

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-Q

QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended September 30, 2018

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____.

Commission File No. 000-51399

FEDERAL HOME LOAN BANK OF CINCINNATI

(Exact name of registrant as specified in its charter)

Federally chartered corporation

(State or other jurisdiction of incorporation or organization)

600 Atrium Two, P.O. Box 598,

Cincinnati, Ohio

(Address of principal executive offices)

31-600228

(I.R.S. Employer Identification No.)

45201-0598

(Zip Code)

(513) 852-7500

(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer (Do not check if a smaller reporting company)

Smaller reporting company

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of October 31, 2018, the registrant had 43,947,297 shares of capital stock outstanding, which included stock classified as mandatorily redeemable. The capital stock of the registrant is not listed on any securities exchange or quoted on any automated quotation system, only may be owned by members and former members and is transferable only at its par value of \$100 per share.

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PART I – FINANCIAL INFORMATION

Item 1. Financial Statements.

FEDERAL HOME LOAN BANK OF CINCINNATI STATEMENTS OF CONDITION (Unaudited)

(In thousands, except par value)

	September 30, 2018	December 31, 2017
ASSETS		
Cash and due from banks	\$ 12,608	\$ 26,550
Interest-bearing deposits	158	140
Securities purchased under agreements to resell	4,491,429	7,701,929
Federal funds sold	8,910,000	3,650,000
Investment securities:		
Trading securities	83,404	781
Available-for-sale securities	2,074,028	899,876
Held-to-maturity securities (includes \$0 and \$0 pledged as collateral at September 30, 2018 and December 31, 2017, respectively, that may be replugged) ^(a)	16,021,037	14,804,970
Total investment securities	18,178,469	15,705,627
Advances (includes \$9,936 and \$15,013 at fair value under fair value option at September 30, 2018 and December 31, 2017, respectively)	57,770,483	69,918,224
Mortgage loans held for portfolio:		
Mortgage loans held for portfolio	10,182,085	9,682,130
Less: allowance for credit losses on mortgage loans	927	1,190
Mortgage loans held for portfolio, net	10,181,158	9,680,940
Accrued interest receivable	171,966	128,561
Premises, software, and equipment, net	8,165	8,896
Derivative assets	65,534	60,695
Other assets	5,675	13,652
TOTAL ASSETS	\$ 99,795,645	\$ 106,895,214
LIABILITIES		
Deposits	\$ 1,774,142	\$ 650,531
Consolidated Obligations:		
Discount Notes	45,312,843	46,210,458
Bonds (includes \$6,497,201 and \$5,577,315 at fair value under fair value option at September 30, 2018 and December 31, 2017, respectively)	46,913,185	54,163,061
Total Consolidated Obligations	92,226,028	100,373,519
Mandatorily redeemable capital stock	22,374	30,031
Accrued interest payable	142,308	128,652
Affordable Housing Program payable	113,448	109,877
Derivative liabilities	2,321	2,893
Other liabilities	280,385	435,198
Total liabilities	94,561,006	101,730,701
Commitments and contingencies		
CAPITAL		
Capital stock Class B putable (\$100 par value); issued and outstanding shares: 42,419 shares at September 30, 2018 and 42,411 shares at December 31, 2017	4,241,927	4,241,140
Retained earnings:		
Unrestricted	632,637	617,034
Restricted	374,842	322,999
Total retained earnings	1,007,479	940,033
Accumulated other comprehensive loss	(14,767)	(16,660)
Total capital	5,234,639	5,164,513
TOTAL LIABILITIES AND CAPITAL	\$ 99,795,645	\$ 106,895,214

(a) Fair values: \$15,710,068 and \$14,682,329 at September 30, 2018 and December 31, 2017, respectively.

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

FEDERAL HOME LOAN BANK OF CINCINNATI
STATEMENTS OF INCOME
(Unaudited)

(In thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
INTEREST INCOME:				
Advances	\$ 342,138	\$ 251,094	\$ 1,009,613	\$ 647,538
Prepayment fees on Advances, net	27	761	488	1,206
Interest-bearing deposits	194	66	449	107
Securities purchased under agreements to resell	15,808	6,005	33,075	17,364
Federal funds sold	44,203	24,402	130,216	46,167
Investment securities:				
Trading securities	35	4	45	14
Available-for-sale securities	14,222	1,754	27,677	4,503
Held-to-maturity securities	101,174	78,526	278,951	227,430
Total investment securities	115,431	80,284	306,673	231,947
Mortgage loans held for portfolio	80,188	74,716	235,609	221,432
Loans to other FHLBanks	—	—	20	—
Total interest income	597,989	437,328	1,716,143	1,165,761
INTEREST EXPENSE:				
Consolidated Obligations:				
Discount Notes	207,947	124,116	604,387	260,452
Bonds	256,014	200,519	725,221	580,705
Total Consolidated Obligations	463,961	324,635	1,329,608	841,157
Deposits	3,455	1,339	7,906	3,124
Loans from other FHLBanks	—	—	5	6
Mandatorily redeemable capital stock	413	956	1,213	2,035
Total interest expense	467,829	326,930	1,338,732	846,322
NET INTEREST INCOME	130,160	110,398	377,411	319,439
Provision for credit losses	—	500	—	500
NET INTEREST INCOME AFTER PROVISION FOR CREDIT LOSSES	130,160	109,898	377,411	318,939
NON-INTEREST INCOME (LOSS):				
Net gains (losses) on trading securities	805	(1)	800	(5)
Net (losses) gains on financial instruments held under fair value option	(3,607)	87	12,224	(12,371)
Net losses on derivatives and hedging activities	(8,804)	(6,685)	(46,769)	(1,541)
Other, net	2,683	3,389	8,156	10,050
Total non-interest income (loss)	(8,923)	(3,210)	(25,589)	(3,867)
NON-INTEREST EXPENSE:				
Compensation and benefits	10,315	11,286	34,465	31,895
Other operating expenses	4,987	4,821	15,082	14,395
Finance Agency	1,565	1,640	4,694	4,921
Office of Finance	1,219	1,037	3,653	3,157
Other	1,322	1,446	5,779	5,468
Total non-interest expense	19,408	20,230	63,673	59,836
INCOME BEFORE ASSESSMENTS	101,829	86,458	288,149	255,236
Affordable Housing Program assessments	10,224	8,741	28,936	25,727
NET INCOME	\$ 91,605	\$ 77,717	\$ 259,213	\$ 229,509

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

FEDERAL HOME LOAN BANK OF CINCINNATI
STATEMENTS OF COMPREHENSIVE INCOME
(Unaudited)

(In thousands)	<u>Three Months Ended September 30,</u>		<u>Nine Months Ended September 30,</u>	
	2018	2017	2018	2017
Net income	\$ 91,605	\$ 77,717	\$ 259,213	\$ 229,509
Other comprehensive income adjustments:				
Net unrealized (losses) gains on available-for-sale securities	(101)	13	243	(6)
Pension and postretirement benefits	677	427	1,650	1,280
Total other comprehensive income adjustments	<u>576</u>	<u>440</u>	<u>1,893</u>	<u>1,274</u>
Comprehensive income	<u>\$ 92,181</u>	<u>\$ 78,157</u>	<u>\$ 261,106</u>	<u>\$ 230,783</u>

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

FEDERAL HOME LOAN BANK OF CINCINNATI
STATEMENTS OF CAPITAL
(Unaudited)

(In thousands)	Capital Stock Class B - Putable		Retained Earnings			Accumulated Other Comprehensive	Total
	Shares	Par Value	Unrestricted	Restricted	Total	Loss	Capital
BALANCE, DECEMBER 31, 2016	41,569	\$ 4,156,944	\$ 574,122	\$ 260,285	\$ 834,407	\$ (13,256)	\$ 4,978,095
Comprehensive income			183,607	45,902	229,509	1,274	230,783
Proceeds from sale of capital stock	3,421	342,009					342,009
Net shares reclassified to mandatorily redeemable capital stock	(2,694)	(269,403)					(269,403)
Cash dividends on capital stock			(149,336)		(149,336)		(149,336)
BALANCE, SEPTEMBER 30, 2017	<u>42,296</u>	<u>\$ 4,229,550</u>	<u>\$ 608,393</u>	<u>\$ 306,187</u>	<u>\$ 914,580</u>	<u>\$ (11,982)</u>	<u>\$ 5,132,148</u>
<hr/>							
BALANCE, DECEMBER 31, 2017	42,411	\$ 4,241,140	\$ 617,034	\$ 322,999	\$ 940,033	\$ (16,660)	\$ 5,164,513
Comprehensive income			207,370	51,843	259,213	1,893	261,106
Proceeds from sale of capital stock	3,035	303,488					303,488
Repurchase of capital stock	(2,973)	(297,252)					(297,252)
Net shares reclassified to mandatorily redeemable capital stock	(54)	(5,449)					(5,449)
Cash dividends on capital stock			(191,767)		(191,767)		(191,767)
BALANCE, SEPTEMBER 30, 2018	<u>42,419</u>	<u>\$ 4,241,927</u>	<u>\$ 632,637</u>	<u>\$ 374,842</u>	<u>\$ 1,007,479</u>	<u>\$ (14,767)</u>	<u>\$ 5,234,639</u>

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

FEDERAL HOME LOAN BANK OF CINCINNATI
STATEMENTS OF CASH FLOWS
(Unaudited)

(In thousands)	Nine Months Ended September 30,	
	2018	2017
OPERATING ACTIVITIES:		
Net income	\$ 259,213	\$ 229,509
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	22,308	52,482
Net change in derivative and hedging activities	39,727	3,071
Net change in fair value adjustments on trading securities	(800)	5
Net change in fair value adjustments on financial instruments held under fair value option	(12,224)	12,371
Other adjustments	—	492
Net change in:		
Accrued interest receivable	(43,441)	(16,542)
Other assets	7,977	31,416
Accrued interest payable	19,033	13,885
Other liabilities	14,600	9,034
Total adjustments	47,180	106,214
Net cash provided by operating activities	306,393	335,723
INVESTING ACTIVITIES:		
Net change in:		
Interest-bearing deposits	(1,928)	32,613
Securities purchased under agreements to resell	3,210,500	3,425,216
Federal funds sold	(5,260,000)	(6,153,000)
Premises, software, and equipment	(1,531)	(1,474)
Trading securities:		
Proceeds from maturities of long-term	125	130
Purchases of long-term	(71,935)	—
Available-for-sale securities:		
Net (increase) decrease in short-term	(1,150,000)	750,000
Purchases of long-term	(24,000)	—
Held-to-maturity securities:		
Net increase in short-term	(1,440)	(2,659)
Proceeds from maturities of long-term	1,951,685	1,689,076
Purchases of long-term	(3,342,923)	(2,308,841)
Advances:		
Repaid	2,336,379,163	1,723,659,537
Originated	(2,324,286,546)	(1,721,727,743)
Mortgage loans held for portfolio:		
Principal collected	859,958	910,123
Purchases	(1,391,681)	(1,294,430)
Net cash provided by (used in) investing activities	6,869,447	(1,021,452)

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

(continued from previous page)

FEDERAL HOME LOAN BANK OF CINCINNATI
STATEMENTS OF CASH FLOWS
(Unaudited)

(In thousands)

	Nine Months Ended September 30,	
	2018	2017
FINANCING ACTIVITIES:		
Net change in deposits and pass-through reserves	\$ 1,144,681	\$ (159,879)
Net payments on derivative contracts with financing elements	(908)	(3,700)
Net proceeds from issuance of Consolidated Obligations:		
Discount Notes	424,259,455	376,963,718
Bonds	19,549,736	16,837,655
Payments for maturing and retiring Consolidated Obligations:		
Discount Notes	(425,170,844)	(372,154,571)
Bonds	(26,773,265)	(20,717,750)
Proceeds from issuance of capital stock	303,488	342,009
Payments for repurchase of capital stock	(297,252)	—
Payments for repurchase/redemption of mandatorily redeemable capital stock	(13,106)	(272,771)
Cash dividends paid	(191,767)	(149,336)
Net cash (used in) provided by financing activities	<u>(7,189,782)</u>	<u>685,375</u>
Net decrease in cash and cash equivalents	(13,942)	(354)
Cash and cash equivalents at beginning of the period	26,550	8,737
Cash and cash equivalents at end of the period	<u>\$ 12,608</u>	<u>\$ 8,383</u>
Supplemental Disclosures:		
Interest paid	<u>\$ 1,325,065</u>	<u>\$ 810,434</u>
Affordable Housing Program payments, net	<u>\$ 25,365</u>	<u>\$ 24,010</u>

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

FEDERAL HOME LOAN BANK OF CINCINNATI
NOTES TO UNAUDITED FINANCIAL STATEMENTS

Background Information

The Federal Home Loan Bank of Cincinnati (the FHLB), a federally chartered corporation, is one of 11 District Federal Home Loan Banks (FHLBanks). The FHLBanks serve the public by enhancing the availability of credit for residential mortgages and targeted community development. The FHLB is regulated by the Federal Housing Finance Agency (Finance Agency).

Note 1 - Basis of Presentation

The accompanying interim financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The preparation of financial statements in accordance with GAAP requires management to make assumptions and estimates. These assumptions and estimates affect the reported amount of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of income and expenses. Actual results could differ from these estimates. The interim financial statements presented are unaudited, but they include all adjustments (consisting of only normal recurring adjustments) which are, in the opinion of management, necessary for a fair statement of the financial condition, results of operations, and cash flows for such periods. These financial statements do not include all disclosures associated with annual financial statements and accordingly should be read in conjunction with the audited financial statements and notes included in the FHLB's Annual Report on Form 10-K for the year ended December 31, 2017 filed with the Securities and Exchange Commission (SEC). Results for the nine months ended September 30, 2018 are not necessarily indicative of operating results for the full year.

The FHLB presents certain financial instruments, including derivative instruments and securities purchased under agreements to resell, on a net basis when it has a legal right of offset and all other requirements for netting are met (collectively referred to as the netting requirements). For these instruments, the FHLB 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 FHLB did not have any offsetting liabilities related to its securities purchased under agreements to resell for the periods presented.

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 this collateral is received or pledged. Likewise, there may be a delay for excess collateral to be returned. For derivative instruments that meet the requirements for netting, any excess cash collateral received or pledged is recognized as a derivative liability or derivative asset. Additional information regarding these agreements is provided in Note 10. Based on the fair value of the related collateral held, the securities purchased under agreements to resell were fully collateralized for the periods presented. For more information about the FHLB's investments in securities purchased under agreements to resell, see "Item 8. Financial Statements and Supplementary Data - Note 1 - Summary of Significant Accounting Policies" in the FHLB's 2017 Annual Report on Form 10-K.

The FHLB did not hold any equity securities as of September 30, 2018 and December 31, 2017.

Reclassifications. Certain amounts in the 2017 financial statements and footnotes have been reclassified to conform to the presentation as of September 30, 2018. Specifically, due to a change in presentation, variation margin on certain cleared derivatives has been reclassified from netting adjustments and cash collateral and allocated to the individual derivative instruments. Refer to Note 10 for additional information.

Subsequent Events. The FHLB has evaluated subsequent events for potential recognition or disclosure through the issuance of these financial statements and believes there have been no material subsequent events requiring additional disclosure or recognition in these financial statements.

Note 2 - Recently Issued Accounting Standards and Interpretations

Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes. On October 25, 2018, the Financial Accounting Standards Board (FASB) issued guidance that permits the OIS rate based on SOFR as an eligible U.S. benchmark interest rate for hedge accounting purposes, to facilitate the LIBOR to SOFR transition. This guidance becomes effective for the FHLB for interim and annual periods

beginning on January 1, 2019. The FHLB is in the process of evaluating the effect this guidance may have on its hedging strategies.

Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract. On August 29, 2018, the FASB issued amended guidance that aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license). This guidance becomes effective for the FHLB for interim and annual periods beginning on January 1, 2020. Early adoption is permitted. The FHLB is in the process of evaluating the guidance, and its effect on the FHLB's financial condition, results of operations, and cash flows has not yet been determined.

Changes to the Disclosure Requirements for Defined Benefit Plans. On August 28, 2018, the FASB issued amended guidance that modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans to improve disclosure effectiveness. This guidance becomes effective for annual periods ending after December 15, 2020 (December 31, 2020 for the FHLB) and will be applied retrospectively for all comparative periods presented. Early adoption is permitted. The FHLB is in the process of evaluating the guidance's impact on financial statement disclosures. However, the guidance will not affect the FHLB's financial condition, results of operations, or cash flows.

Changes to the Disclosure Requirements for Fair Value Measurement. On August 28, 2018, the FASB issued amended guidance that modifies the disclosure requirements on fair value measurements to improve disclosure effectiveness. This guidance becomes effective for the FHLB for interim and annual periods beginning on January 1, 2020. Early adoption is permitted. The FHLB is in the process of evaluating the guidance's impact on financial statement disclosures. However, the guidance will not affect the FHLB's financial condition, results of operations, or cash flows.

Targeted Improvements to Accounting for Hedging Activities. On August 28, 2017, the FASB issued amended guidance to improve the financial reporting of hedging relationships to better portray the economic results of an entity's risk management activities in its financial statements. This guidance requires that, for fair value hedges, the entire change in the fair value of the hedging instrument included in the assessment of hedge effectiveness be presented in the same income statement line that is used to present the earnings effect of the hedged item. For cash flow hedges, the entire change in the fair value of the hedging instrument included in the assessment of hedge effectiveness must be recorded in other comprehensive income. In addition, the amendments include certain targeted improvements to the assessment of hedge effectiveness. This guidance becomes effective for the FHLB for interim and annual periods beginning on January 1, 2019, and early adoption is permitted. The amended presentation and disclosure guidance is required only prospectively. The FHLB does not intend to adopt the new guidance early. The FHLB has evaluated this guidance and it is not expected to affect the FHLB's application of hedge accounting for existing hedge strategies on the date of adoption, with the exception of the designation of a fallback long-haul method for its short-cut hedge strategies. Upon adoption, this guidance will also affect the FHLB's income statement presentation prospectively for fair value hedge relationships and will require certain new disclosures. The FHLB will continue to assess opportunities enabled by the new guidance to expand its risk management strategies, which may be implemented for new transactions after the date of adoption.

Premium Amortization on Purchased Callable Debt Securities. On March 30, 2017, the 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 FHLB 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 FHLB does not intend to adopt this guidance early. The guidance will not have a material impact on the FHLB's financial condition, results of operations, and cash flows.

Improving the Presentation of Net Periodic Pension and 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 and postretirement benefit costs (net benefit costs). The amendments also provide explicit guidance on how to present the service cost component and the other components of net benefit costs in the income statement and allow only the service cost component of net benefit cost to be eligible for capitalization. This guidance became effective for the FHLB for interim and annual periods beginning on January 1, 2018, and was adopted retrospectively, for the presentation of the service cost component and the other components of net benefit costs in the income statement. For the capitalization of the service cost component of net benefit costs, this guidance was applied prospectively on and after the effective date. As a result of the adoption, \$819,000 and \$2,454,000 of other components of net benefit costs were reclassified from "Compensation and benefits" to "Other" within the non-interest expense section of the Statements of Income for the three and nine months ended

September 30, 2017, respectively. The adoption of this guidance had no effect on the FHLB's financial condition and cash flows.

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 became effective for the FHLB for interim and annual periods beginning on January 1, 2018. The adoption of this guidance had no effect on the FHLB's financial condition, results of operations, and cash flows.

