	2,750	7,249	500	3,850	48,417
Federal funds sold	—	25,015	46,389	3,078	—	140	74,622
Total investment securities by major security type							
Non-mortgage backed securities							
U.S. Treasury obligations	—	613	—	—	—	—	613
Certificates of deposit	—	2,050	700	—	—	—	2,750
Other U.S. obligations	—	5,792	—	—	—	—	5,792
GSE and Tennessee Valley Authority obligations	—	28,020	—	—	—	—	28,020
State or local housing agency obligations	1,527	1,957	344	—	—	—	3,828
Federal Family Education Loan Program ABS	47	4,365	—	—	—	—	4,412
Other	1,119	101	—	—	—	68	1,288
Total non-mortgage-backed securities	2,693	42,898	1,044	—	—	68	46,703
Mortgage-backed securities							
Other U.S. obligations single-family MBS	191	13,397	—	—	—	—	13,588
Other U.S. obligations multifamily MBS	—	496	—	—	—	—	496
GSE single-family MBS	—	46,789	8	—	6	—	46,803
GSE multifamily MBS	511	68,168	—	—	—	—	68,679
Private-label residential MBS	5	89	105	831	8,072	798	9,900
Manufactured housing loan ABS	—	—	62	—	—	—	62
Home equity loan ABS	1	4	77	21	53	—	156
Total mortgage-backed securities	708	128,943	252	852	8,131	798	139,684
Total investment securities	3,401	171,841	1,296	852	8,131	866	186,387
Total investments	$ 6,201	$ 228,184	$ 53,451	$ 11,225	$ 8,631	$ 4,856	$ 312,548

Carrying Value	December 31, 2016(2)(3) Triple-A	Double-A	Single-A	Triple-B	Below Triple-B	Unrated	Total
Interest-bearing deposits	$ —	$ 1	$ 2,832	$ 45	$ —	$ —	$ 2,878
Securities purchased under agreements to resell	9,725	31,697	2,500	6,449	—	2,400	52,771
Federal funds sold	—	12,336	33,106	3,061	—	130	48,633
Total investment securities by major security type							
Non-mortgage backed securities							
U.S. Treasury obligations	—	1,606	—	—	—	—	1,606
Certificates of deposit	—	1,900	1,150	—	—	—	3,050
Other U.S. obligations	—	6,249	—	—	—	—	6,249
GSE and Tennessee Valley Authority obligations	—	28,406	—	—	—	—	28,406
State or local housing agency obligations	1,521	1,956	371	—	—	—	3,848
Federal family education loan program ABS	54	4,518	—	—	—	—	4,572
Other	1,192	101	—	—	—	61	1,354
Total non-mortgage-backed securities	2,767	44,736	1,521	—	—	61	49,085
Mortgage-backed securities							
Other U.S. obligations single-family MBS	210	13,880	—	—	—	—	14,090
Other U.S. obligations multifamily MBS	—	568	—	—	—	—	568
GSE single-family MBS	—	50,802	10	—	7	—	50,819
GSE multifamily MBS	463	61,519	—	—	—	—	61,982
Private-label residential MBS	7	76	116	988	9,729	35	10,951
Manufactured housing loan ABS	—	—	69	—	—	—	69
Home equity loan ABS	1	4	84	24	58	—	171
Total mortgage-backed securities	681	126,849	279	1,012	9,794	35	138,650
Total investment securities	3,448	171,585	1,800	1,012	9,794	96	187,735
Total investments	$ 13,173	$ 215,619	$ 40,238	$ 10,567	$ 9,794	$ 2,626	$ 292,017

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after June 30, 2017.
(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, 2016.

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) insurance wrap. 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 June 30, 2017. No FHLBank has purchased private-label mortgage-backed securities since 2008.

Table 32 - Credit Ratings of Private-Label Mortgage-Backed Securities at June 30, 2017
(dollars in millions)