Measurement of Credit Losses on Financial Instruments. On June 16, 2016, the FASB issued amended guidance for the accounting of credit losses on financial instruments. The amendments require entities to immediately record the full amount of expected credit losses in their loan portfolios. The measurement of expected credit losses is based on relevant information about past events, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount. The guidance also requires, among other things, credit losses relating to available-for-sale debt securities to be recorded through an allowance for credit losses and expanded disclosure requirements. The guidance is effective for the FHLB for interim and annual periods beginning on January 1, 2020. Early application is permitted as of the interim and annual reporting periods beginning after December 15, 2018. The guidance should be applied using a modified-retrospective approach, through a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is effective. In addition, entities are required to use a prospective transition approach for debt securities for which an other-than-temporary impairment had been recognized before the effective date. The FHLB does not intend to adopt the new guidance early. While the FHLB is still in the process of evaluating this guidance, the FHLB expects the guidance will result in an increase in the allowance for credit losses given the requirement to estimate losses for the entire estimated life of the financial asset. The extent of the impact on the FHLB's financial condition, results of operations, and cash flows will depend upon the composition of the FHLB's financial assets at the adoption date and the economic conditions and forecasts at that time.

Leases. On February 25, 2016, the FASB issued guidance which requires recognition of lease assets and lease liabilities on the Statement of Condition and disclosure of key information about leasing arrangements. In particular, this guidance requires a lessee, of operating or finance leases, to recognize on the Statement of Condition a liability to make lease payments and a right-of-use asset representing its right to use the underlying asset for the lease term. However, for leases with a term of 12 months or less, a lessee is permitted to make an accounting policy election not to recognize lease assets and lease liabilities. The guidance becomes effective for the FHLB for the interim and annual periods beginning on January 1, 2019, and early application is permitted. As amended, the guidance allows lessors and lessees to recognize and measure leases at the adoption date by recognizing a cumulative-effect adjustment directly to retained earnings as of the beginning of the period of adoption. The FHLB does not intend to adopt the new guidance early. Upon adoption, the FHLB will report higher assets and liabilities as a result of including right-of-use assets and lease liabilities on its Statement of Condition. However, the new guidance will not have a material impact on the FHLB's financial condition, results of operations, and 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 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 the fair value option.
- Requires separate presentation of financial assets and financial liabilities by measurement category and form of financial asset 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 for financial instruments measured at amortized cost on the Statement of Condition.

The guidance became effective for the FHLB for the interim and annual periods beginning on January 1, 2018. While the adoption of this guidance affected the FHLB's disclosures, the requirement to present the instrument-specific credit risk in other comprehensive income did not have any effect on the FHLB's financial condition, results of operations, and cash flows.

Revenue from Contracts with Customers. On May 28, 2014, the FASB issued guidance on revenue from contracts with customers. This guidance applies to all contracts with customers except those that are within the scope of certain other standards, such as financial instruments, certain guarantees, insurance contracts, and lease contracts. This guidance became effective for the FHLB for the interim and annual periods beginning on January 1, 2018. Given that the majority of the FHLB's financial instruments and other contractual rights that generate revenue are covered by other GAAP, the adoption of this guidance did not have any effect on the FHLB's financial condition, results of operations, and cash flows.

Note 3 - Trading Securities

Table 3.1 - Trading Securities by Major Security Types (in thousands)

<u>Fair Value</u>	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Non-mortgage-backed securities:		
Government-sponsored enterprises (GSE) obligations	\$ 82,753	\$ —
Mortgage-backed securities (MBS):		
U.S. obligation single-family MBS	651	781
Total	<u>\$ 83,404</u>	<u>\$ 781</u>

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

	<u>Nine Months Ended September 30,</u>	
	<u>2018</u>	<u>2017</u>
Net gains (losses) on trading securities held at period end	\$ 800	\$ (5)
Net gains (losses) on trading securities	<u>\$ 800</u>	<u>\$ (5)</u>

Note 4 - Available-for-Sale Securities

Table 4.1 - Available-for-Sale Securities by Major Security Types (in thousands)

	<u>September 30, 2018</u>			
	<u>Amortized Cost ⁽¹⁾</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Certificates of deposit	\$ 2,050,000	\$ 88	\$ (108)	\$ 2,049,980
GSE obligations	23,909	139	—	24,048
Total	<u>\$ 2,073,909</u>	<u>\$ 227</u>	<u>\$ (108)</u>	<u>\$ 2,074,028</u>
	<u>December 31, 2017</u>			
	<u>Amortized Cost ⁽¹⁾</u>	<u>Gross Unrealized Gains</u>	<u>Gross Unrealized Losses</u>	<u>Fair Value</u>
Certificates of deposit	\$ 900,000	\$ —	\$ (124)	\$ 899,876
Total	<u>\$ 900,000</u>	<u>\$ —</u>	<u>\$ (124)</u>	<u>\$ 899,876</u>

(1) Amortized cost of available-for-sale securities includes adjustments made to the cost basis of an investment for accretion, amortization, and/or fair value hedge accounting adjustments.

All securities outstanding with gross unrealized losses at September 30, 2018 and December 31, 2017 were in a continuous unrealized loss position for less than 12 months.

Table 4.2 - Available-for-Sale Securities by Contractual Maturity (in thousands)

<u>Year of Maturity</u>	<u>September 30, 2018</u>		<u>December 31, 2017</u>	
	<u>Amortized Cost</u>	<u>Fair Value</u>	<u>Amortized Cost</u>	<u>Fair Value</u>
Due in 1 year or less	\$ 2,050,000	\$ 2,049,980	\$ 900,000	\$ 899,876
Due after 1 year through 5 years	—	—	—	—
Due after 5 years through 10 years	23,909	24,048	—	—
Due after 10 years	—	—	—	—
Total	<u>\$ 2,073,909</u>	<u>\$ 2,074,028</u>	<u>\$ 900,000</u>	<u>\$ 899,876</u>

Table 4.3 - Interest Rate Payment Terms of Available-for-Sale Securities (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Amortized cost of available-for-sale securities:		
Fixed-rate	<u>\$ 2,073,909</u>	<u>\$ 900,000</u>

Realized Gains and Losses. The FHLB had no sales of securities out of its available-for-sale portfolio for the nine months ended September 30, 2018 or 2017.

Note 5 - Held-to-Maturity Securities
Table 5.1 - Held-to-Maturity Securities by Major Security Types (in thousands)

	<u>September 30, 2018</u>			
	<u>Amortized Cost ⁽¹⁾</u>	<u>Gross Unrecognized Holding Gains</u>	<u>Gross Unrecognized Holding Losses</u>	<u>Fair Value</u>
Non-MBS:				
U.S. Treasury obligations	\$ 35,473	\$ —	\$ (9)	\$ 35,464
Total non-MBS	<u>35,473</u>	<u>—</u>	<u>(9)</u>	<u>35,464</u>
MBS:				
U.S. obligation single-family MBS	2,131,178	1,743	(78,736)	2,054,185
GSE single-family MBS	5,784,933	8,818	(242,187)	5,551,564
GSE multi-family MBS	8,069,453	5,590	(6,188)	8,068,855
Total MBS	<u>15,985,564</u>	<u>16,151</u>	<u>(327,111)</u>	<u>15,674,604</u>
Total	<u>\$ 16,021,037</u>	<u>\$ 16,151</u>	<u>\$ (327,120)</u>	<u>\$ 15,710,068</u>
	<u>December 31, 2017</u>			
	<u>Amortized Cost ⁽¹⁾</u>	<u>Gross Unrecognized Holding Gains</u>	<u>Gross Unrecognized Holding Losses</u>	<u>Fair Value</u>
Non-MBS:				
U.S. Treasury obligations	\$ 34,033	\$ —	\$ (6)	\$ 34,027
Total non-MBS	<u>34,033</u>	<u>—</u>	<u>(6)</u>	<u>34,027</u>
MBS:				
U.S. obligation single-family MBS	2,483,446	1,974	(23,547)	2,461,873
GSE single-family MBS	6,703,367	37,265	(138,960)	6,601,672
GSE multi-family MBS	5,584,124	4,956	(4,323)	5,584,757
Total MBS	<u>14,770,937</u>	<u>44,195</u>	<u>(166,830)</u>	<u>14,648,302</u>
Total	<u>\$ 14,804,970</u>	<u>\$ 44,195</u>	<u>\$ (166,836)</u>	<u>\$ 14,682,329</u>

(1) Carrying value equals amortized cost.

Table 5.2 - Net Purchased Premiums Included in the Amortized Cost of MBS Classified as Held-to-Maturity (in thousands)

	September 30, 2018	December 31, 2017
Premiums	\$ 44,108	\$ 49,713
Discounts	(20,920)	(24,243)
Net purchased premiums	<u>\$ 23,188</u>	<u>\$ 25,470</u>

Table 5.3 summarizes the held-to-maturity 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 5.3 - Held-to-Maturity Securities in a Continuous Unrealized Loss Position (in thousands)

	September 30, 2018					
	Less than 12 Months		12 Months or more		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Non-MBS:						
U.S. Treasury obligations	\$ 35,464	\$ (9)	\$ —	\$ —	\$ 35,464	\$ (9)
Total non-MBS	<u>35,464</u>	<u>(9)</u>	<u>—</u>	<u>—</u>	<u>35,464</u>	<u>(9)</u>
MBS:						
U.S. obligation single-family MBS	515,695	(16,585)	1,160,314	(62,151)	1,676,009	(78,736)
GSE single-family MBS	1,113,280	(21,368)	3,716,631	(220,819)	4,829,911	(242,187)
GSE multi-family MBS	3,512,957	(5,983)	129,872	(205)	3,642,829	(6,188)
Total MBS	<u>5,141,932</u>	<u>(43,936)</u>	<u>5,006,817</u>	<u>(283,175)</u>	<u>10,148,749</u>	<u>(327,111)</u>
Total	<u>\$ 5,177,396</u>	<u>\$ (43,945)</u>	<u>\$ 5,006,817</u>	<u>\$ (283,175)</u>	<u>\$ 10,184,213</u>	<u>\$ (327,120)</u>
December 31, 2017						
	Less than 12 Months		12 Months or more		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
Non-MBS:						
U.S. Treasury obligations	\$ 34,027	\$ (6)	\$ —	\$ —	\$ 34,027	\$ (6)
Total non-MBS	<u>34,027</u>	<u>(6)</u>	<u>—</u>	<u>—</u>	<u>34,027</u>	<u>(6)</u>
MBS:						
U.S. obligation single-family MBS	1,193,566	(10,455)	657,209	(13,092)	1,850,775	(23,547)
GSE single-family MBS	1,169,590	(14,171)	3,578,537	(124,789)	4,748,127	(138,960)
GSE multi-family MBS	1,133,452	(4,307)	136,051	(16)	1,269,503	(4,323)
Total MBS	<u>3,496,608</u>	<u>(28,933)</u>	<u>4,371,797</u>	<u>(137,897)</u>	<u>7,868,405</u>	<u>(166,830)</u>
Total	<u>\$ 3,530,635</u>	<u>\$ (28,939)</u>	<u>\$ 4,371,797</u>	<u>\$ (137,897)</u>	<u>\$ 7,902,432</u>	<u>\$ (166,836)</u>

Table 5.4 - Held-to-Maturity Securities by Contractual Maturity (in thousands)

<u>Year of Maturity</u>	<u>September 30, 2018</u>		<u>December 31, 2017</u>	
	<u>Amortized Cost ⁽¹⁾</u>	<u>Fair Value</u>	<u>Amortized Cost ⁽¹⁾</u>	<u>Fair Value</u>
Non-MBS:				
Due in 1 year or less	\$ 35,473	\$ 35,464	\$ 34,033	\$ 34,027
Due after 1 year through 5 years	—	—	—	—
Due after 5 years through 10 years	—	—	—	—
Due after 10 years	—	—	—	—
Total non-MBS	35,473	35,464	34,033	34,027
MBS ⁽²⁾	15,985,564	15,674,604	14,770,937	14,648,302
Total	<u>\$ 16,021,037</u>	<u>\$ 15,710,068</u>	<u>\$ 14,804,970</u>	<u>\$ 14,682,329</u>

(1) Carrying value equals amortized cost.

(2) MBS are not presented by contractual maturity because their expected maturities will likely differ from contractual maturities because borrowers may have the right to call or prepay obligations with or without call or prepayment fees.

Table 5.5 - Interest Rate Payment Terms of Held-to-Maturity Securities (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Amortized cost of non-MBS:		
Fixed-rate	\$ 35,473	\$ 34,033
Total amortized cost of non-MBS	35,473	34,033
Amortized cost of MBS:		
Fixed-rate	6,935,599	8,003,906
Variable-rate	9,049,965	6,767,031
Total amortized cost of MBS	15,985,564	14,770,937
Total	<u>\$ 16,021,037</u>	<u>\$ 14,804,970</u>

Realized Gains and Losses. From time to time the FHLB may sell securities out of its held-to-maturity portfolio. These securities, generally, have less than 15 percent of the acquired principal outstanding at the time of the sale. These sales are considered maturities for the purposes of security classification. For the nine months ended September 30, 2018 and 2017, the FHLB did not sell any held-to-maturity securities.

Note 6 - Other-Than-Temporary Impairment Analysis

The FHLB evaluates any of its individual available-for-sale and held-to-maturity investment securities holdings in an unrealized loss position for other-than-temporary impairment on a quarterly basis.

U.S. Obligations and GSE Investments

For its U.S. obligations and GSE investments (MBS and non-MBS), the FHLB has determined that the strength of the issuers' guarantees through direct obligations or support from the U.S. government is sufficient to protect the FHLB from losses based on current expectations. As a result, the FHLB determined that, as of September 30, 2018, all of the gross unrealized losses on these investments were temporary as the declines in market value of these securities were not attributable to credit quality. Furthermore, the FHLB does not intend to sell the investments, and it is not more likely than not that the FHLB will be required to sell the investments before recovery of their amortized cost bases. As a result, the FHLB did not consider any of these investments to be other-than-temporarily impaired at September 30, 2018.

All Other Investment Securities

The FHLB also reviewed its other securities that have experienced unrealized losses at September 30, 2018 and determined that the unrealized losses are due primarily to interest rate volatility and/or illiquidity. These losses are considered temporary as the FHLB expects to recover its entire amortized cost basis. Additionally, because the FHLB does not intend to sell these securities,

nor is it more likely than not that the FHLB will be required to sell the securities before recovery, it did not consider the investments to be other-than-temporarily impaired at September 30, 2018.

The FHLB did not consider any of its investments to be other-than-temporarily impaired at December 31, 2017.

Note 7 - Advances

The FHLB offers a wide range of fixed- and variable-rate Advance products with different maturities, interest rates, payment characteristics and optionality. The following table presents Advance redemptions by contractual maturity, including index-amortizing Advances, which are presented according to their predetermined amortization schedules.

Table 7.1 - Advance Redemption Terms (dollars in thousands)

<u>Redemption Term</u>	<u>September 30, 2018</u>		<u>December 31, 2017</u>	
	<u>Amount</u>	<u>Weighted Average Interest Rate</u>	<u>Amount</u>	<u>Weighted Average Interest Rate</u>
Overdrawn demand deposit accounts	\$ 4,686	2.32%	\$ 1,302	1.55%
Due in 1 year or less	38,113,016	2.26	40,473,141	1.55
Due after 1 year through 2 years	10,073,918	2.30	15,655,118	1.69
Due after 2 years through 3 years	3,229,763	2.21	6,537,170	1.74
Due after 3 years through 4 years	1,068,098	2.39	1,980,655	2.00
Due after 4 years through 5 years	919,612	2.58	893,283	2.07
Thereafter	4,476,690	2.79	4,437,731	2.17
Total principal amount	57,885,783	2.31	69,978,400	1.66
Commitment fees	(485)		(510)	
Discount on Affordable Housing Program (AHP) Advances	(4,717)		(5,795)	
Premiums	1,580		1,789	
Discounts	(3,362)		(4,252)	
Hedging adjustments	(108,252)		(51,421)	
Fair value option valuation adjustments and accrued interest	(64)		13	
Total	<u>\$ 57,770,483</u>		<u>\$ 69,918,224</u>	

The FHLB offers certain fixed and variable-rate Advances to members that may be prepaid on specified dates (call dates) without incurring prepayment or termination fees (callable Advances). If the call option is exercised, replacement funding may be available to members. Other Advances may only be prepaid subject to a prepayment fee paid to the FHLB that makes the FHLB financially indifferent to the prepayment of the Advance.

Table 7.2 - Advances by Year of Contractual Maturity or Next Call Date (in thousands)

<u>Year of Contractual Maturity or Next Call Date</u>	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Overdrawn demand deposit accounts	\$ 4,686	\$ 1,302
Due in 1 year or less	43,344,215	46,390,733
Due after 1 year through 2 years	7,906,077	15,054,889
Due after 2 years through 3 years	3,637,763	3,768,534
Due after 3 years through 4 years	778,941	2,903,655
Due after 4 years through 5 years	737,412	506,557
Thereafter	1,476,689	1,352,730
Total principal amount	<u>\$ 57,885,783</u>	<u>\$ 69,978,400</u>

The FHLB also offers puttable Advances. With a puttable Advance, the FHLB effectively purchases put options from the member that allows the FHLB to terminate the Advance at predetermined dates. The FHLB normally would exercise its put option when interest rates increase relative to contractual rates.

Table 7.3 - Advances by Year of Contractual Maturity or Next Put Date for Puttable Advances (in thousands)

<u>Year of Contractual Maturity or Next Put Date</u>	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Overdrawn demand deposit accounts	\$ 4,686	\$ 1,302
Due in 1 year or less	38,348,016	40,588,641
Due after 1 year through 2 years	10,073,918	15,649,618
Due after 2 years through 3 years	3,229,763	6,537,170
Due after 3 years through 4 years	1,068,098	1,980,655
Due after 4 years through 5 years	919,612	893,283
Thereafter	4,241,690	4,327,731
Total principal amount	<u>\$ 57,885,783</u>	<u>\$ 69,978,400</u>

Table 7.4 - Advances by Interest Rate Payment Terms (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Total fixed-rate ⁽¹⁾	\$ 36,304,274	\$ 36,615,777
Total variable-rate ⁽¹⁾	21,581,509	33,362,623
Total principal amount	<u>\$ 57,885,783</u>	<u>\$ 69,978,400</u>

(1) Payment terms based on current interest rate terms, which reflect any option exercises or rate conversions that have occurred subsequent to the related Advance issuance.

Table 7.5 - Borrowers Holding Five Percent or more of Total Advances, Including Any Known Affiliates that are Members of the FHLB (dollars in millions)

	<u>September 30, 2018</u>		<u>December 31, 2017</u>	
	<u>Principal</u>	<u>% of Total Principal Amount of Advances</u>	<u>Principal</u>	<u>% of Total Principal Amount of Advances</u>
JPMorgan Chase Bank, N.A.	\$ 19,000	33%	\$ 23,950	34%
U.S. Bank, N.A.	9,574	17	8,975	13
Third Federal Savings and Loan Association	3,717	6	3,756	5
Total	<u>\$ 32,291</u>	<u>56%</u>	<u>\$ 40,413</u>	<u>57%</u>

Note 8 - Mortgage Loans Held for Portfolio

Table 8.1 - Mortgage Loans Held for Portfolio (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Unpaid principal balance:		
Fixed rate medium-term single-family mortgage loans ⁽¹⁾	\$ 975,387	\$ 1,128,749
Fixed rate long-term single-family mortgage loans	8,979,866	8,325,465
Total unpaid principal balance	9,955,253	9,454,214
Premiums	223,196	217,716
Discounts	(2,722)	(3,173)
Hedging basis adjustments ⁽²⁾	6,358	13,373
Total mortgage loans held for portfolio	<u>\$ 10,182,085</u>	<u>\$ 9,682,130</u>

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

(2) Represents the unamortized balance of the mortgage purchase commitments' market values at the time of settlement. The market value of the commitment is included in the basis of the mortgage loan and amortized accordingly.

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

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Unpaid principal balance:		
Conventional mortgage loans	\$ 9,670,324	\$ 9,129,003
Federal Housing Administration (FHA) mortgage loans	284,929	325,211
Total unpaid principal balance	<u>\$ 9,955,253</u>	<u>\$ 9,454,214</u>

For information related to the FHLB's credit risk on mortgage loans and allowance for credit losses, see Note 9.