	Total	Prime(1)	Alt-A(1)(2)	Subprime(1)
Unpaid Principal Balance (UPB) by credit rating(3)				
Triple-A	$ 6	$ —	$ 5	$ 1
Double-A	95	50	30	15
Single-A	245	48	54	143
Triple-B	859	682	145	32
Double-B	1,006	709	264	33
Single-B	946	326	597	23
Triple-C	4,176	1,291	2,812	73
Double-C	991	107	557	327
Single-C	116	14	87	15
Single-D	2,505	929	1,550	26
Unrated	1,039	482	556	1
Total	$ 11,984	$ 4,638	$ 6,657	$ 689
Amortized cost	$ 10,010	$ 4,089	$ 5,444	$ 477
Gross unrealized losses(4)	(276)	(145)	(88)	(43)
Fair value	10,728	4,338	5,810	580
Credit losses(5)				
Total OTTI	$ (8)	$ (1)	$ (7)	$ —
AOCI(6)	(5)	(1)	(4)	—
Credit losses	$ (13)	$ (2)	$ (11)	$ —
Weighted-average percentage				
Fair value to UPB	89.5%	93.5%	87.3%	84.2%
Original credit support(7)	19.1%	10.6%	23.1%	38.2%
Credit support(8)	8.6%	6.6%	8.3%	25.6%
Collateral delinquency(9)	13.9%	10.0%	15.9%	20.6%

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(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 $1,545 million in Alt-A option adjustable-rate mortgages, of which $454 million are in a gross unrealized loss position based on their unpaid principal balance at June 30, 2017.
(3) Represents the lowest 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.
(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 $4,000 million and $3,519 million at June 30, 2017.
(5) The credit losses presented are for the six months ended June 30, 2017.
(6) Represents the net amount of other-than-temporary impairment losses reclassified to/(from) AOCI.
(7) 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.
(8) Weighted-average credit support is based on the credit support as of June 30, 2017, and is determined based on the unpaid principal balance of the individual securities in the category and their respective credit support as of June 30, 2017.
(9) 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 five monoline bond insurers that insure the affected FHLBanks' investment securities. Of the five 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, Syncora Guarantee Inc., 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 June 30, 2021. In addition, Ambac Assurance Corp. reimbursements are limited to 45% of new claims during the burnout period. The FHLBanks monitor the financial condition of Ambac Assurance Corp. on an ongoing basis, and, as facts and circumstances change, the burnout period could significantly change.

As of June 30, 2017, total monoline bond insurance coverage was $250 million, of which $163 million represents the FHLBanks' private-label MBS covered by the monoline bond insurance that the FHLBanks were relying on at June 30, 2017, for modeling cash flows. Of the $163 million, 86.5% represents subprime loans and 13.5% 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, 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 June 30, 2017, the FHLBanks had aggregate unsecured credit exposure from investments of $1 billion or more to each of 24 private counterparties. The aggregate unsecured credit exposure to these counterparties represented 85.1% 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)	June 30, 2017	December 31, 2016
Interest-bearing deposits	$ 3,122	$ 2,877
Federal funds sold	74,622	48,633
Certificates of deposit	2,750	3,050
Total	$ 80,494	$ 54,560

(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 June 30, 2017, 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 June 30, 2017, an FHLBank held full faith and credit U.S. guaranteed securities with foreign issuers totaling $465 million. Other than these investments, the FHLBanks are in compliance with the FHFA regulation as of June 30, 2017.

As of June 30, 2017, 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 June 30, 2017, 85.3% of the FHLBanks' unsecured investments in federal funds sold and 83.6% of the FHLBanks' unsecured investment 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 June 30, 2017(1)
(dollars in millions)

Carrying Value(2)	Investment Grade Double-A	Investment Grade Single-A	Investment Grade Triple-B	Unrated	Total
Domestic	$ 610	$ 10,387	$ 3,124	$ 140	$ 14,261
U.S. subsidiaries of foreign commercial banks	—	300	—	—	300
Total domestic and U.S. subsidiaries of foreign commercial banks	610	10,687	3,124	140	14,561
U.S. branches and agency offices of foreign commercial banks					
Sweden	15,449	3,005	—	—	18,454
Canada	3,263	10,676	—	—	13,939
Australia	7,403	—	—	—	7,403
France	—	7,141	—	—	7,141
Netherlands	—	6,836	—	—	6,836
Norway	—	5,125	—	—	5,125
Japan	—	4,700	—	—	4,700
Germany	400	1,935	—	—	2,335
Total U.S. branches and agency offices of foreign commercial banks	26,515	39,418	—	—	65,933
Total unsecured investment credit exposure	$ 27,125	$ 50,105	$ 3,124	$ 140	$ 80,494

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after June 30, 2017. 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 June 30, 2017, 91.5% 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 June 30, 2017
(dollars in millions)