Table 8.3 - Members, Including Any Known Affiliates that are Members of the FHLB, and Former Members Selling Five Percent or more of Total Unpaid Principal (dollars in millions)

	<u>September 30, 2018</u>			<u>December 31, 2017</u>	
	<u>Principal</u>	<u>% of Total</u>		<u>Principal</u>	<u>% of Total</u>
Union Savings Bank	\$ 3,383	34%	Union Savings Bank	\$ 3,247	34%
Guardian Savings Bank FSB	968	10	Guardian Savings Bank FSB	933	10
			PNC Bank, N.A. ⁽¹⁾	516	5

(1) Former member.

Note 9 - Allowance for Credit Losses

The FHLB has established an allowance methodology for each of the FHLB's portfolio segments: credit products (Advances, Letters of Credit and other extensions of credit to members); FHA mortgage loans held for portfolio; and conventional mortgage loans held for portfolio.

Credit Products

The FHLB manages its credit exposure to credit products through an integrated approach that includes establishing a credit limit for each borrower, ongoing review of each borrower's financial condition, coupled with collateral and lending policies to limit risk of loss while balancing borrowers' needs for a reliable source of funding. In addition, the FHLB lends to eligible borrowers in accordance with federal law and Finance Agency regulations, which require the FHLB to obtain sufficient collateral to fully secure credit products. The estimated value of the collateral required to secure each member's credit products is calculated by applying collateral discounts, or haircuts, to the value of the collateral. The FHLB accepts certain investment securities, residential mortgage loans, deposits and other real estate related assets as collateral. In addition, community financial institutions are eligible to utilize expanded statutory collateral provisions for small business, agriculture loans and community development loans. The FHLB's capital stock owned by its member borrowers is also pledged as collateral. Collateral

arrangements and a member's borrowing capacity vary based on the financial condition and performance of the institution, the types of collateral pledged and the overall quality of those assets. The FHLB can also require additional or substitute collateral to protect its security interest. Management of the FHLB believes that these policies effectively manage the FHLB's credit risk from credit products.

Members experiencing financial difficulties are subject to FHLB-performed "stress tests" of the impact of poorly performing assets on the member's capital and loss reserve positions. Depending on the results of these tests and the level of over-collateralization, a member may be allowed to maintain pledged loan assets in its custody, may be required to deliver those loans into the custody of the FHLB or its agent, and/or may be required to provide details on these loans to facilitate an estimate of their fair value. The FHLB perfects its security interest in all pledged collateral. The FHLBank Act affords any security interest granted to the FHLB by a member priority over the claims or rights of any other party except for claims or rights of a third party that would be entitled to priority under otherwise applicable law and that are held by a bona fide purchaser for value or by a secured party holding a prior perfected security interest.

Using a risk-based approach, the FHLB considers the payment status, collateralization levels, and borrower's financial condition to be indicators of credit quality for its credit products. At September 30, 2018 and December 31, 2017, the FHLB had rights to collateral on a member-by-member basis with an estimated value in excess of its outstanding extensions of credit.

The FHLB evaluates and makes changes to its collateral guidelines, as necessary, based on current market conditions. At September 30, 2018 and December 31, 2017, the FHLB did not have any Advances that were past due, in non-accrual status or impaired. In addition, there were no troubled debt restructurings related to credit products of the FHLB during the nine months ended September 30, 2018 or 2017.

The FHLB has not experienced any credit losses on Advances since it was founded in 1932. Based upon the collateral held as security, its credit extension and collateral policies and the repayment history on credit products, the FHLB did not record any credit losses on credit products as of September 30, 2018 or December 31, 2017. Accordingly, the FHLB did not record any allowance for credit losses on Advances.

At September 30, 2018 and December 31, 2017, the FHLB did not record any liability to reflect an allowance for credit losses for off-balance sheet credit exposures. See Note 19 for additional information on the FHLB's off-balance sheet credit exposure.

Mortgage Loans Held for Portfolio - FHA

The FHLB invests in fixed-rate mortgage loans secured by one-to-four family residential properties insured by the FHA. The FHLB expects to recover any losses from such loans from the FHA. Any losses from these loans that are not recovered from the FHA would be due to a claim rejection by the FHA and, as such, would be recoverable from the selling participating financial institutions. Therefore, the FHLB only has credit risk for these loans if the seller or servicer fails to pay for losses not covered by the FHA insurance. As a result, the FHLB did not establish an allowance for credit losses on its FHA insured mortgage loans. Furthermore, due to the insurance, none of these mortgage loans have been placed on non-accrual status.

Mortgage Loans Held for Portfolio - Conventional Mortgage Purchase Program (MPP)

The FHLB determines the allowance for conventional loans through analyses that include consideration of various data observations such as past performance, current performance, loan portfolio characteristics, collateral-related characteristics, industry data, and prevailing economic conditions. The measurement of the allowance for credit losses consists of:

(1) collectively evaluating homogeneous pools of residential mortgage loans; (2) reviewing specifically identified loans for impairment; and (3) considering other relevant qualitative factors.

Collectively Evaluated Mortgage Loans. The credit risk analysis of conventional loans evaluated collectively for impairment considers historical delinquency migration, applies estimated loss severities, and incorporates the associated credit enhancements in order to determine the FHLB's best estimate of probable incurred losses at the reporting date. The FHLB performs the credit risk analysis of all conventional mortgage loans at the individual Master Commitment Contract level to properly determine the credit enhancements available to recover losses on loans under each individual Master Commitment Contract. The Master Commitment Contract is an agreement with a member in which the member agrees to make a best efforts attempt to sell a specific dollar amount of loans to the FHLB generally over a one-year period. Migration analysis is a methodology for determining, through the FHLB's experience over a historical period, the rate of default on loans. The FHLB applies migration analysis to loans based on payment status categories such as current, 30, 60, and 90 days past due. The FHLB then estimates how many loans in these categories may migrate to a loss realization event and applies a current loss severity to

estimate losses. The estimated losses are then reduced by the probable cash flows resulting from available credit enhancements. Any credit enhancement cash flows that are projected and assessed as not probable of receipt do not reduce estimated losses.

Individually Evaluated Mortgage Loans. Conventional mortgage loans that are considered troubled debt restructurings are specifically identified for purposes of calculating the allowance for credit losses. The FHLB measures impairment of these specifically identified loans by either estimating the present value of expected cash flows, estimating the loan's observable market price, or estimating the fair value of the collateral if the loan is collateral dependent. The FHLB removes specifically identified loans evaluated for impairment from the collectively evaluated mortgage loan population.

Qualitative Factors. The FHLB also assesses other qualitative factors in its estimation of loan losses for the collectively evaluated population. This amount represents a subjective management judgment, based on facts and circumstances that exist as of the reporting date, which is intended to cover other incurred losses that may not otherwise be captured in the methodology described above.

Rollforward of Allowance for Credit Losses on Mortgage Loans. The following tables present a rollforward of the allowance for credit losses on conventional mortgage loans as well as the recorded investment in mortgage loans by impairment methodology. The recorded investment in a loan is the unpaid principal balance of the loan adjusted for accrued interest, unamortized premiums or discounts, hedging basis adjustments and direct write-downs. The recorded investment is not net of any allowance.

Table 9.1 - Rollforward of Allowance for Credit Losses on Conventional Mortgage Loans (in thousands)

	Three Months Ended September 30,	
	2018	2017
Balance, beginning of period	\$ 953	\$ 970
Net charge offs	(26)	(170)
Provision for credit losses	—	500
Balance, end of period	<u>\$ 927</u>	<u>\$ 1,300</u>

	Nine Months Ended September 30,	
	2018	2017
Balance, beginning of period	\$ 1,190	\$ 1,142
Net charge offs	(263)	(342)
Provision for credit losses	—	500
Balance, end of period	<u>\$ 927</u>	<u>\$ 1,300</u>

Table 9.2 - Allowance for Credit Losses and Recorded Investment on Conventional Mortgage Loans by Impairment Methodology (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Allowance for credit losses:		
Collectively evaluated for impairment	\$ 927	\$ 1,190
Individually evaluated for impairment	—	—
Total allowance for credit losses	<u>\$ 927</u>	<u>\$ 1,190</u>
Recorded investment:		
Collectively evaluated for impairment	\$ 9,915,592	\$ 9,373,393
Individually evaluated for impairment	10,643	10,109
Total recorded investment	<u>\$ 9,926,235</u>	<u>\$ 9,383,502</u>

Credit Enhancements. The conventional mortgage loans under the MPP are supported by some combination of credit enhancements (primary mortgage insurance (PMI), supplemental mortgage insurance (SMI) and the Lender Risk Account (LRA), including pooled LRA for those members participating in an aggregated MPP pool). The amount of credit enhancements needed to protect the FHLB against credit losses is determined through use of a third-party default model. These credit enhancements apply after a homeowner's equity is exhausted. Beginning in February 2011, the FHLB discontinued the

use of SMI for all new loan purchases and replaced it with expanded use of the LRA. The LRA is funded by the FHLB as a portion of the purchase proceeds to cover expected losses. The LRA is recorded in other liabilities in the Statements of Condition. Excess funds over required balances are distributed to the member in accordance with a step-down schedule that is established upon execution of a Master Commitment Contract, subject to performance of the related loan pool. The LRA established for a pool of loans is limited to only covering losses of that specific pool of loans.

Table 9.3 - Changes in the LRA (in thousands)

	Nine Months Ended September 30, 2018
LRA at beginning of year	\$ 200,745
Additions	17,248
Claims	(400)
Scheduled distributions	(9,305)
LRA at end of period	<u>\$ 208,288</u>

Credit Quality Indicators. Key credit quality indicators for mortgage loans include the migration of past due loans, loans in process of foreclosure, and non-accrual loans. The table below summarizes the FHLB's key credit quality indicators for mortgage loans.

Table 9.4 - Recorded Investment in Delinquent Mortgage Loans (dollars in thousands)

	September 30, 2018		
	Conventional MPP Loans	FHA Loans	Total
Past due 30-59 days delinquent	\$ 30,046	\$ 14,470	\$ 44,516
Past due 60-89 days delinquent	5,428	4,379	9,807
Past due 90 days or more delinquent	13,519	8,878	22,397
Total past due	48,993	27,727	76,720
Total current mortgage loans	9,877,242	261,148	10,138,390
Total mortgage loans	\$ 9,926,235	\$ 288,875	\$ 10,215,110
Other delinquency statistics:			
In process of foreclosure, included above ⁽¹⁾	\$ 7,939	\$ 5,174	\$ 13,113
Serious delinquency rate ⁽²⁾	0.14%	3.07%	0.22%
Past due 90 days or more still accruing interest ⁽³⁾	\$ 12,282	\$ 8,878	\$ 21,160
Loans on non-accrual status, included above	\$ 2,605	\$ —	\$ 2,605
	December 31, 2017		
	Conventional MPP Loans	FHA Loans	Total
Past due 30-59 days delinquent	\$ 36,662	\$ 20,992	\$ 57,654
Past due 60-89 days delinquent	8,040	6,974	15,014
Past due 90 days or more delinquent	16,702	10,484	27,186
Total past due	61,404	38,450	99,854
Total current mortgage loans	9,322,098	291,371	9,613,469
Total mortgage loans	\$ 9,383,502	\$ 329,821	\$ 9,713,323
Other delinquency statistics:			
In process of foreclosure, included above ⁽¹⁾	\$ 10,039	\$ 4,767	\$ 14,806
Serious delinquency rate ⁽²⁾	0.19%	3.19%	0.29%
Past due 90 days or more still accruing interest ⁽³⁾	\$ 15,431	\$ 10,484	\$ 25,915
Loans on non-accrual status, included above	\$ 2,713	\$ —	\$ 2,713

(1) Includes loans where the decision of foreclosure or a similar alternative such as pursuit of deed-in-lieu has been reported. Loans in process of foreclosure are included in past due or current loans dependent on their delinquency status.

(2) Loans that are 90 days or more past due or in the process of foreclosure (including past due or current loans in the process of foreclosure) expressed as a percentage of the total loan portfolio class recorded investment amount.

(3) Each conventional loan past due 90 days or more still accruing interest is on a schedule/scheduled monthly settlement basis and contains one or more credit enhancements. Loans that are well secured and in the process of collection as a result of remaining credit enhancements and schedule/scheduled settlement are not placed on non-accrual status.

The FHLB did not have any real estate owned at September 30, 2018 or December 31, 2017.

Individually Evaluated Impaired Loans. Table 9.5 presents the recorded investment, unpaid principal balance, and related allowance associated with loans individually evaluated for impairment.

Table 9.5 - Individually Evaluated Impaired Loan Statistics by Product Class Level (in thousands)

	September 30, 2018			December 31, 2017		
	Recorded Investment	Unpaid Principal Balance	Related Allowance	Recorded Investment	Unpaid Principal Balance	Related Allowance
Conventional MPP loans						
With no related allowance	\$ 10,643	\$ 10,427	\$ —	\$ 10,109	\$ 9,912	\$ —
With an allowance	—	—	—	—	—	—
Total	\$ 10,643	\$ 10,427	\$ —	\$ 10,109	\$ 9,912	\$ —

Table 9.6 - Average Recorded Investment of Individually Evaluated Impaired Loans and Related Interest Income Recognized (in thousands)

	Three Months Ended September 30,			
	2018		2017	
	Average Recorded Investment	Interest Income Recognized	Average Recorded Investment	Interest Income Recognized
Individually impaired loans				
Conventional MPP Loans	\$ 10,649	\$ 121	\$ 9,771	\$ 114

	Nine Months Ended September 30,			
	2018		2017	
	Average Recorded Investment	Interest Income Recognized	Average Recorded Investment	Interest Income Recognized
Individually impaired loans				
Conventional MPP Loans	\$ 10,069	\$ 346	\$ 8,952	\$ 316

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. The FHLB's troubled debt restructurings primarily involve loans where an agreement permits the recapitalization of past due amounts up to the original loan amount and certain loans discharged in Chapter 7 bankruptcy. A loan considered a troubled debt restructuring is individually evaluated for impairment when determining its related allowance for credit losses. Credit loss is measured by estimating expected cash shortfalls incurred as of the reporting date.

The FHLB's recorded investment in modified loans considered troubled debt restructurings was (in thousands) \$10,643 and \$10,109 at September 30, 2018 and December 31, 2017, respectively. The amount of troubled debt restructurings is not considered material to the FHLB's financial condition, results of operations, or cash flows.

Note 10 - Derivatives and Hedging Activities

Nature of Business Activity

The FHLB is exposed to interest rate risk primarily from the effect of interest rate changes on its interest-earning assets and on the interest-bearing liabilities that finance these assets. The goal of the FHLB'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, the FHLB has established policies and procedures, which include guidelines on the amount of exposure to interest rate changes it is willing to accept. In addition, the FHLB monitors the risk to its interest income, net interest margin and average maturity of interest-earning assets and interest-bearing liabilities. The FHLB uses derivatives when they are considered to be the most cost-effective alternative to achieve the FHLB's financial and risk management objectives. See Note 11 - Derivatives and Hedging Activities in the FHLB's 2017 Annual Report on Form 10-K for additional information on the FHLB's derivative transactions.

The FHLB transacts its derivatives with large banks and major broker-dealers. Some of these banks and broker-dealers or their affiliates buy, sell, and distribute Consolidated Obligations. Derivative transactions may be either executed with a counterparty

(uncleared derivatives) or cleared through a Futures Commission Merchant (i.e., clearing agent) with a Derivative Clearing Organization (cleared derivatives). Once a derivative transaction has been accepted for clearing by a Derivative Clearing Organization (Clearinghouse), the executing counterparty is replaced with the Clearinghouse. The FHLB is not a derivative dealer and does not trade derivatives for short-term profit.

Financial Statement Effect and Additional Financial Information

The notional amount of derivatives serves as a factor in determining periodic interest payments or cash flows received and paid. The notional amount reflects the FHLB's involvement in the various classes of financial instruments and represents neither the actual amounts exchanged nor the overall exposure of the FHLB to credit and market risk; the overall risk is much smaller. The risks of derivatives only 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 summarizes the notional amount and fair value of derivative instruments and total derivative assets and liabilities. Total derivative assets and liabilities include the effect of netting adjustments and cash collateral. For purposes of this disclosure, the derivative values include the fair value of derivatives and the related accrued interest.

Table 10.1 - Fair Value of Derivative Instruments (in thousands)

	September 30, 2018		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as fair value hedging instruments:			
Interest rate swaps	\$ 5,995,311	\$ 2,031	\$ 6,853
Derivatives not designated as hedging instruments:			
Interest rate swaps	6,809,000	4,647	995
Interest rate swaptions	3,000,000	21,757	—
Forward rate agreements	266,000	1,051	1
Mortgage delivery commitments	298,138	52	1,138
Total derivatives not designated as hedging instruments	<u>10,373,138</u>	<u>27,507</u>	<u>2,134</u>
Total derivatives before adjustments	<u>\$ 16,368,449</u>	29,538	8,987
Netting adjustments and cash collateral ⁽¹⁾		35,996	(6,666)
Total derivative assets and total derivative liabilities		<u>\$ 65,534</u>	<u>\$ 2,321</u>
		December 31, 2017 ⁽²⁾	
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as fair value hedging instruments:			
Interest rate swaps	\$ 5,992,762	\$ 58,027	\$ 9,190
Derivatives not designated as hedging instruments:			
Interest rate swaps	5,789,265	2,639	363
Interest rate swaptions	2,316,000	3,171	—
Forward rate agreements	212,000	27	230
Mortgage delivery commitments	218,651	453	17
Total derivatives not designated as hedging instruments	<u>8,535,916</u>	<u>6,290</u>	<u>610</u>
Total derivatives before adjustments	<u>\$ 14,528,678</u>	64,317	9,800
Netting adjustments and cash collateral ⁽¹⁾		(3,622)	(6,907)
Total derivative assets and total derivative liabilities		<u>\$ 60,695</u>	<u>\$ 2,893</u>

(1) Amounts represent the application of the netting requirements that allow the FHLB to settle positive and negative positions, and also cash collateral and related accrued interest held or placed by the FHLB with the same clearing agent and/or counterparty. Cash collateral posted and related accrued interest was (in thousands) \$66,026 and \$64,079 at September 30, 2018 and December 31, 2017. Cash collateral received and related accrued interest was (in thousands) \$23,364 and \$60,794 at September 30, 2018 and December 31, 2017.

(2) To conform with current presentation, (in thousands) \$74,431 in variation margin has been allocated to the individual derivative instruments as of December 31, 2017. Previously, this amount was included with Netting adjustments and cash collateral.

Table 10.2 presents the components of net losses on derivatives and hedging activities as presented in the Statements of Income.

Table 10.2 - Net Losses on Derivatives and Hedging Activities (in thousands)

	Three Months Ended September 30,	
	2018	2017
Derivatives and hedged items in fair value hedging relationships:		
Interest rate swaps	\$ (692)	\$ 86
Derivatives not designated as hedging instruments:		
Economic hedges:		
Interest rate swaps	10,128	(621)
Interest rate swaptions	(745)	(3,579)
Forward rate agreements	1,833	(2,581)
Net interest settlements	(16,695)	(3,338)
Mortgage delivery commitments	(2,520)	3,212
Total net losses related to derivatives not designated as hedging instruments	(7,999)	(6,907)
Other ⁽¹⁾	(113)	136
Net losses on derivatives and hedging activities	<u>\$ (8,804)</u>	<u>\$ (6,685)</u>

	Nine Months Ended September 30,	
	2018	2017
Derivatives and hedged items in fair value hedging relationships:		
Interest rate swaps	\$ 1,870	\$ 226
Derivatives not designated as hedging instruments:		
Economic hedges:		
Interest rate swaps	(8,845)	12,212
Interest rate swaptions	4	(13,948)
Forward rate agreements	6,317	(6,094)
Net interest settlements	(38,876)	(4,421)
Mortgage delivery commitments	(7,105)	10,089
Total net losses related to derivatives not designated as hedging instruments	(48,505)	(2,162)
Other ⁽¹⁾	(134)	395
Net losses on derivatives and hedging activities	<u>\$ (46,769)</u>	<u>\$ (1,541)</u>

(1) Consists 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 impact of those derivatives on the FHLB's net interest income.