Carrying Value(1)	Overnight	Due 2 days through 30 days	Due 31 days through 90 days	Total
Domestic	$ 13,811	$ 350	$ 100	$ 14,261
U.S. subsidiaries of foreign commercial banks	300	—	—	300
Total domestic and U.S. subsidiaries of foreign commercial banks	14,111	350	100	14,561
U.S. branches and agency offices of foreign commercial banks				
Sweden	17,904	250	300	18,454
Canada	11,829	660	1,450	13,939
Australia	5,428	1,340	635	7,403
France	6,501	100	540	7,141
Netherlands	6,836	—	—	6,836
Norway	5,125	—	—	5,125
Japan	4,100	400	200	4,700
Germany	1,835	500	—	2,335
Total U.S. branches and agency offices of foreign commercial banks	59,558	3,250	3,125	65,933
Total unsecured investment credit exposure	$ 73,669	$ 3,600	$ 3,225	$ 80,494

(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.

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

The FHFA published the final AMA rule, which became effective January 18, 2017, which governs an FHLBank's authority to purchase and hold certain types of mortgage loans acquired from its PFIs. The final rule, among other things, enhanced the credit risk sharing requirement by allowing an FHLBank to utilize its own model to determine the credit enhancement for AMA loan assets and pool loans in lieu of a nationally recognized statistical rating organization ratings model. (See *Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations - Legislative and Regulatory Developments*, pages 77 to 78 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, for additional information.)

MPF Loans - Loss Allocation. Credit losses on conventional MPF loans held for portfolio not absorbed by the borrower's equity in the mortgaged property, property insurance, or primary mortgage insurance are allocated for each master commitment between an MPF FHLBank and the PFI. For MPF loans, credit losses in a master commitment are first absorbed by an FHLBank's first loss account (FLA), but if applicable to the MPF product, an FHLBank will withhold a PFI's scheduled performance credit enhancement fee in order to reimburse itself for any losses allocated to the FLA. If the FLA is exhausted, the credit losses are then absorbed by the PFI's credit enhancement amount that is calculated by utilizing a third party's credit model.

MPF Loans - Setting Credit Enhancements. Pursuant to the revised AMA regulation, each MPF FHLBank has assessed, and may have adjusted its methodology, to set the PFI's credit enhancement amount. The PFI's credit enhancement amount is determined by each FHLBank with respect to an asset or a pool, based on documented analysis that the FHLBank has a high degree of confidence that it will not bear material losses beyond the losses absorbed by the FLA, even under reasonably likely adverse changes to expected economic conditions.

The MPF products were designed to allow for periodic resets of the credit enhancement amount for each master commitment, and of the First Loss Account for each master commitment for certain products, because the amount of credit enhancement necessary to maintain an FHLBank's risk of credit losses within an FHLBank's risk tolerance for any master commitment is usually reduced over time. Under the MPF Program, the PFI's credit enhancement amount may take the form of a contingent, performance-based credit enhancement fee as well as the credit enhancement amount (which is a direct liability to pay credit losses or the requirement for the PFI to pay for an SMI policy insuring a portion of the 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*, pages 91 to 97 of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, 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, including initial and certain variation margin. 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 trigger point. 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 June 30, 2017.

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 June 30, 2017.

Table 36 presents the derivative positions with non-member counterparties and member institutions to which the FHLBanks had credit exposure at June 30, 2017.

Table 36 - Derivative Counterparty Credit Exposure at June 30, 2017
(dollars in millions)

Credit Rating(1)	Notional Amount	Net Derivatives Fair Value Before Collateral and Variation Margin for Daily Settled Contracts	Cash Collateral Pledged To (From) Counterparties and Variation Margin for Daily Settled Contracts(2)	Non-cash Collateral Pledged To (From) Counterparties	Net Credit Exposure to Counterparties
Non-member counterparties					
Asset positions with credit exposure					
Uncleared derivatives					
Double-A	$ 5,657	$ 10	$ (4)	$ —	$ 6
Single-A	15,830	211	(80)	(105)	26
Triple-B	1,929	4	(3)	—	1
Unrated	14	—	—	—	—
Cleared derivatives(3)	134,448	497	(189)	—	308
Liability positions with credit exposure					
Uncleared derivatives					
Double-A	4,494	(35)	38	—	3
Single-A	27,262	(182)	198	1	17
Triple-B	13,713	(94)	91	7	4
Cleared derivatives(3)	186,869	(1,163)	2,091	644	1,572
Total derivative positions with credit exposure to non-member counterparties	390,216	(752)	2,142	547	1,937
Member institutions(4)	734	2	—	—	2
Total	$ 390,950	$ (750)	$ 2,142	$ 547	$ 1,939

(1) This chart does not reflect any changes in rating, outlook, or watch status occurring after June 30, 2017. 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) Cleared derivatives include variation margin for daily settled contracts of $630 million at June 30, 2017.
(3) Represents derivative transactions cleared with LCH.Clearnet LLC and CME Clearing, the FHLBanks' clearinghouses, which are not rated. LCH.Clearnet LLC's parent company, LCH Group Holdings Ltd., was rated A+ by S&P, however, on May 31, 2017, S&P lowered the rating to A and withdrew the rating at LCH Group Holdings Ltd.'s request. LCH Group Holdings Ltd.'s ultimate parent, London Stock Exchange Group Plc is rated Baa1 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.
(4) Member institutions include mortgage delivery commitments and derivatives with members where an FHLBank is acting as an intermediary. Collateral held with respect to derivatives with member institutions where an FHLBank is acting as an intermediary represents the amount of eligible collateral physically held by or on behalf of the FHLBank or collateral assigned to the FHLBank, as evidenced by a written security agreement, and held by the member institution for the benefit of that FHLBank.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

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

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

Interest-Rate Risk

Interest-rate risk is the risk that relative and absolute changes in interest rates may adversely affect an institution's financial condition. The goal of an interest-rate risk management strategy is not necessarily to eliminate interest-rate risk, but to manage it by setting, and operating within, an appropriate framework and limits. The FHLBanks generally manage interest-rate risk by acquiring and maintaining a portfolio of assets and liabilities and entering into related derivative transactions to limit the expected mismatches in duration and market value of equity sensitivity. The FHLBanks measure and monitor interest rate-risk with commonly used methods, which include the calculations of market value of equity, duration of equity, and duration gap. (See *Quantitative and Qualitative Disclosures about Market Risk*, pages 101 to 106, of the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016, 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 2017 Second 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 2017 Second 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 2017 Second 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 2017 Second Quarter SEC Form 10-Q, market value of capital stock (MVCS) sensitivity and projected income sensitivity as key market risk measures and MVCS as its key capital adequacy measure.

(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 2017 Second 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)

	June 30, 2017			December 31, 2016		
FHLBank	**Down**	**Base**	**Up**	**Down**	**Base**	**Up**
Boston	(2.6)	0.7	3.5	(3.4)	1.7	3.9
New York	0.6	(0.2)	0.5	1.3	0.1	0.8
Pittsburgh	0.3	0.1	0.4	4.5	0.2	0.8
Atlanta	(0.5)	0.5	3.1	(0.3)	0.8	3.6
Cincinnati	(4.3)	0.0	1.2	(3.7)	1.8	2.0
Indianapolis	(5.2)	1.7	3.2	(8.1)	1.7	3.4
Chicago	2.4	1.0	1.7	2.3	1.3	1.8
Des Moines	0.4	1.0	2.4	0.8	1.1	2.6
Dallas	1.8	0.5	1.1	0.9	(0.9)	0.9
Topeka	2.3	(0.4)	2.3	3.0	(1.0)	2.6
San Francisco	2.9	1.9	2.2	4.2	1.9	2.7

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	June 30, 2017	December 31, 2016
Boston	0.5	1.2
New York	(0.4)	(0.2)
Pittsburgh	(0.2)	(0.1)
Atlanta	0.2	0.4
Cincinnati	0.0	0.0
Indianapolis	0.4	0.3
Chicago	0.8	1.0
Des Moines	0.3	0.4
Dallas	0.2	(0.7)
Topeka	(0.3)	(0.6)
San Francisco	1.4	1.2

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, 2016, based on the criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management of each FHLBank, other than the FHLBank of Des Moines, concluded, as of December 31, 2016, that its individual internal control over financial reporting is effective based on the criteria established in *Internal Control-Integrated Framework (2013).* Additionally, the independent registered public accounting firm of each FHLBank, other than the FHLBank of Des Moines, opined that the respective individual FHLBank maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016. (See *Part II. Item 8 - Financial Statements and Supplementary Data* or *Item 9A - Controls and Procedures* of each FHLBank's 2016 SEC Form 10-K for its *Management's Report on Internal Control over Financial Reporting*.)