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

	Three Months Ended September 30,			
	Gain/(Loss) on Derivative	Gain/(Loss) on Hedged Item	Net Fair Value Hedge Ineffectiveness	Effect of Derivatives on Net Interest Income ⁽¹⁾
2018				
Hedged Item Type:				
Advances	\$ 8,005	\$ (8,799)	\$ (794)	\$ 7,643
Consolidated Bonds	301	(213)	88	(510)
Available-for-sale securities	104	(90)	14	(4)
Total	<u>\$ 8,410</u>	<u>\$ (9,102)</u>	<u>\$ (692)</u>	<u>\$ 7,129</u>
2017				
Hedged Item Type:				
Advances	\$ 7,664	\$ (7,596)	\$ 68	\$ (3,575)
Consolidated Bonds	559	(541)	18	(604)
Total	<u>\$ 8,223</u>	<u>\$ (8,137)</u>	<u>\$ 86</u>	<u>\$ (4,179)</u>
Nine Months Ended September 30,				
	Gain/(Loss) on Derivative	Gain/(Loss) on Hedged Item	Net Fair Value Hedge Ineffectiveness	Effect of Derivatives on Net Interest Income ⁽¹⁾
2018				
Hedged Item Type:				
Advances	\$ 58,315	\$ (56,368)	\$ 1,947	\$ 15,077
Consolidated Bonds	1,166	(1,257)	(91)	(3,360)
Available-for-sale securities	104	(90)	14	(4)
Total	<u>\$ 59,585</u>	<u>\$ (57,715)</u>	<u>\$ 1,870</u>	<u>\$ 11,713</u>
2017				
Hedged Item Type:				
Advances	\$ 7,365	\$ (7,486)	\$ (121)	\$ (15,020)
Consolidated Bonds	295	52	347	(338)
Total	<u>\$ 7,660</u>	<u>\$ (7,434)</u>	<u>\$ 226</u>	<u>\$ (15,358)</u>

- (1) For fair value hedge relationships, the net effect of derivatives 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 (in thousands) \$(140) and \$(497) of (amortization)/accretion related to fair value hedging activities for the three months ended September 30, 2018 and 2017 and (in thousands) \$(463) and \$(1,784) for the nine months ended September 30, 2018 and 2017.

Credit Risk on Derivatives

The FHLB 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 Finance Agency regulations.

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. The FHLB requires collateral agreements on its uncleared derivatives.

For cleared derivatives, the Clearinghouse is the FHLB's counterparty. The Clearinghouse notifies the clearing agent of the required initial and variation margin and the clearing agent in turn notifies the FHLB. The FHLB utilizes two Clearinghouses

for all cleared derivative transactions, LCH Ltd. and CME Clearing. Effective January 16, 2018, LCH Ltd. made certain amendments to its rulebook changing the legal characterization of variation margin payments to be daily settlement payments, rather than collateral. CME Clearing made the same change to its rulebook on January 3, 2017. As a result, at both Clearinghouses, variation margin is characterized as daily settlement payments, rather than cash collateral. At both Clearinghouses, initial margin continues to be considered collateral. The requirement that the FHLB post initial and variation margin through the clearing agent, to the Clearinghouse, exposes the FHLB 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 value of cleared derivatives is posted daily through a clearing agent.

Certain of the FHLB's uncleared derivative contracts contain credit-risk-related contingent features that require the FHLB to post additional collateral with its counterparties if there is deterioration in the FHLB's credit ratings. The aggregate fair value of such uncleared derivatives in a net liability position (before cash collateral and related accrued interest) at September 30, 2018 was (in thousands) \$336, for which the FHLB was not required to post any collateral. If the FHLB's credit ratings had been lowered to the next lower rating, the FHLB would not have been required to deliver any additional collateral at September 30, 2018.

For cleared derivatives, 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. At September 30, 2018, the FHLB was not required to post additional initial margin by its clearing agents based on credit considerations.

Offsetting of Derivative Assets and Derivative Liabilities

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

The FHLB 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 bankruptcy, insolvency, or similar proceeding involving the Clearinghouse or the FHLB's clearing agent, or both. Based on this analysis, the FHLB presents a net derivative receivable or payable for all of its transactions through a particular clearing agent with a particular Clearinghouse.

Table 10.4 presents separately the fair value of derivative instruments meeting or not meeting netting requirements, including the related collateral received from or pledged to counterparties. At September 30, 2018 and December 31, 2017, the FHLB did not receive or pledge any non-cash collateral. Any over-collateralization under an individual clearing agent and/or counterparty level is not included in the determination of the net unsecured amount.

Table 10.4 - Offsetting of Derivative Assets and Derivative Liabilities (in thousands)

September 30, 2018					
Derivative Instruments Meeting Netting Requirements					
	Amount Recognized	Gross Amount of Netting Adjustments and Cash Collateral	Derivative Instruments Not Meeting Netting Requirements⁽¹⁾	Total Derivative Assets and Total Derivative Liabilities	
Derivative Assets:					
Uncleared	\$ 26,641	\$ (26,609)	\$ 1,103	\$	1,135
Cleared	1,794	62,605	—	\$	64,399
Total				\$	65,534
Derivative Liabilities:					
Uncleared	\$ 5,028	\$ (3,846)	\$ 1,139	\$	2,321
Cleared	2,820	(2,820)	—	\$	—
Total				\$	2,321
December 31, 2017⁽²⁾					
Derivative Instruments Meeting Netting Requirements					
	Amount Recognized	Gross Amount of Netting Adjustments and Cash Collateral	Derivative Instruments Not Meeting Netting Requirements⁽¹⁾	Total Derivative Assets and Total Derivative Liabilities	
Derivative Assets:					
Uncleared	\$ 5,239	\$ (5,215)	\$ 480	\$	504
Cleared	58,598	1,593	—	\$	60,191
Total				\$	60,695
Derivative Liabilities:					
Uncleared	\$ 8,773	\$ (6,127)	\$ 247	\$	2,893
Cleared	780	(780)	—	\$	—
Total				\$	2,893

(1) Represents mortgage delivery commitments and forward rate agreements that are not subject to an enforceable netting agreement.

(2) To conform with current presentation, (in thousands) \$74,431 in variation margin has been allocated to the individual derivative instruments with the Amount Recognized as of December 31, 2017. Previously, this amount was included with Gross Amount of Netting Adjustments and Cash Collateral.

Note 11 - Deposits
Table 11.1 - Deposits (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Interest bearing:		
Demand and overnight	\$ 1,710,134	\$ 590,617
Term	55,600	52,600
Other	3,366	5,509
Total interest bearing	<u>1,769,100</u>	<u>648,726</u>
Non-interest bearing:		
Other	5,042	1,805
Total non-interest bearing	<u>5,042</u>	<u>1,805</u>
Total deposits	<u>\$ 1,774,142</u>	<u>\$ 650,531</u>

The average interest rates paid on interest bearing deposits were 1.73 percent and 0.82 percent in the three months ended September 30, 2018 and 2017, respectively, and 1.51 percent and 0.59 percent in the nine months ended September 30, 2018 and 2017, respectively.

Note 12 - Consolidated Obligations
Table 12.1 - Consolidated Discount Notes Outstanding (dollars in thousands)

	<u>Book Value</u>	<u>Principal Amount</u>	<u>Weighted Average Interest Rate ⁽¹⁾</u>
September 30, 2018	\$ 45,312,843	\$ 45,415,629	2.08%
December 31, 2017	<u>\$ 46,210,458</u>	<u>\$ 46,258,644</u>	<u>1.23%</u>

(1) Represents an implied rate without consideration of concessions.

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

<u>Year of Contractual Maturity</u>	<u>September 30, 2018</u>		<u>December 31, 2017</u>	
	<u>Amount</u>	<u>Weighted Average Interest Rate</u>	<u>Amount</u>	<u>Weighted Average Interest Rate</u>
Due in 1 year or less	\$ 23,220,800	1.80%	\$ 28,940,265	1.34%
Due after 1 year through 2 years	6,780,065	2.05	5,841,800	1.74
Due after 2 years through 3 years	5,967,500	1.96	4,770,565	1.89
Due after 3 years through 4 years	3,499,215	2.30	6,017,000	1.92
Due after 4 years through 5 years	2,197,480	2.48	2,244,620	2.24
Thereafter	5,254,195	2.85	6,343,055	2.72
Total principal amount	<u>46,919,255</u>	2.04	<u>54,157,305</u>	1.69
Premiums	78,622		86,521	
Discounts	(28,004)		(30,669)	
Hedging adjustments	(1,889)		(3,146)	
Fair value option valuation adjustment and accrued interest	(54,799)		(46,950)	
Total	<u>\$ 46,913,185</u>		<u>\$ 54,163,061</u>	

Table 12.3 - Consolidated Bonds Outstanding by Call Features (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Principal Amount of Consolidated Bonds:		
Non-callable	\$ 39,846,255	\$ 47,155,305
Callable	7,073,000	7,002,000
Total principal amount	<u>\$ 46,919,255</u>	<u>\$ 54,157,305</u>

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

<u>Year of Contractual Maturity or Next Call Date</u>	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Due in 1 year or less	\$ 29,026,800	\$ 35,029,265
Due after 1 year through 2 years	5,742,065	5,369,800
Due after 2 years through 3 years	4,402,500	3,715,565
Due after 3 years through 4 years	2,926,215	4,388,000
Due after 4 years through 5 years	1,524,480	1,823,620
Thereafter	3,297,195	3,831,055
Total principal amount	<u>\$ 46,919,255</u>	<u>\$ 54,157,305</u>

Table 12.5 - Consolidated Bonds by Interest-rate Payment Type (in thousands)

	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Principal Amount of Consolidated Bonds:		
Fixed-rate	\$ 32,414,255	\$ 33,252,305
Variable-rate	14,245,000	20,895,000
Step-up	260,000	10,000
Total principal amount	<u>\$ 46,919,255</u>	<u>\$ 54,157,305</u>

Note 13 - Affordable Housing Program (AHP)

The FHLBank Act requires each FHLBank to establish an AHP. Each FHLBank provides subsidies in the form of direct grants and below-market interest rate AHP Advances to members who use the funds to assist in the purchase, construction, or rehabilitation of housing for very low-, low-, and moderate-income households. Annually, the FHLBanks must set aside for the AHP the greater of \$100 million or 10 percent of net earnings. For purposes of the AHP calculation, net earnings is defined as net income before assessments, plus interest expense related to mandatorily redeemable capital stock. The FHLB accrues AHP expense monthly based on its net earnings. The FHLB reduces the AHP liability as members use subsidies.

Table 13.1 - Analysis of AHP Liability (in thousands)

Balance at December 31, 2017	\$ 109,877
Assessments (current year additions)	28,936
Subsidy uses, net	(25,365)
Balance at September 30, 2018	<u>\$ 113,448</u>

Note 14 - Capital
Table 14.1 - Capital Requirements (dollars in thousands)

	September 30, 2018		December 31, 2017	
	Minimum Requirement	Actual	Minimum Requirement	Actual
Risk-based capital	\$ 924,449	\$ 5,271,780	\$ 886,033	\$ 5,211,204
Capital-to-assets ratio (regulatory)	4.00%	5.28%	4.00%	4.88%
Regulatory capital	\$ 3,991,826	\$ 5,271,780	\$ 4,275,809	\$ 5,211,204
Leverage capital-to-assets ratio (regulatory)	5.00%	7.92%	5.00%	7.31%
Leverage capital	\$ 4,989,782	\$ 7,907,670	\$ 5,344,761	\$ 7,816,806

Restricted Retained Earnings. At September 30, 2018 and December 31, 2017 the FHLB had (in thousands) \$374,842 and \$322,999 in restricted retained earnings. These restricted retained earnings are not available to pay dividends but are available to absorb unexpected losses, if any, that the FHLB may experience.

Table 14.2 - Mandatorily Redeemable Capital Stock Roll Forward (in thousands)

Balance, December 31, 2017	\$ 30,031
Capital stock subject to mandatory redemption reclassified from equity	11,048
Capital stock previously subject to mandatory redemption reclassified to capital	(5,599)
Repurchase/redemption of mandatorily redeemable capital stock	(13,106)
Balance, September 30, 2018	<u>\$ 22,374</u>

Table 14.3 - Mandatorily Redeemable Capital Stock by Contractual Year of Redemption (in thousands)

<u>Contractual Year of Redemption</u>	<u>September 30, 2018</u>	<u>December 31, 2017</u>
Year 1	\$ 1,642	\$ 20
Year 2	351	1,811
Year 3	220	439
Year 4	1,532	2,912
Year 5	1,842	5,257
Thereafter ⁽¹⁾	624	610
Past contractual redemption date due to remaining activity ⁽²⁾	16,163	18,982
Total	<u>\$ 22,374</u>	<u>\$ 30,031</u>

(1) Represents mandatorily redeemable capital stock resulting from a Finance Agency rule effective February 2016, that made captive insurance companies ineligible for FHLB membership. Captive insurance companies that were admitted as FHLB members prior to September 12, 2014, will have their membership terminated no later than February 19, 2021. Captive insurance companies that were admitted as FHLB members on or after September 12, 2014, had their membership 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.

Note 15 - Accumulated Other Comprehensive Income (Loss)

The following tables summarize the changes in accumulated other comprehensive income (loss) for the three and nine months ended September 30, 2018 and 2017.

Table 15.1 - Accumulated Other Comprehensive Income (Loss) (in thousands)

	Net unrealized gains (losses) on available-for-sale securities	Pension and postretirement benefits	Total accumulated other comprehensive (loss) income
BALANCE, JUNE 30, 2017	\$ 4	\$ (12,426)	\$ (12,422)
Other comprehensive income before reclassification:			
Net unrealized gains	13	—	13
Reclassifications from other comprehensive income to net income:			
Amortization - pension and postretirement benefits	—	427	427
Net current period other comprehensive income	13	427	440
BALANCE, SEPTEMBER 30, 2017	<u>\$ 17</u>	<u>\$ (11,999)</u>	<u>\$ (11,982)</u>
<hr/>			
BALANCE, JUNE 30, 2018	\$ 220	\$ (15,563)	\$ (15,343)
Other comprehensive income before reclassification:			
Net unrealized losses	(101)	—	(101)
Reclassifications from other comprehensive income to net income:			
Amortization - pension and postretirement benefits	—	677	677
Net current period other comprehensive (loss) income	(101)	677	576
BALANCE, SEPTEMBER 30, 2018	<u>\$ 119</u>	<u>\$ (14,886)</u>	<u>\$ (14,767)</u>
<hr/>			
	Net unrealized gains (losses) on available-for-sale securities	Pension and postretirement benefits	Total accumulated other comprehensive (loss) income
BALANCE, DECEMBER 31, 2016	\$ 23	\$ (13,279)	\$ (13,256)
Other comprehensive income before reclassification:			
Net unrealized losses	(6)	—	(6)
Reclassifications from other comprehensive income to net income:			
Amortization - pension and postretirement benefits	—	1,280	1,280
Net current period other comprehensive (loss) income	(6)	1,280	1,274
BALANCE, SEPTEMBER 30, 2017	<u>\$ 17</u>	<u>\$ (11,999)</u>	<u>\$ (11,982)</u>
<hr/>			
BALANCE, DECEMBER 31, 2017	\$ (124)	\$ (16,536)	\$ (16,660)
Other comprehensive income before reclassification:			
Net unrealized gains	243	—	243
Reclassifications from other comprehensive income to net income:			
Amortization - pension and postretirement benefits	—	1,650	1,650
Net current period other comprehensive income	243	1,650	1,893
BALANCE, SEPTEMBER 30, 2018	<u>\$ 119</u>	<u>\$ (14,886)</u>	<u>\$ (14,767)</u>

Note 16 - Pension and Postretirement Benefit Plans

Qualified Defined Benefit Multi-employer Plan. The FHLB participates in the Pentegra Defined Benefit Plan for Financial Institutions (Pentegra Defined Benefit Plan), a tax-qualified defined benefit pension plan. Under the Pentegra Defined Benefit Plan, contributions made by one participating employer may be used to provide benefits to employees of other participating employers because assets contributed by an employer are not segregated in a separate account or restricted to provide benefits only to employees of that employer. Also, in the event a participating employer is unable to meet its contribution requirements, the required contributions for the other participating employers could increase proportionately. The Pentegra Defined Benefit Plan covers all officers and employees of the FHLB who meet certain eligibility requirements. Contributions to the Pentegra Defined Benefit Plan charged to compensation and benefit expense were \$1,250,000 and \$2,750,000 in the three months ended September 30, 2018 and 2017, respectively, and \$6,301,000 and \$6,039,000 in the nine months ended September 30, 2018 and 2017, respectively.

Qualified Defined Contribution Plan. The FHLB also participates in the Pentegra Defined Contribution Plan for Financial Institutions, a tax-qualified, defined contribution pension plan. The FHLB contributes a percentage of the participants' compensation by making a matching contribution equal to a percentage of voluntary employee contributions, subject to certain limitations. The FHLB contributed \$240,000 and \$225,000 in the three months ended September 30, 2018 and 2017, respectively, and \$1,007,000 and \$946,000 in the nine months ended September 30, 2018 and 2017, respectively.

Nonqualified Supplemental Defined Benefit Retirement Plan (Defined Benefit Retirement Plan). The FHLB maintains a nonqualified, unfunded defined benefit plan. The plan ensures that participants receive the full amount of benefits to which they would have been entitled under the qualified defined benefit plan in the absence of limits on benefit levels imposed by the IRS. There are no funded plan assets. The FHLB has established a grantor trust, which is included in held-to-maturity securities on the Statements of Condition, to meet future benefit obligations and current payments to beneficiaries.

Postretirement Benefits Plan. The FHLB also sponsors a Postretirement Benefits Plan that includes health care and life insurance benefits for eligible retirees. Future retirees are eligible for the postretirement benefits plan if they were hired prior to August 1, 1990, are age 55 or older, and their age plus years of continuous service at retirement are greater than or equal to 80. Spouses are covered subject to required contributions. There are no funded plan assets that have been designated to provide postretirement benefits.

Table 16.1 - Net Periodic Benefit Cost (in thousands)

	Three Months Ended September 30,			
	Defined Benefit Retirement Plan		Postretirement Benefits Plan	
	2018	2017	2018	2017
<u>Net Periodic Benefit Cost</u>				
Service cost	\$ 294	\$ 220	\$ 6	\$ 7
Interest cost	352	342	41	50
Amortization of net loss	677	426	—	1
Net periodic benefit cost	<u>\$ 1,323</u>	<u>\$ 988</u>	<u>\$ 47</u>	<u>\$ 58</u>
	Nine Months Ended September 30,			
	Defined Benefit Retirement Plan		Postretirement Benefits Plan	
	2018	2017	2018	2017
<u>Net Periodic Benefit Cost</u>				
Service cost	\$ 847	\$ 661	\$ 15	\$ 21
Interest cost	1,015	1,026	124	148
Amortization of net loss	1,650	1,276	—	4
Net periodic benefit cost	<u>\$ 3,512</u>	<u>\$ 2,963</u>	<u>\$ 139</u>	<u>\$ 173</u>

For the Defined Benefit Retirement Plan and the Postretirement Benefits Plan, the related service cost is recorded as part of Non-Interest Expense - Compensation and Benefits on the Statements of Income. The non-service related components of interest cost and amortization of net loss are recorded as Non-Interest Expense - Other in the Statements of Income.