Each FHLBank, other than the FHLBank of Des Moines, indicated that there were no changes to its internal control over financial reporting during the quarter ended June 30, 2017, that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. Additionally, management of each of these FHLBanks concluded that its disclosure controls and procedures were effective at a reasonable assurance level as of the end of the period covered by its respective 2017 Second Quarter SEC Form 10-Q. (See *Part I. Item 4 - Controls and Procedures* of each FHLBank's 2017 Second Quarter SEC Form 10-Q.)

FHLBank of Des Moines

As of December 31, 2016, the FHLBank of Des Moines' management identified a material weakness in its internal control over financial reporting process, related to ineffective controls over spreadsheets used in its financial close and reporting process. (See *Part II. Item 8 - Financial Statements and Supplementary Data* and *Item 9A - Controls and Procedures of the FHLBank of Des Moines' 2016 SEC Form 10-K* for additional information.)

During the quarter ended June 30, 2017, the management of the FHLBank of Des Moines continued to take steps to remediate the material weakness identified as of December 31, 2016, including streamlining certain spreadsheets, training its personnel, performing a risk assessment of key controls and mapping key controls to spreadsheets, and reducing reliance on spreadsheets. Other than these remediation steps, there were no changes to its internal control over financial reporting during the quarter ended June 30, 2017, that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. Additionally, the management of the FHLBank of Des Moines concluded, based on its previous identification of the material weakness in its internal control over financial reporting, that its disclosure controls and procedures were not effective at a reasonable assurance level as of the end of the period covered by its 2017 Second Quarter SEC Form 10-Q. (See *Part I. Item 4 - Controls and Procedures* of the FHLBank of Des Moines' 2017 Second 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 www.fhlb-of.com. This web site address is provided as a matter of convenience only, and its contents are not made part of this report and are not intended to be 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 are not a party to, nor are they subject to, any pending legal proceedings, except the following identified 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 or that are otherwise material to the FHLBanks. (See each FHLBank's 2017 Second 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 June 30, 2017, 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. As a result of its merger with the FHLBank of Seattle, the FHLBank of Des Moines became involved in a number of legal proceedings initiated by the FHLBank of Seattle against various entities relating to its purchases and subsequent impairment of certain private-label MBS. Although the FHLBank of Seattle sold all private-label MBS during the three months ended March 31, 2015, and all of the lawsuits have been either settled or dismissed as of June 30, 2017, the FHLBank of Des Moines has appealed certain claims dismissed by the court against three defendants and continues to be involved in these legal proceedings.

Legal Proceedings Relating to the Lehman Bankruptcy

See *Note 16 - Commitments and Contingencies* - *Lehman Bankruptcy* to the accompanying combined financial statements for information on legal proceedings and settlement relating to bankruptcy proceedings involving Lehman Brothers Holdings, Inc.

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, 2016. (See each FHLBank's 2017 Second Quarter SEC Form 10-Q for any updates to the risk factors included in such FHLBank's 2016 SEC Form 10-K under *Part I. Item 1A - Risk Factors*.)

OTHER INFORMATION

There were no material changes to the disclosure relating to Rule 2-01(c)(1)(ii)(A) of SEC Regulation S-X (the Loan Rule) included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2016. (See each affected FHLBank's 2017 Second Quarter SEC Form 10-Q for any updates to the Loan Rule disclosure included in such FHLBank's 2016 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 June 30, 2017, the FHLBanks had 384 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)

	June 30, 2017		December 31, 2016	
	Amount	Percentage of Regulatory Capital Stock	Amount	Percentage of Regulatory Capital Stock
Commercial banks	$ 24,136	62.9%	$ 23,650	62.3%
Savings institutions	4,768	12.4%	4,961	13.1%
Insurance companies	4,246	11.1%	4,009	10.6%
Credit unions	3,724	9.7%	3,605	9.5%
Community development financial institutions	9	—	9	—
Total GAAP capital stock	36,883	96.1%	36,234	95.5%
Mandatorily redeemable capital stock	1,484	3.9%	1,704	4.5%
Total combined regulatory capital stock	$ 38,367	100.0%	$ 37,938	100.0%