Note 17 - Segment Information

The FHLB has identified two primary operating segments based on its method of internal reporting: Traditional Member Finance and the MPP. These segments reflect the FHLB's two primary Mission Asset Activities and the manner in which they are managed from the perspective of development, resource allocation, product delivery, pricing, credit risk and operational administration. The segments identify the principal ways the FHLB provides services to member stockholders.

Table 17.1 - Financial Performance by Operating Segment (in thousands)

	Three Months Ended September 30,		
	Traditional Member Finance	MPP	Total
<u>2018</u>			
Net interest income after provision for credit losses	\$ 102,279	\$ 27,881	\$ 130,160
Non-interest income (loss)	(7,805)	(1,118)	(8,923)
Non-interest expense	16,957	2,451	19,408
Income before assessments	77,517	24,312	101,829
Affordable Housing Program assessments	7,793	2,431	10,224
Net income	<u>\$ 69,724</u>	<u>\$ 21,881</u>	<u>\$ 91,605</u>
<u>2017</u>			
Net interest income	\$ 86,617	\$ 23,781	\$ 110,398
Provision for credit losses	—	500	500
Net interest income after provision for credit losses	86,617	23,281	109,898
Non-interest income (loss)	(1,988)	(1,222)	(3,210)
Non-interest expense	17,370	2,860	20,230
Income before assessments	67,259	19,199	86,458
Affordable Housing Program assessments	6,821	1,920	8,741
Net income	<u>\$ 60,438</u>	<u>\$ 17,279</u>	<u>\$ 77,717</u>
<u>Nine Months Ended September 30,</u>			
	Traditional Member Finance	MPP	Total
<u>2018</u>			
Net interest income after provision for credit losses	\$ 299,006	\$ 78,405	\$ 377,411
Non-interest income (loss)	(24,732)	(857)	(25,589)
Non-interest expense	55,202	8,471	63,673
Income before assessments	219,072	69,077	288,149
Affordable Housing Program assessments	22,028	6,908	28,936
Net income	<u>\$ 197,044</u>	<u>\$ 62,169</u>	<u>\$ 259,213</u>
<u>2017</u>			
Net interest income	\$ 248,607	\$ 70,832	\$ 319,439
Provision for credit losses	—	500	500
Net interest income after provision for credit losses	248,607	70,332	318,939
Non-interest income (loss)	(914)	(2,953)	(3,867)
Non-interest expense	51,490	8,346	59,836
Income before assessments	196,203	59,033	255,236
Affordable Housing Program assessments	19,823	5,904	25,727
Net income	<u>\$ 176,380</u>	<u>\$ 53,129</u>	<u>\$ 229,509</u>

Table 17.2 - Asset Balances by Operating Segment (in thousands)

	Assets		
	Traditional Member Finance	MPP	Total
September 30, 2018	\$ 87,495,329	\$ 12,300,316	\$ 99,795,645
December 31, 2017	95,525,754	11,369,460	106,895,214

Note 18 - Fair Value Disclosures

The fair value amounts recorded on the Statements of Condition and presented in the related note disclosures have been determined by the FHLB using available market information and the FHLB's best judgment of appropriate valuation methods. GAAP defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (i.e., an exit price). The fair values reflect the FHLB's judgment of how a market participant would estimate the fair values.

Fair Value Hierarchy. GAAP establishes a fair value hierarchy and requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The inputs are evaluated and an overall level for the measurement is determined. This overall level is an indication of how market observable the fair value measurement is. 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 (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.

The FHLB reviews the fair value hierarchy classifications on a quarterly basis. Changes in the observability of the valuation inputs may result in a reclassification of certain financial assets or liabilities. Such reclassifications are reported as transfers in/out at fair value as of the beginning of the quarter in which the changes occur. The FHLB did not have any transfers of assets or liabilities recorded at fair value on a recurring basis during the nine months ended September 30, 2018 or 2017.

Table 18.1 presents the carrying value, fair value, and fair value hierarchy of financial assets and liabilities of the FHLB. The FHLB records trading securities, available-for-sale securities, derivative assets, derivative liabilities, certain Advances and certain Consolidated Obligation Bonds at fair value on a recurring basis, and on occasion, certain mortgage loans held for portfolio on a nonrecurring basis. The FHLB records all other financial assets and liabilities at amortized cost. Refer to Table 18.2 for further details about the financial assets and liabilities held at fair value on either a recurring or nonrecurring basis.

Table 18.1 - Fair Value Summary (in thousands)

Financial Instruments	September 30, 2018					
	Carrying Value	Total	Level 1	Level 2	Level 3	Netting Adjustments and Cash Collateral ⁽¹⁾
Assets:						
Cash and due from banks	\$ 12,608	\$ 12,608	\$ 12,608	\$ —	\$ —	\$ —
Interest-bearing deposits	158	158	—	158	—	—
Securities purchased under agreements to resell	4,491,429	4,491,472	—	4,491,472	—	—
Federal funds sold	8,910,000	8,910,000	—	8,910,000	—	—
Trading securities	83,404	83,404	—	83,404	—	—
Available-for-sale securities	2,074,028	2,074,028	—	2,074,028	—	—
Held-to-maturity securities	16,021,037	15,710,068	—	15,710,068	—	—
Advances ⁽²⁾	57,770,483	57,680,045	—	57,680,045	—	—
Mortgage loans held for portfolio, net	10,181,158	9,856,989	—	9,843,638	13,351	—
Accrued interest receivable	171,966	171,966	—	171,966	—	—
Derivative assets	65,534	65,534	—	29,538	—	35,996
Liabilities:						
Deposits	1,774,142	1,773,999	—	1,773,999	—	—
Consolidated Obligations:						
Discount Notes	45,312,843	45,312,679	—	45,312,679	—	—
Bonds ⁽³⁾	46,913,185	46,341,708	—	46,341,708	—	—
Mandatorily redeemable capital stock	22,374	22,374	22,374	—	—	—
Accrued interest payable	142,308	142,308	—	142,308	—	—
Derivative liabilities	2,321	2,321	—	8,987	—	(6,666)
Other:						
Standby bond purchase agreements	—	438	—	438	—	—

(1) Amounts represent the application of the netting requirements that allow the FHLB to settle positive and negative positions and also cash collateral and related accrued interest held or placed by the FHLB with the same counterparty.

(2) Includes (in thousands) \$9,936 of Advances recorded under the fair value option at September 30, 2018.

(3) Includes (in thousands) \$6,497,201 of Consolidated Obligation Bonds recorded under the fair value option at September 30, 2018.

December 31, 2017

Financial Instruments	Carrying Value	Fair Value				Netting Adjustments and Cash Collateral⁽¹⁾⁽²⁾
		Total	Level 1	Level 2	Level 3	
Assets:						
Cash and due from banks	\$ 26,550	\$ 26,550	\$ 26,550	\$ —	\$ —	\$ —
Interest-bearing deposits	140	140	—	140	—	—
Securities purchased under agreements to resell	7,701,929	7,701,934	—	7,701,934	—	—
Federal funds sold	3,650,000	3,650,000	—	3,650,000	—	—
Trading securities	781	781	—	781	—	—
Available-for-sale securities	899,876	899,876	—	899,876	—	—
Held-to-maturity securities	14,804,970	14,682,329	—	14,682,329	—	—
Advances ⁽³⁾	69,918,224	69,894,641	—	69,894,641	—	—
Mortgage loans held for portfolio, net	9,680,940	9,731,947	—	9,714,802	17,145	—
Accrued interest receivable	128,561	128,561	—	128,561	—	—
Derivative assets	60,695	60,695	—	64,317	—	(3,622)
Liabilities:						
Deposits	650,531	650,422	—	650,422	—	—
Consolidated Obligations:						
Discount Notes	46,210,458	46,209,716	—	46,209,716	—	—
Bonds ⁽⁴⁾	54,163,061	54,095,627	—	54,095,627	—	—
Mandatorily redeemable capital stock	30,031	30,031	30,031	—	—	—
Accrued interest payable	128,652	128,652	—	128,652	—	—
Derivative liabilities	2,893	2,893	—	9,800	—	(6,907)
Other:						
Commitments to extend credit for Advances	—	4	—	4	—	—
Standby bond purchase agreements	—	354	—	354	—	—

(1) Amounts represent the application of the netting requirements that allow the FHLB to settle positive and negative positions and also cash collateral and related accrued interest held or placed by the FHLB with the same counterparty.

(2) To conform with current presentation, (in thousands) \$74,431 in variation margin has been allocated to the individual derivative instrument as of December 31, 2017. Previously, this amount was included with Netting Adjustments and Cash Collateral.

(3) Includes (in thousands) \$15,013 of Advances recorded under the fair value option at December 31, 2017.

(4) Includes (in thousands) \$5,577,315 of Consolidated Obligation Bonds recorded under the fair value option at December 31, 2017.

Summary of Valuation Methodologies and Primary Inputs.

A description of the valuation methodologies and primary inputs used to develop the measurement of fair value for assets and liabilities that are measured at fair value on a recurring or nonrecurring basis in the Statement of Condition are disclosed in Note 19 - Fair Value Disclosures in the FHLB's 2017 Annual Report on Form 10-K. There have been no changes in the valuation methodologies during 2018.

Fair Value Measurements.

Table 18.2 presents the fair value of financial assets and liabilities that are recorded on a recurring or nonrecurring basis at September 30, 2018 and December 31, 2017, by level within the fair value hierarchy. The FHLB records nonrecurring fair value adjustments to reflect partial write-downs on certain mortgage loans.

Table 18.2 - Fair Value Measurements (in thousands)

	Fair Value Measurements at September 30, 2018				Netting Adjustments and Cash Collateral ⁽¹⁾
	Total	Level 1	Level 2	Level 3	
Recurring fair value measurements - Assets					
Trading securities:					
GSE obligations	\$ 82,753	\$ —	\$ 82,753	\$ —	\$ —
U.S. obligation single-family MBS	651	—	651	—	—
Total trading securities	83,404	—	83,404	—	—
Available-for-sale securities:					
Certificates of deposit	2,049,980	—	2,049,980	—	—
GSE obligations	24,048	—	24,048	—	—
Total available-for-sale securities	2,074,028	—	2,074,028	—	—
Advances	9,936	—	9,936	—	—
Derivative assets:					
Interest rate related	64,431	—	28,435	—	35,996
Forward rate agreements	1,051	—	1,051	—	—
Mortgage delivery commitments	52	—	52	—	—
Total derivative assets	65,534	—	29,538	—	35,996
Total assets at fair value	\$ 2,232,902	\$ —	\$ 2,196,906	\$ —	\$ 35,996
Recurring fair value measurements - Liabilities					
Consolidated Obligation Bonds	\$ 6,497,201	\$ —	\$ 6,497,201	\$ —	\$ —
Derivative liabilities:					
Interest rate related	1,182	—	7,848	—	(6,666)
Forward rate agreement	1	—	1	—	—
Mortgage delivery commitments	1,138	—	1,138	—	—
Total derivative liabilities	2,321	—	8,987	—	(6,666)
Total liabilities at fair value	\$ 6,499,522	\$ —	\$ 6,506,188	\$ —	\$ (6,666)
Nonrecurring fair value measurements - Assets ⁽²⁾					
Mortgage loans held for portfolio	\$ 320	\$ —	\$ —	\$ 320	

(1) Amounts represent the application of the netting requirements that allow the FHLB to settle positive and negative positions and also cash collateral and related accrued interest held or placed by the FHLB with the same counterparty.

(2) The fair value information presented is as of the date the fair value adjustment was recorded during the nine months ended September 30, 2018.

Fair Value Measurements at December 31, 2017

	Total	Level 1	Level 2	Level 3	Netting Adjustments and Cash Collateral⁽¹⁾⁽²⁾
Recurring fair value measurements - Assets					
Trading securities:					
U.S. obligation single-family MBS	\$ 781	\$ —	\$ 781	\$ —	\$ —
Available-for-sale securities:					
Certificates of deposit	899,876	—	899,876	—	—
Advances	15,013	—	15,013	—	—
Derivative assets:					
Interest rate related	60,215	—	63,837	—	(3,622)
Forward rate agreements	27	—	27	—	—
Mortgage delivery commitments	453	—	453	—	—
Total derivative assets	60,695	—	64,317	—	(3,622)
Total assets at fair value	<u>\$ 976,365</u>	<u>\$ —</u>	<u>\$ 979,987</u>	<u>\$ —</u>	<u>\$ (3,622)</u>
Recurring fair value measurements - Liabilities					
Consolidated Obligation Bonds	\$ 5,577,315	\$ —	\$ 5,577,315	\$ —	\$ —
Derivative liabilities:					
Interest rate related	2,646	—	9,553	—	(6,907)
Forward rate agreements	230	—	230	—	—
Mortgage delivery commitments	17	—	17	—	—
Total derivative liabilities	2,893	—	9,800	—	(6,907)
Total liabilities at fair value	<u>\$ 5,580,208</u>	<u>\$ —</u>	<u>\$ 5,587,115</u>	<u>\$ —</u>	<u>\$ (6,907)</u>
Nonrecurring fair value measurements - Assets⁽³⁾					
Mortgage loans held for portfolio	\$ 598	\$ —	\$ —	\$ 598	

(1) Amounts represent the application of the netting requirements that allow the FHLB to settle positive and negative positions and also cash collateral and related accrued interest held or placed by the FHLB with the same counterparty.

(2) To conform with current presentation, (in thousands) \$74,431 in variation margin has been allocated to the individual derivative instrument as of December 31, 2017. Previously, this amount was included with Netting Adjustments and Cash Collateral.

(3) The fair value information presented is as of the date the fair value adjustment was recorded during the year ended December 31, 2017.

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 a company to display the fair value of those assets and liabilities for which it has chosen to use fair value on the face of the Statements 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. If elected, interest income and interest expense on Advances and Consolidated Bonds carried at fair value are recognized based solely on the contractual amount of interest due or unpaid. Any transaction fees or costs are immediately recognized into other non-interest income or other non-interest expense.

The FHLB has elected the fair value option for certain financial instruments that either do 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 from economic hedging relationships in which the carrying value of the hedged item is not adjusted for changes in fair value.

Table 18.3 presents net (losses) gains recognized in earnings related to financial assets and liabilities in which the fair value option was elected during the three and nine months ended September 30, 2018 and 2017.

Table 18.3 – Fair Value Option - Financial Assets and Liabilities (in thousands)

Net (Losses) Gains from Changes in Fair Value Recognized in Earnings	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Advances	\$ (46)	\$ (12)	\$ (76)	\$ (41)
Consolidated Bonds	(3,561)	99	12,300	(12,330)
Total net (losses) gains	<u>\$ (3,607)</u>	<u>\$ 87</u>	<u>\$ 12,224</u>	<u>\$ (12,371)</u>

For instruments recorded under the fair value option, the related contractual interest income and contractual interest expense are recorded as part of net interest income on the Statements of Income. The remaining changes in fair value for instruments in which the fair value option has been elected are recorded as “Net (losses) gains on financial instruments held under fair value option” in the Statements of Income, except for changes in fair value related to instrument specific credit risk, which are recorded in accumulated other comprehensive income in the Statement of Condition. The FHLB has determined that none of the remaining changes in fair value were related to instrument-specific credit risk for the nine months ended September 30, 2018 or 2017. In determining that there has been no change in instrument-specific credit risk period to period, the FHLB primarily considered the following factors:

- The FHLB is a federally chartered GSE, and as a result of this status, the FHLB’s Consolidated Obligations have historically received the same credit ratings as the government bond credit rating of the United States, even though they are not Obligations of the United States and are not guaranteed by the United States.
- The FHLB is jointly and severally liable with the other 10 FHLBanks for the payment of principal and interest on all Consolidated Obligations of each of the other FHLBanks.

The following table reflects the difference between the aggregate unpaid principal balance outstanding and the aggregate fair value for Advances and Consolidated Bonds for which the fair value option has been elected.

Table 18.4 – Aggregate Unpaid Balance and Aggregate Fair Value (in thousands)

	September 30, 2018			December 31, 2017		
	Aggregate Unpaid Principal Balance	Aggregate Fair Value	Aggregate Fair Value Over/ (Under) Aggregate Unpaid Principal Balance	Aggregate Unpaid Principal Balance	Aggregate Fair Value	Aggregate Fair Value Over/ (Under) Aggregate Unpaid Principal Balance
Advances ⁽¹⁾	\$ 10,000	\$ 9,936	\$ (64)	\$ 15,000	\$ 15,013	\$ 13
Consolidated Bonds	6,552,000	6,497,201	(54,799)	5,624,265	5,577,315	(46,950)

(1) At September 30, 2018 and December 31, 2017, none of the Advances were 90 days or more past due or had been placed on non-accrual status.

Note 19 - Commitments and Contingencies
Table 19.1 - Off-Balance Sheet Commitments (in thousands)

Notional Amount	September 30, 2018			December 31, 2017		
	Expire within one year	Expire after one year	Total	Expire within one year	Expire after one year	Total
Standby Letters of Credit	\$ 13,657,669	\$ 294,534	\$ 13,952,203	\$ 14,388,745	\$ 302,237	\$ 14,690,982
Commitments for standby bond purchases	23,215	54,820	78,035	27,230	44,645	71,875
Commitments to fund additional Advances	—	—	—	5,000	—	5,000
Commitments to purchase mortgage loans	298,138	—	298,138	218,651	—	218,651
Unsettled Consolidated Bonds, principal amount ⁽¹⁾	40,000	—	40,000	—	—	—
Unsettled Consolidated Discount Notes, principal amount ⁽¹⁾	1,668,903	—	1,668,903	309,662	—	309,662

(1) Expiration is based on settlement period rather than underlying contractual maturity of Consolidated Obligations.

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

Note 20 - Transactions with Other FHLBanks

The FHLB notes all transactions with other FHLBanks on the face of its financial statements. Occasionally, the FHLB loans short-term funds to and borrows short-term funds from other FHLBanks. These loans and borrowings are transacted at then current market rates when traded. There were no such loans or borrowings outstanding at September 30, 2018 or December 31, 2017. The following table details the average daily balance of lending and borrowing between the FHLB and other FHLBanks for the nine months ended September 30, 2018 and 2017.

Table 20.1 - Lending and Borrowing Between the FHLB and Other FHLBanks (in thousands)

	Average Daily Balances for the Nine Months Ended September 30,	
	2018	2017
Loans to other FHLBanks	\$ 1,832	\$ 18
Borrowings from other FHLBanks	366	916

In addition, the FHLB may, from time to time, assume the outstanding primary liability for Consolidated Obligations of another FHLBank (at then current market rates on the day when the transfer is traded) rather than issuing new debt for which the FHLB is the primary obligor. The FHLB then becomes the primary obligor on the transferred debt. There were no Consolidated Obligations transferred to the FHLB during the nine months ended September 30, 2018 or 2017. The FHLB had no Consolidated Obligations transferred to other FHLBanks during these periods.

Note 21 - Transactions with Stockholders

As a cooperative, the FHLB's capital stock is owned by its members, by former members that retain the stock as provided in the FHLB's Capital Plan and by nonmember institutions that have acquired members and must retain the stock to support Advances or other activities with the FHLB. All Advances are issued to members and all mortgage loans held for portfolio are purchased from members. The FHLB also maintains demand deposit accounts for members, primarily to facilitate settlement activities that are directly related to Advances and mortgage loan purchases. Additionally, the FHLB may enter into interest rate swaps with its stockholders. The FHLB may not invest in any equity securities issued by its stockholders and it has not purchased any MBS securitized by, or other direct long-term investments in, its stockholders.

For financial statement purposes, the FHLB defines related parties as those members with more than 10 percent of the voting interests of the FHLB capital stock outstanding. Federal statute prescribes the voting rights of members in the election of both Member and Independent directors. For Member directorships, the Finance Agency designates the number of Member directorships in a given year and an eligible voting member may vote only for candidates seeking election in its respective state. For Independent directors, the FHLB's Board of Directors nominates candidates to be placed on the ballot in an at-large election. For both Member and Independent director elections, a member is entitled to vote one share of required capital stock, subject to a statutory limitation, for each applicable directorship. Under this limitation, the total number of votes that a member may cast is limited to the average number of shares of the FHLB's capital stock that were required to be held by all members in that state as of the record date for voting. Nonmember stockholders are not eligible to vote in director elections. Due to these statutory limitations, no member owned more than 10 percent of the voting interests of the FHLB at September 30, 2018 or December 31, 2017.

All transactions with stockholders are entered into in the ordinary course of business. Finance Agency regulations require the FHLB to offer the same pricing for Advances and other services to all members regardless of asset or transaction size, charter type, or geographic location. However, the FHLB may, in pricing its Advances, distinguish among members based upon its assessment of the credit and other risks to the FHLB of lending to any particular member or upon other reasonable criteria that may be applied equally to all members. The FHLB's policies and procedures require that such standards and criteria be applied consistently and without discrimination to all members applying for Advances.

Transactions with Directors' Financial Institutions. In the ordinary course of its business, the FHLB may provide products and services to members whose officers or directors serve as directors of the FHLB (Directors' Financial Institutions). Finance Agency regulations require that transactions with Directors' Financial Institutions be made on the same terms as those with any other member. The following table reflects balances with Directors' Financial Institutions for the items indicated below. The FHLB had no MBS or derivatives transactions with Directors' Financial Institutions at September 30, 2018 or December 31, 2017.

Table 21.1 - Transactions with Directors' Financial Institutions (dollars in millions)

	September 30, 2018		December 31, 2017	
	Balance	% of Total ⁽¹⁾	Balance	% of Total ⁽¹⁾
Advances	\$ 3,539	6.1%	\$ 3,558	5.1%
MPP	596	6.0	112	1.2
Regulatory capital stock	419	9.8	187	4.4

(1) Percentage of total principal (Advances), unpaid principal balance (MPP), and regulatory capital stock.

Concentrations. The following table shows regulatory capital stock balances, outstanding Advance principal balances, and unpaid principal balances of mortgage loans held for portfolio of stockholders holding five percent or more of regulatory capital stock and includes any known affiliates that are members of the FHLB.

Table 21.2 - Stockholders Holding Five Percent or more of Regulatory Capital Stock (dollars in millions)

	Regulatory Capital Stock		Advance Principal	MPP Unpaid Principal Balance
	Balance	% of Total		
September 30, 2018				
JPMorgan Chase Bank, N.A.	\$ 1,003	24%	\$ 19,000	\$ —
U.S. Bank, N.A.	754	18	9,574	20
The Huntington National Bank	248	6	6	496
December 31, 2017				
JPMorgan Chase Bank, N.A.	\$ 1,059	25%	\$ 23,950	\$ —
U.S. Bank, N.A.	593	14	8,975	23
The Huntington National Bank	282	7	3,732	456
Fifth Third Bank	248	6	3,140	2

Nonmember Affiliates. The FHLB has relationships with three nonmember affiliates, the Kentucky Housing Corporation, the Ohio Housing Finance Agency and the Tennessee Housing Development Agency. The FHLB had no investments in or borrowings to any of these nonmember affiliates at September 30, 2018 or December 31, 2017. The FHLB has executed standby bond purchase agreements with one state housing authority whereby the FHLB, for a fee, agrees as a liquidity provider if required, to purchase and hold the authority's bonds until the designated marketing agent can find a suitable investor or the housing authority repurchases the bond according to a schedule established by the standby agreement. During the first nine months of 2018 and 2017, the FHLB was not required to purchase any bonds under these agreements.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

This document contains forward-looking statements that describe the objectives, expectations, estimates, and assessments of the Federal Home Loan Bank of Cincinnati (the FHLB). These statements use words such as “anticipates,” “expects,” “believes,” “could,” “estimates,” “may,” and “should.” By their nature, forward-looking statements relate to matters involving risks or uncertainties, some of which we may not be able to know, control, or completely manage. Actual future results could differ materially from those expressed or implied in forward-looking statements or could affect the extent to which we are able to realize an objective, expectation, estimate, or assessment. Some of the risks and uncertainties that could affect our forward-looking statements include the following:

- the effects of economic, financial, credit, market, and member conditions on our financial condition and results of operations, including changes in economic growth, general liquidity conditions, inflation and deflation, interest rates, interest rate spreads, interest rate volatility, mortgage originations, prepayment activity, housing prices, asset delinquencies, and members' mergers and consolidations, deposit flows, liquidity needs, and loan demand;
- political events, including legislative, regulatory, federal government, judicial or other developments that could affect us, our members, our counterparties, other Federal Home Loan Banks (FHLBanks) and other government-sponsored enterprises (GSEs), and/or investors in the Federal Home Loan Bank System's (FHLBank System) debt securities, which are called Consolidated Obligations or Obligations;
- competitive forces, including those related to other sources of funding available to members, to purchases of mortgage loans, and to our issuance of Consolidated Obligations;
- the financial results and actions of other FHLBanks that could affect our ability, in relation to the FHLBank System's joint and several liability for Consolidated Obligations, to access the capital markets on favorable terms or preserve our profitability, or could alter the regulations and legislation to which we are subject;
- changes in ratings assigned to FHLBank System Obligations or the FHLB that could raise our funding cost;
- changes in investor demand for Obligations;
- the volatility of market prices, interest rates, credit quality, and other indices that could affect the value of investments and collateral we hold as security for member obligations and/or for counterparty obligations;
- the ability to attract and retain skilled management and other key employees;
- the ability to develop and support technology and information systems that effectively manage the risks we face (including cybersecurity risks);
- the risk of loss arising from failures or interruptions in our ongoing business operations, internal controls, information systems or other operating technologies;
- the ability to successfully manage new products and services; and
- the risk of loss arising from litigation filed against us or one or more other FHLBanks.

We do not undertake any obligation to update any forward-looking statements made in this document.

EXECUTIVE OVERVIEW

The following table presents selected Statement of Condition data, Statement of Income data and financial ratios for the periods indicated.

(Dollars in millions)	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017
<u>STATEMENT OF CONDITION DATA AT PERIOD END:</u>					
Total assets	\$ 99,796	\$ 108,072	\$ 111,709	\$ 106,895	\$ 105,251
Advances	57,771	60,559	63,883	69,918	67,943
Mortgage loans held for portfolio	10,182	9,845	9,732	9,682	9,505
Allowance for credit losses on mortgage loans	1	1	1	1	1
Investments ⁽¹⁾	31,580	37,382	36,012	27,058	27,575
Consolidated Obligations, net:					
Discount Notes	45,313	50,063	53,089	46,211	49,540
Bonds	46,913	51,173	51,767	54,163	49,298
Total Consolidated Obligations, net	92,226	101,236	104,856	100,374	98,838
Mandatorily redeemable capital stock	22	23	28	30	32
Capital:					
Capital stock - putable	4,242	4,539	4,524	4,241	4,229
Retained earnings	1,008	984	961	940	915
Accumulated other comprehensive loss	(15)	(16)	(16)	(16)	(12)
Total capital	5,235	5,507	5,469	5,165	5,132
<u>STATEMENT OF INCOME DATA FOR THE QUARTER:</u>					
Net interest income after provision for credit losses	\$ 130	\$ 129	\$ 118	\$ 110	\$ 110
Non-interest income (loss)	(9)	(13)	(4)	2	(3)
Non-interest expense	19	22	22	19	20
Affordable Housing Program assessments	10	9	9	9	9
Net income	\$ 92	\$ 85	\$ 83	\$ 84	\$ 78
<u>FINANCIAL RATIOS FOR THE QUARTER:</u>					
Dividend payout ratio ⁽²⁾	74.0%	73.8%	74.1%	69.7%	69.1%
Weighted average dividend rate ⁽³⁾	6.00	5.75	5.75	5.50	5.25
Return on average equity	6.87	6.15	6.23	6.42	5.97
Return on average assets	0.36	0.32	0.30	0.33	0.30
Net interest margin ⁽⁴⁾	0.52	0.48	0.44	0.43	0.42
Average equity to average assets	5.27	5.15	4.89	5.10	4.95
Regulatory capital ratio ⁽⁵⁾	5.28	5.13	4.94	4.88	4.92
Operating expense to average assets ⁽⁶⁾	0.060	0.061	0.066	0.058	0.061

- (1) Investments include interest bearing deposits in banks, securities purchased under agreements to resell, Federal funds sold, trading securities, available-for-sale securities, and held-to-maturity securities.
- (2) Dividend payout ratio is dividends declared in the period as a percentage of net income.
- (3) Weighted average dividend rates are dividends paid divided by the average number of shares of capital stock eligible for dividends.
- (4) Net interest margin is net interest income before provision for credit losses as a percentage of average earning assets.
- (5) Regulatory capital ratio is period-end regulatory capital (capital stock, mandatorily redeemable capital stock and retained earnings) as a percentage of period-end total assets.
- (6) Operating expenses comprise compensation and benefits and other operating expenses, which are included in non-interest expense.

Financial Condition

Mission Asset Activity

In the first nine months of 2018, the FHLB fulfilled its mission by providing a key source of readily available and competitively priced wholesale funding to its member financial institutions, supporting its commitment to affordable housing and community investment, and paying stockholders a competitive dividend return on their capital investment.

Mission Assets, which we define as Advances, Letters of Credit, and total MPP (including purchase commitments), are the primary means by which we fulfill our mission with direct connections to members. We regularly monitor our balance sheet concentration of Mission Asset Activity. In the first nine months of 2018, our Primary Mission Asset ratio, which measures the sum of average Advances and mortgage loans as a percentage of average Consolidated Obligations, was 76 percent, well above the Federal Housing Finance Agency (Finance Agency) preferred ratio of 70 percent. In assessing overall mission achievement, we also consider supplemental sources of Mission Asset Activity, the most significant of which is Letters of Credit issued to members.

The following table summarizes our Mission Asset Activity.

(In millions)	Ending Balances			Average Balances		
	September 30,		December 31,	Nine Months Ended		Year Ended
	2018	2017	2017	September 30,	December 31,	2017
Mission Asset Activity:						
Advances (principal)	\$ 57,886	\$ 67,975	\$ 69,978	\$ 66,005	\$ 67,964	\$ 67,683
Mortgage Purchase Program (MPP):						
Mortgage loans held for portfolio (principal)	9,955	9,280	9,454	9,612	9,161	9,224
Mandatory Delivery Contracts (notional)	298	361	219	294	303	293
Total MPP	10,253	9,641	9,673	9,906	9,464	9,517
Letters of Credit (notional)	13,952	16,796	14,691	14,785	16,910	16,457
Total Mission Asset Activity	\$ 82,091	\$ 94,412	\$ 94,342	\$ 90,696	\$ 94,338	\$ 93,657

The balance of Mission Asset Activity was \$82.1 billion at September 30, 2018, a decrease of \$12.3 billion (13 percent) from year-end 2017, primarily driven by lower Advance balances. Advance principal balances decreased \$12.1 billion (17 percent) primarily due to a reduction in borrowings from a few large-asset members. However, average Advance principal balances for the nine months ended 2018 declined only \$2.0 billion compared to the same period of 2017. Advance balances are often volatile due to our members' ability to quickly, normally on the same day, increase or decrease their amount of Advances. We believe providing members flexibility in their funding levels helps support their asset-liability management needs and is a key benefit of membership. At September 30, 2018, 72 percent of members held Mission Asset Activity, which was relatively stable compared to prior periods.

Based on the most-recently available figures, members funded an average of 3.4 percent of their assets with Advances. As in recent years, most members continued to have modest demand for Advance borrowings. Demand for Advances is affected by the accessibility and cost of other sources of liquidity and funding, such as deposits, available to members.

The MPP principal balance rose \$0.5 billion (five percent) from year-end 2017. During the first nine months of 2018, we purchased \$1.4 billion of mortgage loans, while principal reductions totaled \$0.9 billion.

Based on earnings in the first nine months of 2018, we accrued \$29 million for the Affordable Housing Program (AHP) pool of funds to be available to members in 2019. In addition to the required AHP assessment, we continued our voluntary sponsorship of two other housing programs, which provide resources to pay for accessibility rehabilitation and emergency repairs for special needs and elderly homeowners and to help members aid their communities following natural disasters.

Investments and Other Assets

The balance of investments at September 30, 2018 was \$31.6 billion, an increase of \$4.5 billion (17 percent) from year-end 2017. Investments averaged \$30.0 billion in the first nine months of 2018, an increase of \$5.6 billion (23 percent) from the

average balance during the same period of 2017. The increases in the ending and average balances of investments were primarily driven by higher liquidity investments, which can vary significantly on a daily basis during times of volatility in Advance balances. At September 30, 2018, investments included \$16.0 billion of mortgage-backed securities (MBS) and \$15.6 billion of other investments, which were mostly short-term instruments held for liquidity. All of our MBS held at September 30, 2018 were issued and guaranteed by Fannie Mae, Freddie Mac or a U.S. agency.

We maintained a robust amount of asset liquidity throughout the first nine months of 2018 across a variety of liquidity measures, as discussed in the "Liquidity Risk" section of "Quantitative and Qualitative Disclosures About Risk Management."

Capital

Capital adequacy remained strong in the first nine months of 2018, surpassing all minimum regulatory capital requirements. The GAAP capital-to-assets ratio at September 30, 2018 was 5.25 percent, while the regulatory capital-to-assets ratio was 5.28 percent. Both ratios exceeded the regulatory required minimum of four percent. Regulatory capital includes mandatorily redeemable capital stock accounted for as a liability under GAAP. The amounts of GAAP and regulatory capital increased \$70 million and \$61 million, respectively, in the first nine months of 2018, due to purchases of capital stock associated with Advance activity and the growth in retained earnings. The increase in capital was partially offset by a repurchase of \$297 million in excess stock from members as part of our capital management strategy.

Retained earnings totaled \$1.0 billion at September 30, 2018, an increase of seven percent from year-end 2017. We believe the amount of retained earnings is sufficient to protect against members' impairment risk of their capital stock investment in the FHLB and to provide the opportunity to stabilize or augment future dividends. Our capital policies and Capital Plan also have safeguards to ensure we meet regulatory and prudential capital requirements.

Results of Operations

Overall Results

The table below summarizes our results of operations.

(Dollars in millions)	Three Months Ended September 30,		Nine Months Ended September 30,		Year Ended December 31,
	2018	2017	2018	2017	2017
Net income	\$ 92	\$ 78	\$ 259	\$ 230	\$ 314
Affordable Housing Program assessments	10	9	29	25	35
Return on average equity (ROE)	6.87%	5.97%	6.41%	6.06%	6.15%
Return on average assets	0.36	0.30	0.33	0.30	0.31
Weighted average dividend rate	6.00	5.25	5.84	4.83	5.00
Average 3-month LIBOR	2.34	1.31	2.20	1.20	1.26
ROE spread to 3-month LIBOR	4.53	4.66	4.21	4.86	4.89
Dividend rate spread to 3-month LIBOR	3.66	3.94	3.64	3.63	3.74

Net income increased \$14 million (18 percent) in the three-month comparison period and \$29 million (13 percent) in the nine-month comparison period. The increase in net income and ROE in the both comparison periods was primarily the result of higher net interest income. Net interest income was higher in both comparison periods primarily due to the rise in short-term interest rates, which improved earnings from funding assets with interest-free capital.

Earnings levels continued to represent competitive returns on stockholders' capital investment. ROE was significantly higher than short-term rates in the periods presented above, while we maintained risk exposures in line with our appetite for a moderate to low risk profile. The spread between ROE and 3-month LIBOR is a market benchmark we believe member stockholders use to assess the competitiveness of the return on their capital investment.

In September 2018, we paid stockholders a quarterly 6.00 percent annualized dividend rate on their capital investment in our company, an increase of 25 basis points from the dividend rate paid in June 2018. The increase in our dividend rate paid was driven in large part by the effects of higher interest rates.

We believe that our operations and financial condition will continue to generate competitive profitability, reflecting the combination of a stable business model, and a consistent and conservative management of risk. Our business model is structured to be able to absorb sharp changes in Mission Asset Activity because we can undertake commensurate changes in

liability balances and capital. Key factors that can cause significant periodic earnings volatility are changes in the level of interest rates, changes in spreads between LIBOR and our short-term funding costs, recognition of net amortization, and unrealized fair value adjustments related to the use of derivatives and the associated hedged items.

Effect of Interest Rate Environment

Trends in market interest rates and the resulting shapes of the market yield curves strongly influence the results of operations and profitability because of how they affect members' demand for Mission Asset Activity, spreads on assets, funding costs and decisions in managing the tradeoffs in our market risk/return profile. The following table presents key market interest rates (obtained from Bloomberg L.P.).

	Quarter 3 2018		Quarter 2 2018		Quarter 1 2018		Nine Months Ended September 30,		Year 2017	
	Ending	Average	Ending	Average	Ending	Average	2018	2017	Ending	Average
							Average	Average		
Federal funds effective	2.18%	1.93%	1.91%	1.74%	1.67%	1.45%	1.71%	0.93%	1.33%	1.00%
3-month LIBOR	2.40	2.34	2.34	2.34	2.31	1.93	2.20	1.20	1.69	1.26
2-year LIBOR	2.99	2.86	2.79	2.74	2.58	2.40	2.67	1.57	2.08	1.65
10-year LIBOR	3.12	2.99	2.93	2.96	2.79	2.77	2.91	2.26	2.40	2.29
2-year U.S. Treasury	2.82	2.66	2.53	2.47	2.27	2.15	2.43	1.29	1.89	1.39
10-year U.S. Treasury	3.06	2.92	2.86	2.92	2.74	2.76	2.87	2.31	2.41	2.33
15-year mortgage current coupon ⁽¹⁾	3.35	3.24	3.18	3.20	3.03	2.93	3.13	2.38	2.52	2.40
30-year mortgage current coupon ⁽¹⁾	3.82	3.67	3.61	3.64	3.47	3.40	3.57	3.04	3.00	3.03

(1) Simple average of current coupon rates of Fannie Mae and Freddie Mac par MBS indications.

In September 2018, the target overnight Federal funds increased from a 1.75 to 2.00 percent range to a 2.00 to 2.25 percent range. Average short-term rates were approximately 0.80 to 1.00 percentage points higher in the first nine months of 2018 compared to the same period of 2017, while average long-term rates increased approximately 0.50 to 0.70 percentage points during that same period. The gradually rising, but relatively low, interest rate environment continued to benefit income during the first nine months of 2018 primarily because of earnings generated by funding assets with interest-free capital. However, the trends of rising short-term interest rates and flatter market yield curves could lower profitability if they were to continue for a prolonged period or if market yield curves were inverted between certain maturity points. For example, earnings may decrease as a consequence of a flat to inverted yield curve due to narrower spreads between the book yields of new mortgage assets and the costs of new Consolidated Obligations.

Business Outlook and Risk Management

Other than the updates noted below, our major business strategies, outlook for our business, and risk profiles and management have not changed substantially since our 2017 Annual Report on Form 10-K. “Quantitative and Qualitative Disclosures About Risk Management” provides details on current risk exposures.

LIBOR Replacement

The United Kingdom's Financial Conduct Authority (FCA), which has regulated LIBOR since April 2013, has announced that the LIBOR index is expected to be phased out after 2021. In response, the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee (ARRC) to (1) develop an alternative to U.S. dollar LIBOR and (2) develop a plan to encourage its use in derivatives and other transactions. The ARRC has settled on the establishment of the Secured Overnight Financing Rate (SOFR) as its recommended alternative to U.S. dollar LIBOR. SOFR is based on a broad segment of the overnight Treasuries repurchase market and is intended to be a measure of the cost of borrowing cash overnight collateralized by Treasury securities. The Federal Reserve Bank of New York began publishing SOFR in April 2018. During the third quarter of 2018, several market participants began utilizing SOFR through the issuance of variable-rate debt securities indexed to SOFR. Many of our assets and liabilities are indexed to LIBOR. We are planning for the eventual replacement of our LIBOR-indexed instruments away from the LIBOR benchmark interest rate, including the possibility of SOFR as the dominant replacement. We are not currently able to predict whether LIBOR will remain as an available rate index, whether and when an alternative rate such as SOFR will become a robust market benchmark rate in place of LIBOR, or what the impact of such a transition may be on our business, financial condition, and results of operations.