Table 41 - Membership by Type of Member

	June 30, 2017		December 31, 2016	
	Number	Percentage of Total Members	Number	Percentage of Total Members
Commercial banks	4,435	63.1%	4,520	63.5%
Credit unions	1,407	20.0%	1,389	19.5%
Savings institutions	755	10.7%	778	10.9%
Insurance companies	383	5.5%	393	5.5%
Community development financial institutions	47	0.7%	45	0.6%
Total	7,027	100.0%	7,125	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 June 30, 2017
(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	$ 2,545	6.6%	$ 28
JPMorgan Chase & Co.	Pittsburgh, Cincinnati, Chicago, Des Moines, San Francisco	2,529	6.6%	659
Citigroup Inc.	New York, Dallas, San Francisco	1,855	4.8%	—
Bank of America Corporation	Boston, Atlanta, Des Moines, San Francisco	996	2.6%	7
The PNC Financial Services Group, Inc.	Pittsburgh, Atlanta, Cincinnati	958	2.5%	22
MetLife, Inc.	Boston, New York, Pittsburgh, Des Moines	868	2.3%	31
New York Community Bancorp, Inc.	New York	589	1.5%	—
U.S. Bancorp	Cincinnati, Des Moines, Topeka	549	1.4%	2
Ally Financial Inc.	Pittsburgh	454	1.2%	—
Navy Federal Credit Union	Atlanta	447	1.2%	—
		$ 11,790	30.7%	$ 749

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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 June 30, 2017, each holding company had subsidiaries with regulatory capital stock holdings in these FHLBank districts.
(3) Includes FHLBank capital stock that is considered to be mandatorily redeemable, which is classified as a liability under GAAP.

SUPPLEMENTAL INFORMATION

Individual Federal Home Loan Bank Selected Financial Data and Financial Ratios

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

Individual FHLBank Selected Financial Data and Financial Ratios

(dollars in millions)	Boston	New York	Pittsburgh
Selected Statement of Condition Data(1)			
At June 30, 2017			
Assets			
Investments(2)	$ 18,142	$ 33,647	$ 18,944
Advances	38,428	117,934	74,080
Mortgage loans held for portfolio	3,805	2,849	3,544
Allowance for credit losses on mortgage loans	(1)	(1)	(6)
Total assets	60,754	155,529	100,830
Consolidated obligations(3)			
Discount notes	27,866	57,331	31,929
Bonds	28,518	87,559	62,911
Total consolidated obligations	56,384	144,890	94,840
Mandatorily redeemable capital stock	37	21	5
Total capital			
Capital stock(4)	2,408	6,757	3,733
Retained earnings	1,246	1,449	1,078
Accumulated other comprehensive income (loss)	(320)	(86)	123
Total capital	3,334	8,120	4,934
Asset composition (as a percentage of the individual FHLBank's total assets)			
Investments(2)	29.9%	21.6%	18.8%
Advances	63.3%	75.8%	73.5%
Mortgage loans held for portfolio, net	6.3%	1.8%	3.5%
Total retained earnings as a percentage of FHLBank's total assets	2.1%	0.9%	1.1%
FHLBank's total assets as a percentage of FHLBank System's total assets	5.6%	14.4%	9.3%
At June 30, 2016			
Assets			
Investments(2)	$ 19,676	$ 29,988	$ 14,529
Advances	38,242	95,273	66,336
Mortgage loans held for portfolio	3,629	2,632	3,160
Allowance for credit losses on mortgage loans	(1)	(1)	(6)
Total assets	62,160	128,726	86,906
Consolidated obligations(3)			
Discount notes	30,484	49,072	20,814
Bonds	27,139	70,900	60,769
Total consolidated obligations	57,623	119,972	81,583
Mandatorily redeemable capital stock	35	30	6
Total capital			
Capital stock(4)	2,354	5,666	3,232
Additional capital from merger(5)	—	—	—
Retained earnings	1,165	1,322	925
Accumulated other comprehensive income (loss)	(358)	(214)	133
Total capital	3,161	6,774	4,290
Asset composition (as a percentage of the individual FHLBank's total assets)			
Investments(2)	31.7%	23.3%	16.7%
Advances	61.5%	74.0%	76.3%
Mortgage loans held for portfolio, net	5.8%	2.0%	3.6%
Total retained earnings as a percentage of individual FHLBank's total assets	1.9%	1.0%	1.1%
FHLBank's total assets as a percentage of FHLBank System's total assets	6.0%	12.5%	8.4%

(1) The sum or recalculation of individual FHLBank amounts may not agree or may not be recalculated from the Combined Statement of Condition amounts due to combining adjustments.

(2) Investments consist of interest-bearing deposits, deposits with other FHLBanks, securities purchased under agreements to resell, federal funds sold, trading securities, available-for-sale securities, and held-to-maturity securities.

(3) See *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.)

(5) Additional capital from merger resulted from the merger effective May 31, 2015, between the FHLBank of Des Moines and the FHLBank of Seattle, and primarily represents the amount of the FHLBank of Seattle's closing retained earnings balance as of the merger date, adjusted for fair value and other purchase accounting adjustments, and identified intangible assets, and is net of dividends paid by the FHLBank of Des Moines subsequent to the merger date. The balance in additional capital from merger was depleted following the first quarter dividend payment in May 2017.

Atlanta	Cincinnati	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
$ 39,752	$ 27,934	$ 18,141	$ 29,461	$ 37,763	$ 28,122	$ 15,756	$ 45,035
91,590	71,088	32,253	46,844	118,878	34,132	26,443	55,179
487	9,448	9,895	4,968	6,955	379	6,841	1,383
(1)	(1)	(1)	(3)	(2)	—	(2)	—
133,677	109,053	60,712	81,779	164,988	62,862	49,741	101,923
51,355	49,360	21,036	37,944	66,558	28,015	23,956	33,335
73,822	53,359	35,282	37,878	89,171	30,020	22,882	60,966
125,177	102,719	56,318	75,822	155,729	58,035	46,838	94,301
2	36	167	303	480	23	6	404
4,680	4,220	1,702	1,526	5,623	2,115	1,434	2,687
1,935	890	925	3,153	1,684	890	791	3,189
113	(12)	97	67	89	133	13	227
6,728	5,098	2,724	4,746	7,396	3,138	2,238	6,103
29.7%	25.6%	29.9%	36.0%	22.9%	44.7%	31.7%	44.2%
68.5%	65.2%	53.1%	57.3%	72.1%	54.3%	53.2%	54.1%
0.4%	8.7%	16.3%	6.1%	4.2%	0.6%	13.7%	1.4%
1.4%	0.8%	1.5%	3.9%	1.0%	1.4%	1.6%	3.1%
12.4%	10.1%	5.6%	7.6%	15.3%	5.8%	4.6%	9.4%
$ 36,842	$ 22,850	$ 16,040	$ 28,964	$ 44,143	$ 22,982	$ 13,444	$ 36,578
106,926	74,563	26,465	46,424	116,294	31,123	26,183	61,963
520	8,497	8,773	4,670	6,641	67	6,474	632
(2)	(1)	(1)	(3)	(1)	—	(1)	—
146,093	106,128	52,001	80,662	167,860	54,438	46,491	99,430
68,585	48,894	15,920	45,876	92,521	30,047	26,888	41,930
68,560	50,458	32,467	29,091	66,599	20,748	16,754	50,924
137,145	99,352	48,387	74,967	159,120	50,795	43,642	92,854
9	96	178	302	698	3	4	486
5,240	4,227	1,401	1,774	5,241	1,811	1,347	2,520
—	—	—	—	128	—	—	—
1,839	768	853	2,884	1,220	784	685	2,828
93	(12)	15	(151)	(85)	(124)	(15)	14
7,172	4,983	2,269	4,507	6,504	2,471	2,017	5,362
25.2%	21.5%	30.8%	35.9%	26.3%	42.2%	28.9%	36.8%
73.2%	70.3%	50.9%	57.6%	69.3%	57.2%	56.3%	62.3%
0.4%	8.0%	16.9%	5.8%	4.0%	0.1%	13.9%	0.6%
1.3%	0.7%	1.6%	3.6%	0.7%	1.4%	1.5%	2.8%
14.2%	10.3%	5.0%	7.8%	16.3%	5.3%	4.5%	9.6%

Individual FHLBank Selected Financial Data and Financial Ratios (continued)