Regulatory and Legislative Risk

Advisory Bulletin 2018-07 Federal Home Loan Bank Liquidity Guidance (Liquidity AB). In August 2018, the Finance Agency issued a final Advisory Bulletin on expectations with respect to the maintenance of sufficient liquidity to enable the FHLBanks to provide Advances and Letters of Credit for members for a specified time without access to the capital markets or other unsecured funding sources. The Liquidity AB rescinds 2009 liquidity guidance previously issued by the Finance Agency. In addition, the Liquidity AB provides guidance related to asset/liability maturity funding gap limits. The Liquidity AB provides for the funding gap limits to reduce the liquidity risks associated with a mismatch in asset and liability maturities, including an undue reliance on short-term debt funding, which may increase debt rollover risk. Contemporaneously with the issuance of the Liquidity AB, the Finance Agency issued a supervisory letter that identifies initial thresholds for measures of liquidity.

As part of the base case liquidity expectations, the Liquidity AB requires the FHLBanks to hold positive cash flow assuming no access to capital markets for an increased period of between 10 to 30 calendar days, with the specific initial number of calendar days required set forth in the supervisory letter. The Finance Agency's previous guidance required the FHLBanks to target at least five consecutive calendar days of a positive amount of liquidity. Additionally, for funding gaps and possible asset and liability mismatches, the Liquidity AB provides guidance on maintaining appropriate funding gaps for three-month (-10 percent to -20 percent) and one-year (-25 percent to -35 percent) maturity horizons, with specific initial percentages set forth in the supervisory letter. The Liquidity AB also addresses liquidity stress testing, contingent funding plans and an adjustment to the calculation of the Primary Mission Asset ratio.

Portions of the Liquidity AB will be implemented beginning December 31, 2018, with further implementation on March 31, 2019, and full implementation on December 31, 2019. While we are still analyzing the impact of the Liquidity AB, it will likely require us to hold an additional amount of liquid assets to meet the new guidance. Further, our cost of funding may increase if we are required to achieve the appropriate funding gap with longer term funding. We currently do not believe these changes will have a material effect on our results of operations.

ANALYSIS OF FINANCIAL CONDITION

Credit Services

Credit Activity and Advance Composition

The table below shows trends in Advance balances by major programs and in the notional amount of Letters of Credit.

(Dollars in millions)	September 30, 2018		June 30, 2018		March 31, 2018		December 31, 2017	
	Balance	Percent ⁽¹⁾	Balance	Percent ⁽¹⁾	Balance	Percent ⁽¹⁾	Balance	Percent ⁽¹⁾
Adjustable/Variable-Rate Indexed:								
LIBOR	\$20,940	36%	\$26,659	44%	\$31,646	50%	\$32,420	47%
Other	637	1	1,130	2	781	1	941	1
Total	21,577	37	27,789	46	32,427	51	33,361	48
Fixed-Rate:								
Repurchase based (REPO)	18,446	32	15,355	25	14,540	23	19,890	28
Regular Fixed-Rate	11,929	21	12,059	20	11,677	18	11,191	16
Putable ⁽²⁾	235	—	110	—	175	—	280	—
Amortizing/Mortgage Matched	2,800	5	2,821	5	2,810	4	2,776	4
Other	2,894	5	2,532	4	2,355	4	2,479	4
Total	36,304	63	32,877	54	31,557	49	36,616	52
Other Advances	5	—	—	—	1	—	1	—
Total Advances Principal	\$57,886	100%	\$60,666	100%	\$63,985	100%	\$69,978	100%
Letters of Credit (notional)	\$13,952		\$14,482		\$15,606		\$14,691	

(1) As a percentage of total Advances principal.

(2) Excludes Putable Advances where the related put options have expired. These Advances are classified based on their current terms.

Advance balances at September 30, 2018 decreased 17 percent compared to year-end 2017, as a result of lower variable-rate borrowings by a few large-asset members. However, the average Advance principal balance of \$66.0 billion during the first nine months of 2018 was significantly higher than the ending balance at September 30, 2018. REPOs, which traditionally have the most volatile balances because a majority of them have overnight maturities, allow our members the most flexibility as their liquidity needs may change daily.

Advance Usage

In addition to analyzing Advance balances by dollar trends, we monitor the degree to which members use Advances to fund their balance sheets. The following table shows the unweighted, average ratio of each member's Advance balance to its most-recently available figures for total assets.

	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017
<u>Average Advances-to-assets for members</u>				
Assets less than \$1.0 billion (560 members)	3.16%	3.18%	2.86%	3.04%
Assets over \$1.0 billion (92 members)	4.61	4.85	4.10	4.95
All members	3.36	3.41	3.03	3.28

The following tables present principal balances for the five members with the largest Advance borrowings.

(Dollars in millions)

September 30, 2018			December 31, 2017		
Name	Principal Amount of Advances	Percent of Total Principal Amount of Advances	Name	Principal Amount of Advances	Percent of Total Principal Amount of Advances
JPMorgan Chase Bank, N.A.	\$ 19,000	33%	JPMorgan Chase Bank, N.A.	\$ 23,950	34%
U.S. Bank, N.A.	9,574	17	U.S. Bank, N.A.	8,975	13
Third Federal Savings and Loan Association	3,717	6	Third Federal Savings and Loan Association	3,756	5
Pinnacle Bank	1,521	3	The Huntington National Bank	3,732	5
Nationwide Bank	1,511	3	Fifth Third Bank	3,140	4
Total of Top 5	<u>\$ 35,323</u>	<u>62%</u>	Total of Top 5	<u>\$ 43,553</u>	<u>61%</u>

Advance concentration ratios are influenced by, and generally similar to, concentration ratios of financial activity among our Fifth District financial institutions. We believe that having large financial institutions that actively use our Mission Assets augments the value of membership to all members. For example, such activity improves our operating efficiency, increases our earnings and thereby contributions to housing and community investment programs. This activity may enable us to obtain more favorable funding costs, and helps us maintain competitively priced Mission Assets.

Mortgage Loans Held for Portfolio (Mortgage Purchase Program, or MPP)

The table below shows principal purchases and reductions of loans in the MPP for the first nine months of 2018.

(In millions)

	MPP Principal
Balance at December 31, 2017	\$ 9,454
Principal purchases	1,361
Principal reductions	(860)
Balance at September 30, 2018	<u>\$ 9,955</u>

Although there were 104 active members participating in the MPP at September 30, 2018, approximately 50 percent of the principal purchases in the first nine months of 2018 resulted from activity of our three largest sellers. All loans acquired in the first nine months of 2018 were conventional loans.

We closely track the refinancing incentives of our mortgage assets (including loans in the MPP and MBS) because the option for homeowners to change their principal payments normally represents the largest portion of our market risk exposure and can affect MPP balances. MPP principal paydowns in the first nine months of 2018 equated to an eight percent annual constant prepayment rate, down from the nine percent rate for all of 2017 due to a sustained increase in mortgage rates.

The MPP's composition of balances by loan type, original final maturity, and weighted-average mortgage note rate did not change materially in the first nine months of 2018. MPP yields earned in the first nine months of 2018, after consideration of funding and hedging costs, continued to offer favorable returns relative to their market and credit risk exposure.

Investments

The table below presents the ending and average balances of the investment portfolio.

(In millions)	Nine Months Ended September 30, 2018		Year Ended December 31, 2017	
	Ending Balance	Average Balance	Ending Balance	Average Balance
Liquidity investments	\$ 15,594	\$ 14,151	\$ 12,286	\$ 9,757
MBS	15,986	15,748	14,772	14,710
Other investments ⁽¹⁾	—	62	—	84
Total investments	<u>\$ 31,580</u>	<u>\$ 29,961</u>	<u>\$ 27,058</u>	<u>\$ 24,551</u>

(1) The average balance includes the rights or obligations to cash collateral, which are included in the fair value of derivative assets or derivative liabilities on the Statements of Condition at period end.

We continued to maintain a robust amount of asset liquidity. Liquidity investment levels can vary significantly based on changes in the amount of Advances, liquidity needs, the availability of acceptable net spreads, and the number of eligible counterparties that meet our unsecured credit risk criteria. It is normal for liquidity investments to vary by up to several billion dollars on a daily basis. The higher amount of liquidity investments at September 30, 2018 was primarily due to volatility in Advance activity, especially short-term and variable-rate Advance borrowings.

Our overarching strategy for balances of MBS is to keep holdings as close as possible to the regulatory maximum of three times regulatory capital, subject to the availability of securities that we believe provide acceptable risk/return tradeoffs. The ratio of MBS to regulatory capital was 3.03 at September 30, 2018, which exceeded the current regulatory limit due to a stock repurchase that occurred during the quarter. We may exceed this regulatory maximum from time-to-time due to capital reductions. In these cases, new purchases will be postponed until the ratio falls below the regulatory limit. The balance of MBS at September 30, 2018 consisted of \$13.8 billion of securities issued by Fannie Mae or Freddie Mac (of which \$8.7 billion were floating-rate securities), \$0.4 billion of floating-rate securities issued by the National Credit Union Administration (NCUA), and \$1.8 billion of securities issued by Ginnie Mae (which are primarily fixed rate). We held no private-label MBS.

The table below shows principal purchases and paydowns of our MBS for the first nine months of 2018.

(In millions)	MBS Principal
Balance at December 31, 2017	\$ 14,746
Principal purchases	3,169
Principal paydowns	(1,952)
Balance at September 30, 2018	<u>\$ 15,963</u>

Principal paydowns in the first nine months of 2018 equated to a 15 percent annual constant prepayment rate, the same rate for all of 2017.

Consolidated Obligations

The table below presents the ending and average balances of our participations in Consolidated Obligations.

(In millions)	Nine Months Ended September 30, 2018		Year Ended December 31, 2017	
	Ending Balance	Average Balance	Ending Balance	Average Balance
Discount Notes:				
Par	\$ 45,416	\$ 47,352	\$ 46,259	\$ 43,166
Discount	(103)	(79)	(48)	(42)
Total Discount Notes	45,313	47,273	46,211	43,124
Bonds:				
Unswapped fixed-rate	26,008	26,644	26,710	26,707
Unswapped adjustable-rate	14,245	18,688	20,895	18,500
Swapped fixed-rate	6,666	6,662	6,552	7,131
Total par Bonds	46,919	51,994	54,157	52,338
Other items ⁽¹⁾	(6)	(11)	6	29
Total Bonds	46,913	51,983	54,163	52,367
Total Consolidated Obligations ⁽²⁾	\$ 92,226	\$ 99,256	\$ 100,374	\$ 95,491

(1) Includes unamortized premiums/discounts, fair value option valuation adjustments, hedging and other basis adjustments.

(2) The 11 FHLBanks have joint and several liability for the par amount of all of the Consolidated Obligations issued on their behalves. The par amount of the outstanding Consolidated Obligations for all of the FHLBanks was (in millions) \$1,019,143 and \$1,034,260 at September 30, 2018 and December 31, 2017, respectively.

The balances of Consolidated Obligations fluctuate with changes in the balances of our assets. For example, the volatility in certain Advances and liquidity investments contributed to the higher average balance of Discount Notes in the first nine months of 2018. Additionally, the decline in unswapped adjustable-rate Bonds at September 30, 2018 was primarily due to lower LIBOR-indexed Advance balances. We fund LIBOR-indexed assets with Discount Notes, adjustable-rate Bonds, and swapped fixed-rate Bonds because they give us the ability to effectively match the LIBOR reset periods embedded in these assets.

Deposits

Total deposits with us are normally a relatively minor source of low-cost funding. Total interest bearing deposits at September 30, 2018 were \$1.8 billion, an increase of \$1.1 billion from year-end 2017. The average balance of total interest bearing deposits in the first nine months of 2018 was \$0.7 billion, nearly unchanged from the average balance during the same period of 2017.

Derivatives Hedging Activity and Liquidity

Our use of derivatives is discussed in the "Effect of the Use of Derivatives on Net Interest Income" section in "Results of Operations." Liquidity is discussed in the "Liquidity Risk" section in "Quantitative and Qualitative Disclosures About Risk Management."

Capital Resources

The following tables present capital amounts and capital-to-assets ratios, on both a GAAP and regulatory basis. We consider the regulatory ratio to be a better representation of financial leverage than the GAAP ratio because, although the GAAP ratio treats mandatorily redeemable capital stock as a liability, it protects investors in our debt in the same manner as GAAP capital stock and retained earnings.

(In millions)	Nine Months Ended September 30, 2018		Year Ended December 31, 2017	
	Period End	Average	Period End	Average
<u>GAAP and Regulatory Capital</u>				
GAAP Capital Stock	\$ 4,242	\$ 4,406	\$ 4,241	\$ 4,183
Mandatorily Redeemable Capital Stock	22	27	30	46
Regulatory Capital Stock	4,264	4,433	4,271	4,229
Retained Earnings	1,008	1,013	940	928
Regulatory Capital	<u>\$ 5,272</u>	<u>\$ 5,446</u>	<u>\$ 5,211</u>	<u>\$ 5,157</u>
	Nine Months Ended September 30, 2018		Year Ended December 31, 2017	
	Period End	Average	Period End	Average
<u>GAAP and Regulatory Capital-to-Assets Ratio</u>				
GAAP	5.25%	5.10%	4.83%	5.00%
Regulatory ⁽¹⁾	5.28	5.14	4.88	5.06

(1) At all times, the FHLBanks must maintain at least a four percent minimum regulatory capital-to-assets ratio.

See the "Capital Adequacy" section in "Quantitative and Qualitative Disclosures About Risk Management" for a discussion of our retained earnings.

A portion of our capital stock is excess, meaning it is not required as a condition to being a member and is not currently capitalizing Mission Asset Activity. Excess capital stock provides a base of capital to manage financial leverage at prudent levels, augments loss protections for bondholders, and capitalizes a portion of growth in Mission Assets. The amount of excess capital stock, as defined by our Capital Plan, was \$812 million at September 30, 2018, an increase of \$421 million from December 31, 2017 due to lower Advance balances. We have the ability to repurchase all excess stock on a timely basis and continue to meet our regulatory and prudential capital requirements. In July 2018, we repurchased \$297 million of excess capital stock to help manage our capital and financial performance to levels that we believe are efficient and effective.

Membership and Stockholders

In the first nine months of 2018, we added five new member stockholders and lost 13 member stockholders, ending the quarter at 652 member stockholders. Of the members lost, 11 merged with other Fifth District members and two merged out of the District.

RESULTS OF OPERATIONS

Components of Earnings and Return on Equity

The following table is a summary income statement for the three and nine months ended September 30, 2018 and 2017. Each ROE percentage is computed by dividing income or expense for the category by the average amount of stockholders' equity for the period.

(Dollars in millions)	Three Months Ended September 30,				Nine Months Ended September 30,			
	2018		2017		2018		2017	
	Amount	ROE ⁽¹⁾	Amount	ROE ⁽¹⁾	Amount	ROE ⁽¹⁾	Amount	ROE ⁽¹⁾
Net interest income	\$ 130	9.76%	\$ 110	8.49%	\$ 377	9.34%	\$ 319	8.43%
Provision for credit losses	—	—	—	0.04	—	—	—	0.01
Net interest income after provision for credit losses	130	9.76	110	8.45	377	9.34	319	8.42
Non-interest income (loss):								
Net losses on derivatives and hedging activities	(9)	(0.66)	(7)	(0.52)	(46)	(1.15)	(2)	(0.04)
Net (losses) gains on financial instruments held under fair value option	(4)	(0.27)	—	0.01	12	0.30	(12)	(0.33)
Other non-interest income, net	4	0.26	4	0.26	9	0.22	10	0.27
Total non-interest income (loss)	(9)	(0.67)	(3)	(0.25)	(25)	(0.63)	(4)	(0.10)
Total income	121	9.09	107	8.20	352	8.71	315	8.32
Non-interest expense	19	1.45	20	1.56	64	1.58	60	1.58
Affordable Housing Program assessments	10	0.77	9	0.67	29	0.72	25	0.68
Net income	\$ 92	6.87%	\$ 78	5.97%	\$ 259	6.41%	\$ 230	6.06%

(1) The ROE amounts have been computed using dollars in thousands. Accordingly, recalculations based upon the disclosed amounts in millions may produce nominally different results.

Details on the individual factors contributing to the level and changes in profitability are explained in the sections below.

Net Interest Income

Components of Net Interest Income

The following table shows selected components of net interest income.

(Dollars in millions)	Three Months Ended September 30,				Nine Months Ended September 30,			
	2018		2017		2018		2017	
	Amount	% of Earning Assets	Amount	% of Earning Assets	Amount	% of Earning Assets	Amount	% of Earning Assets
Components of net interest rate spread:								
Net (amortization)/accretion ^{(1) (2)}	\$ (5)	(0.02)%	\$ (5)	(0.02)%	\$ (13)	(0.02)%	\$ (15)	(0.02)%
Prepayment fees on Advances, net ⁽²⁾	—	—	1	—	1	—	1	—
Other components of net interest rate spread	107	0.43	96	0.37	313	0.40	286	0.38
Total net interest rate spread	102	0.41	92	0.35	301	0.38	272	0.36
Earnings from funding assets with interest-free capital	28	0.11	18	0.07	76	0.10	47	0.06
Total net interest income/net interest margin ⁽³⁾	\$ 130	0.52 %	\$ 110	0.42 %	\$ 377	0.48 %	\$ 319	0.42 %

- (1) Includes monthly recognition of premiums and discounts paid on purchases of mortgage assets, premiums, discounts and concessions paid on Consolidated Obligations and other hedging basis adjustments.
- (2) These components of net interest rate spread have been segregated to display their relative impact.
- (3) Net interest margin is net interest income before provision for credit losses as a percentage of average total interest earning assets.

Net Amortization/Accretion (generally referred to as "amortization"): While net amortization has been substantial and volatile in several periods over the last five years, it was moderate in the first nine months of both 2018 and 2017. Periodic amortization adjustments do not necessarily indicate a trend in economic return over the entire life of mortgage assets, although it is one component of lifetime economic returns.

Prepayment Fees on Advances: Fees for members' early repayment of certain Advances, which are included in net interest income, are designed to make us economically indifferent to whether members hold Advances to maturity or repay them before maturity. Although Advance prepayment fees can be and have been significant in the past, they were minimal in the three and nine months ended September 30, 2018 and 2017, reflecting a low amount of member prepayments of Advances.

Other Components of Net Interest Rate Spread: Excluding net amortization and prepayment fees, the total other components of net interest rate spread increased \$11 million and \$27 million in the three- and nine-month comparison periods, respectively. The net increase was primarily due to the factors below.

Nine-Months Comparison

- **Growth in average mortgage asset balances-Favorable:** The \$0.5 billion increase in the average balance of mortgage loans held for portfolio and the \$1.1 billion increase in the average balance of mortgage-backed securities improved net interest income by an estimated \$7 million.
- **Growth in average liquidity investment balances-Favorable:** The \$4.6 billion increase in average liquidity investment balances improved net interest income by an estimated \$5 million.
- **Higher spreads on mortgage assets-Favorable:** Higher spreads earned on mortgage assets increased net interest income by an estimated \$10 million. Spreads improved primarily due to the rising interest rate environment.
- **Higher spreads on Advances-Favorable:** Higher spreads earned on certain Advances increased net interest income by an estimated \$14 million. However, the increase in Advance net interest income was more than offset by higher net interest payments on related derivatives not receiving hedge accounting, which are reflected in other non-interest income. The net interest payments relate to derivatives used to limit the market risk exposure of Advances to acceptable levels.
- **Lower spreads on liquidity investments-Unfavorable:** Lower spreads earned on liquidity investments decreased net interest income by an estimated \$7 million.