(dollars in millions)	Boston	New York	Pittsburgh
Selected Other Data			
June 30, 2017			
Advance concentrations - top five borrowers	32%	60%	75%
Capital stock concentrations - top five stockholders	26%	55%	68%
Regulatory capital-to-assets ratio(6)	6.1%	5.3%	4.8%
Cash and stock dividends			
Quarter-to-date June 30, 2017	$ 24	$ 77	$ 41
Quarter-to-date June 30, 2016	$ 21	$ 62	$ 40
Year-to-date June 30, 2017	$ 48	$ 164	$ 83
Year-to-date June 30, 2016	$ 41	$ 123	$ 80
Weighted average dividend rate			
Quarter-to-date June 30, 2017	4.08%	5.50%	4.72%
Quarter-to-date June 30, 2016	3.63%	4.75%	4.71%
Year-to-date June 30, 2017	4.01%	5.25%	4.71%
Year-to-date June 30, 2016	3.53%	4.63%	4.75%
Return on average equity(7)			
Quarter-to-date June 30, 2017	4.74%	6.99%	7.49%
Quarter-to-date June 30, 2016	6.09%	5.56%	6.35%
Year-to-date June 30, 2017	4.65%	5.38%	7.50%
Year-to-date June 30, 2016	5.00%	5.33%	5.77%
Return on average assets			
Quarter-to-date June 30, 2017	0.26%	0.36%	0.37%
Quarter-to-date June 30, 2016	0.32%	0.30%	0.30%
Year-to-date June 30, 2017	0.26%	0.28%	0.36%
Year-to-date June 30, 2016	0.26%	0.28%	0.27%
Net interest margin(8)			
Quarter-to-date June 30, 2017	0.43%	0.49%	0.47%
Quarter-to-date June 30, 2016	0.37%	0.42%	0.43%
Year-to-date June 30, 2017	0.43%	0.49%	0.46%
Year-to-date June 30, 2016	0.38%	0.42%	0.39%
Net interest spread			
Quarter-to-date June 30, 2017	0.36%	0.44%	0.42%
Quarter-to-date June 30, 2016	0.33%	0.37%	0.40%
Year-to-date June 30, 2017	0.36%	0.44%	0.42%
Year-to-date June 30, 2016	0.33%	0.38%	0.36%

(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.)

(7) Return on average equity is net income expressed as a percentage of average total capital.

(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
52 %	67%	45%	60%	65%	29%	52%	66%
44 %	56%	37%	48%	51%	21%	47%	36%
5.0 %	4.7%	4.6%	6.1%	4.7%	4.8%	4.5%	6.2%
$ 61	$ 50	$ 15	$ 9	$ 45	$ 7	$ 23	$ 41
$ 59	$ 44	$ 14	$ 10	$ 35	$ 4	$ 20	$ 49
$ 118	$ 96	$ 31	$ 19	$ 88	$ 13	$ 44	$ 95
$ 111	$ 87	$ 31	$ 19	$ 66	$ 7	$ 39	$ 94
4.77 %	4.75%	4.25%	2.76%	3.10%	1.46%	5.74%	7.00%
4.87 %	4.00%	4.25%	2.11%	2.94%	1.02%	5.30%	8.90%
4.79 %	4.62%	4.25%	2.53%	3.08%	1.35%	5.74%	8.04%
4.63 %	4.00%	4.25%	2.02%	2.88%	0.98%	5.31%	8.46%
4.99 %	6.94%	5.77%	6.99%	7.13%	5.74%	7.64%	5.56%
3.55 %	4.93%	4.15%	9.38%	15.34%	3.46%	5.82%	4.98%
4.64 %	6.10%	5.49%	6.73%	7.32%	5.30%	8.58%	8.03%
3.28 %	4.71%	4.40%	7.58%	14.15%	2.54%	6.78%	11.90%
0.25 %	0.35%	0.25%	0.39%	0.31%	0.30%	0.35%	0.33%
0.17 %	0.24%	0.18%	0.53%	0.59%	0.17%	0.26%	0.28%
0.23 %	0.30%	0.24%	0.38%	0.31%	0.28%	0.39%	0.48%
0.16 %	0.22%	0.20%	0.46%	0.55%	0.12%	0.30%	0.67%
0.34 %	0.42%	0.44%	0.58%	0.41%	0.42%	0.50%	0.59%
0.24 %	0.32%	0.36%	0.57%	0.24%	0.30%	0.53%	0.51%
(0.13)%	0.42%	0.44%	0.57%	0.37%	0.40%	0.52%	0.58%
0.26 %	0.32%	0.38%	0.61%	0.26%	0.31%	0.54%	0.55%
0.30 %	0.36%	0.38%	0.51%	0.37%	0.37%	0.45%	0.53%
0.21 %	0.27%	0.32%	0.50%	0.21%	0.26%	0.49%	0.47%
(0.17)%	0.36%	0.38%	0.50%	0.33%	0.35%	0.47%	0.53%
0.23 %	0.28%	0.33%	0.54%	0.23%	0.27%	0.50%	0.51%

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