- **Lower average Advance balances-*Unfavorable*:** The \$2.0 billion decrease in Advance balances decreased net interest income by an estimated \$4 million.

Three-Months Comparison

For the three-months comparison, the same factors generally affected the other components of net interest rate spread as in the nine-months comparison and in approximately the same relative magnitude.

Earnings from funding assets with capital (“earnings from capital”): Because of our relatively low net interest rate spread compared to other financial institutions, we have historically derived a substantial portion of net interest income from using interest-free capital to fund interest-earning assets. Earnings from capital typically moves in the same direction as short-term interest rates and helps control market risk exposure. Earnings from capital increased \$10 million and \$29 million in the three and nine months ended September 30, 2018, respectively, compared to the same periods in 2017 primarily due to higher short-term interest rates.

Average Balance Sheet and Rates

The following tables provide average balances and rates for major balance sheet accounts, which determine the changes in net interest rate spreads. The average rates are affected by the inclusion or exclusion of net interest income or expense associated with our use of derivatives. For example, if derivatives qualify for fair value hedge accounting, the net interest settlements of interest receivables or payables associated with the derivatives is included in net interest income and interest rate spread. If the derivatives do not qualify for fair value hedge accounting, the net interest settlements of interest receivables or payables associated with the derivatives is excluded from net interest income and from the calculation of interest rate spread and is recorded in “Non-interest income (loss)” as “Net losses on derivatives and hedging activities.” Amortization associated with some hedging related basis adjustments is also reflected in net interest income, which affects interest rate spread.

(Dollars in millions)	Three Months Ended			Three Months Ended		
	September 30, 2018			September 30, 2017		
	Average Balance	Interest	Average Rate ⁽¹⁾	Average Balance	Interest	Average Rate ⁽¹⁾
Assets:						
Advances	\$ 59,109	\$ 342	2.30%	\$ 68,738	\$ 252	1.45%
Mortgage loans held for portfolio ⁽²⁾	10,005	80	3.18	9,503	75	3.12
Federal funds sold and securities purchased under resale agreements	12,005	60	1.98	10,358	30	1.16
Interest-bearing deposits in banks ⁽³⁾⁽⁴⁾⁽⁵⁾	2,539	15	2.25	626	2	1.15
Mortgage-backed securities	16,385	101	2.45	14,748	78	2.11
Other investments ⁽⁴⁾	41	—	2.22	34	—	1.01
Loans to other FHLBanks	—	—	—	—	—	—
Total interest-earning assets	<u>100,084</u>	<u>598</u>	2.37	<u>104,007</u>	<u>437</u>	1.67
Less: allowance for credit losses on mortgage loans	1	—	—	1	—	—
Other assets	289	—	—	256	—	—
Total assets	<u>\$ 100,372</u>			<u>\$ 104,262</u>		
Liabilities and Capital:						
Term deposits	\$ 86	—	1.83	\$ 62	—	0.91
Other interest bearing deposits ⁽⁵⁾	707	3	1.72	589	1	0.81
Discount Notes	41,694	208	1.98	46,787	124	1.05
Unswapped fixed-rate Bonds	26,391	138	2.07	27,360	135	1.95
Unswapped adjustable-rate Bonds	19,126	97	2.02	16,960	48	1.11
Swapped Bonds	6,434	21	1.28	6,688	18	1.08
Mandatorily redeemable capital stock	26	1	6.22	68	1	5.59
Other borrowings	—	—	—	—	—	—
Total interest-bearing liabilities	<u>94,464</u>	<u>468</u>	1.96	<u>98,514</u>	<u>327</u>	1.32
Non-interest bearing deposits	5	—	—	2	—	—
Other liabilities	613	—	—	583	—	—
Total capital	5,290	—	—	5,163	—	—
Total liabilities and capital	<u>\$ 100,372</u>			<u>\$ 104,262</u>		
Net interest rate spread			0.41%			0.35%
Net interest income and net interest margin ⁽⁶⁾		<u>\$ 130</u>	0.52%		<u>\$ 110</u>	0.42%
Average interest-earning assets to interest-bearing liabilities			105.95%			105.58%

(1) Amounts used to calculate average rates are based on dollars in thousands. Accordingly, recalculations based upon the disclosed amounts in millions may not produce the same results.

(2) Non-accrual loans are included in average balances used to determine average rate.

(3) Includes certificates of deposit that are classified as available-for-sale securities.

(4) Includes available-for-sale securities based on their amortized costs. The yield information does not give effect to changes in fair value that are reflected as a component of stockholders' equity for available-for-sale securities.

(5) The average balance amounts include the rights or obligations to cash collateral, which are included in the fair value of derivative assets or derivative liabilities on the Statements of Condition at period end.

(6) Net interest margin is net interest income before provision for credit losses as a percentage of average total interest earning assets.

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(Dollars in millions)	Nine Months Ended September 30, 2018			Nine Months Ended September 30, 2017		
	Average Balance	Interest	Average Rate ⁽¹⁾	Average Balance	Interest	Average Rate ⁽¹⁾
Assets:						
Advances	\$ 65,905	\$ 1,010	2.05%	\$ 67,942	\$ 649	1.28%
Mortgage loans held for portfolio ⁽²⁾	9,836	236	3.20	9,383	221	3.16
Federal funds sold and securities purchased under resale agreements	12,409	163	1.76	8,978	64	0.95
Interest-bearing deposits in banks ⁽³⁾⁽⁴⁾⁽⁵⁾	1,768	28	2.13	647	5	0.95
Mortgage-backed securities	15,748	279	2.36	14,678	227	2.07
Other investments ⁽⁴⁾	36	—	1.82	33	—	0.74
Loans to other FHLBanks	2	—	1.46	—	—	—
Total interest-earning assets	105,704	1,716	2.17	101,661	1,166	1.53
Less: allowance for credit losses on mortgage loans	1			1		
Other assets	279			264		
Total assets	<u>\$105,982</u>			<u>\$101,924</u>		
Liabilities and Capital:						
Term deposits	\$ 76	1	1.65	\$ 82	—	0.65
Other interest bearing deposits ⁽⁵⁾	623	7	1.50	623	3	0.58
Discount Notes	47,273	605	1.71	42,666	261	0.82
Unswapped fixed-rate Bonds	26,696	411	2.06	26,667	392	1.97
Unswapped adjustable-rate Bonds	18,689	251	1.80	18,890	133	0.94
Swapped Bonds	6,598	63	1.27	7,291	56	1.03
Mandatorily redeemable capital stock	27	1	6.01	51	2	5.29
Other borrowings	—	—	1.81	1	—	0.88
Total interest-bearing liabilities	99,982	1,339	1.79	96,271	847	1.17
Non-interest bearing deposits	4			2		
Other liabilities	593			584		
Total capital	5,403			5,067		
Total liabilities and capital	<u>\$105,982</u>			<u>\$101,924</u>		
Net interest rate spread			0.38%			0.36%
Net interest income and net interest margin ⁽⁶⁾		\$ 377	0.48%		\$ 319	0.42%
Average interest-earning assets to interest-bearing liabilities			105.72%			105.60%

- (1) Amounts used to calculate average rates are based on dollars in thousands. Accordingly, recalculations based upon the disclosed amounts in millions may not produce the same results.
- (2) Non-accrual loans are included in average balances used to determine average rate.
- (3) Includes certificates of deposit that are classified as available-for-sale securities.
- (4) Includes available-for-sale securities based on their amortized costs. The yield information does not give effect to changes in fair value that are reflected as a component of stockholders' equity for available-for-sale securities.
- (5) The average balance amounts include the rights or obligations to cash collateral, which are included in the fair value of derivative assets or derivative liabilities on the Statements of Condition at period end.
- (6) Net interest margin is net interest income before provision for credit losses as a percentage of average total interest earning assets.

Rates on short-term and adjustable-rate assets and liabilities rose more substantially than longer-term rates in the three and nine months ended September 30, 2018 compared to the same periods in 2017 due to the increases in short-term LIBOR and the Federal funds target rate. The result was an increase of more than 0.60 percentage points in the average rates on total interest-earning assets and total interest-bearing liabilities in the three- and nine-months comparison periods.

The increase in the net interest rate spread in the three- and nine-months comparison periods was due to the net effect of the favorable earnings factors discussed in the previous section. The increase in net interest margin in the three and nine months

ended September 30, 2018 compared to the same periods in 2017 was also driven by higher earnings from funding assets with interest-free capital.

Volume/Rate Analysis

Changes in both average balances (volume) and interest rates influence changes in net interest income, as shown in the following table.

(In millions)	Three Months Ended September 30, 2018 over 2017			Nine Months Ended September 30, 2018 over 2017		
	Volume ⁽¹⁾⁽³⁾	Rate ⁽²⁾⁽³⁾	Total	Volume ⁽¹⁾⁽³⁾	Rate ⁽²⁾⁽³⁾	Total
<u>Increase (decrease) in interest income</u>						
Advances	\$ (40)	\$ 130	\$ 90	\$ (20)	\$ 381	\$ 361
Mortgage loans held for portfolio	4	1	5	11	4	15
Federal funds sold and securities purchased under resale agreements	6	24	30	30	69	99
Interest-bearing deposits in banks	10	3	13	14	9	23
MBS	9	14	23	18	34	52
Other investments	—	—	—	—	—	—
Loans to other FHLBanks	—	—	—	—	—	—
Total	(11)	172	161	53	497	550
<u>Increase (decrease) in interest expense</u>						
Term deposits	—	—	—	—	1	1
Other interest-bearing deposits	—	2	2	—	4	4
Discount Notes	(15)	99	84	31	313	344
Unswapped fixed-rate Bonds	(5)	8	3	—	19	19
Unswapped adjustable-rate Bonds	6	43	49	(2)	120	118
Swapped Bonds	—	3	3	(5)	12	7
Mandatorily redeemable capital stock	—	—	—	(1)	—	(1)
Other borrowings	—	—	—	—	—	—
Total	(14)	155	141	23	469	492
Increase (decrease) in net interest income	\$ 3	\$ 17	\$ 20	\$ 30	\$ 28	\$ 58

(1) Volume changes are calculated as the change in volume multiplied by the prior year rate.

(2) Rate changes are calculated as the change in rate multiplied by the prior year average balance.

(3) Changes that are not identifiable as either volume-related or rate-related, but rather are equally attributable to both volume and rate changes, have been allocated to the volume and rate categories based upon the proportion of the absolute value of the volume and rate changes.

Effect of the Use of Derivatives on Net Interest Income

The following table shows the impact on net interest income from the effect of derivatives and hedging activities. For derivatives designated as a fair value hedge, the net interest settlements of interest receivables or payables related to such derivatives are recognized as adjustments to the interest income or expense of the designated hedged item. The effect on earnings from other components of derivatives, including market value adjustments and net interest settlements on derivatives not receiving hedge accounting, is provided in “Non-Interest Income and Non-Interest Expense.”

(In millions)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
Advances:				
Amortization of hedging activities in net interest income	\$ —	\$ —	\$ (1)	\$ (2)
Net interest settlements included in net interest income	8	(3)	15	(15)
Mortgage loans:				
Amortization of derivative fair value adjustments in net interest income	—	(1)	(1)	(2)
Consolidated Obligation Bonds:				
Net interest settlements included in net interest income	(1)	(1)	(3)	—
Increase (decrease) to net interest income	<u>\$ 7</u>	<u>\$ (5)</u>	<u>\$ 10</u>	<u>\$ (19)</u>

Most of our use of derivatives synthetically convert the intermediate- and long-term fixed interest rates on certain Advances and Bonds to adjustable-coupon rates tied to short-term LIBOR (one- and three-month repricing resets). The positive net effect of derivatives on net interest income in the 2018 comparison periods was primarily due to increases in short-term LIBOR, which resulted in higher net interest settlements received on certain Advances where the fixed interest rates were converted to adjustable-coupon rates. The fluctuation in earnings from the use of derivatives was acceptable because it enabled us to lower market risk exposure by matching actual cash flows between assets and liabilities more closely than would otherwise occur.

Non-Interest Income and Non-Interest Expense

The following table presents non-interest income and non-interest expense.

(Dollars in millions)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2018	2017	2018	2017
<u>Non-interest income (loss)</u>				
Net losses on derivatives and hedging activities	\$ (9)	\$ (7)	\$ (46)	\$ (2)
Net (losses) gains on financial instruments held under fair value option	(4)	—	12	(12)
Other non-interest income, net	4	4	9	10
Total non-interest income (loss)	<u>\$ (9)</u>	<u>\$ (3)</u>	<u>\$ (25)</u>	<u>\$ (4)</u>
<u>Non-interest expense</u>				
Compensation and benefits	\$ 10	\$ 11	\$ 34	\$ 32
Other operating expense	5	5	15	15
Finance Agency	2	2	5	5
Office of Finance	1	1	4	3
Other	1	1	6	5
Total non-interest expense	<u>\$ 19</u>	<u>\$ 20</u>	<u>\$ 64</u>	<u>\$ 60</u>
Average total assets	\$ 100,372	\$ 104,262	\$ 105,982	\$ 101,924
Average regulatory capital	5,331	5,243	5,446	5,131
Total non-interest expense to average total assets ⁽¹⁾	0.08%	0.08%	0.08%	0.08%
Total non-interest expense to average regulatory capital ⁽¹⁾	1.44	1.53	1.56	1.56

(1) Amounts used to calculate percentages are based on dollars in thousands. Accordingly, recalculations based upon the disclosed amounts in millions may not produce the same results.

Non-interest income (loss) decreased \$6 million and \$21 million in the three- and nine-months comparison periods, respectively, primarily due to losses from derivatives and hedging activities, net of (losses) gains on financial instruments held under the fair value option. The table below presents further information on the net effect of derivatives and hedging activities on non-interest income. The increase in non-interest expense in the nine-months comparison period was driven in part by higher compensation and benefit expenses.

Effect of Derivatives and Hedging Activities on Non-Interest Income

The following tables present the net effect of derivatives and hedging activities on non-interest income.

(In millions)	Advances	Investment Securities	Mortgage Loans	Consolidated Obligation Bonds	Balance Sheet ⁽¹⁾	Total
Three Months Ended September 30, 2018						
<u>Net effect of derivatives and hedging activities</u>						
Gains (losses) on fair value hedges	\$ (1)	\$ —	\$ —	\$ —	\$ —	\$ (1)
Gains (losses) on derivatives not receiving hedge accounting	—	—	(1)	10	(1)	8
Net interest settlements on derivatives not receiving hedge accounting	—	—	—	(16)	—	(16)
Net gains (losses) on derivatives and hedging activities	(1)	—	(1)	(6)	(1)	(9)
Gains (losses) on trading securities ⁽²⁾	—	1	—	—	—	1
Gains (losses) on financial instruments held under fair value option ⁽³⁾	—	—	—	(4)	—	(4)
Total net effect on non-interest income	\$ (1)	\$ 1	\$ (1)	\$ (10)	\$ (1)	\$ (12)
Three Months Ended September 30, 2017						
<u>Net effect of derivatives and hedging activities</u>						
Gains (losses) on fair value hedges	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Gains (losses) on derivatives not receiving hedge accounting	—	—	1	(1)	(4)	(4)
Net interest settlements on derivatives not receiving hedge accounting	—	—	—	(3)	—	(3)
Net gains (losses) on derivatives and hedging activities	—	—	1	(4)	(4)	(7)
Gains (losses) on trading securities ⁽²⁾	—	—	—	—	—	—
Gains (losses) on financial instruments held under fair value option ⁽³⁾	—	—	—	—	—	—
Total net effect on non-interest income	\$ —	\$ —	\$ 1	\$ (4)	\$ (4)	\$ (7)

(1) Balance sheet includes swaptions, which are not designated as hedging a specific financial instrument.

(2) Includes only those gains (losses) on trading securities that have an assigned economic derivative; therefore, this line item may not agree to the Statement of Income.

(3) Includes only those gains or losses on financial instruments held at fair value that have an economic derivative "assigned."

(In millions)	Advances	Investment Securities	Mortgage Loans	Consolidated Obligation Bonds	Balance Sheet ⁽¹⁾	Total
Nine Months Ended September 30, 2018						
Net effect of derivatives and hedging activities						
Gains (losses) on fair value hedges	\$ 2	\$ —	\$ —	\$ —	\$ —	\$ 2
Gains (losses) on derivatives not receiving hedge accounting	2	—	(1)	(10)	—	(9)
Net interest settlements on derivatives not receiving hedge accounting	—	—	—	(39)	—	(39)
Net gains (losses) on derivatives and hedging activities	4	—	(1)	(49)	—	(46)
Gains (losses) on trading securities ⁽²⁾	—	—	—	—	—	—
Gains (losses) on financial instruments held under fair value option ⁽³⁾	—	—	—	12	—	12
Total net effect on non-interest income	\$ 4	\$ —	\$ (1)	\$ (37)	\$ —	\$ (34)
Nine Months Ended September 30, 2017						
Net effect of derivatives and hedging activities						
Gains (losses) on fair value hedges	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
Gains (losses) on derivatives not receiving hedge accounting	1	—	4	12	(14)	3
Net interest settlements on derivatives not receiving hedge accounting	(1)	—	—	(4)	—	(5)
Net gains (losses) on derivatives and hedging activities	—	—	4	8	(14)	(2)
Gains (losses) on trading securities ⁽²⁾	—	—	—	—	—	—
Gains (losses) on financial instruments held under fair value option ⁽³⁾	—	—	—	(12)	—	(12)
Total net effect on non-interest income	\$ —	\$ —	\$ 4	\$ (4)	\$ (14)	\$ (14)

(1) Balance sheet includes swaptions, which are not designated as hedging a specific financial instrument.

(2) Includes only those gains (losses) on trading securities that have an assigned economic derivative; therefore, this line item may not agree to the Statement of Income.

(3) Includes only those gains or losses on financial instruments held at fair value that have an economic derivative "assigned."

The total amount of income volatility in derivatives and hedging activities was moderate compared to the notional principal amounts and consistent with the close hedging relationships of our derivative transactions. The higher net losses in the 2018 comparison periods were primarily the result of increases in short-term LIBOR, which drove larger net interest settlement payments associated with certain Bonds where the fixed interest rates were converted to adjustable-coupon rates. The fluctuation in net interest settlements was acceptable because it enabled us to lower market risk exposure by matching actual cash flows between assets and liabilities more closely than would otherwise occur. The volatility was also a result of both unrealized fair value gains and losses on instruments we expect to hold to maturity and the realized costs of utilizing swaptions to hedge market risk exposure associated with mortgage assets.

Segment Information

Note 17 of the Notes to Unaudited Financial Statements presents information on our two operating business segments. We manage financial operations and market risk exposure primarily at the macro level, and within the context of the entire balance sheet, rather than exclusively at the level of individual segments. Under this approach, the market risk/return profile of each segment may not match, or possibly even have the same trends as, what would occur if we managed each segment on a stand-alone basis. The tables below summarize each segment's operating results for the periods shown.

(Dollars in millions)	Traditional Member Finance	MPP	Total
Three Months Ended September 30, 2018			
Net interest income after provision for credit losses	\$ 102	\$ 28	\$ 130
Net income	\$ 70	\$ 22	\$ 92
Average assets	\$ 88,441	\$ 11,931	\$ 100,372
Assumed average capital allocation	\$ 4,661	\$ 629	\$ 5,290
Return on average assets ⁽¹⁾	0.31%	0.73%	0.36%
Return on average equity ⁽¹⁾	5.93%	13.81%	6.87%
Three Months Ended September 30, 2017			
Net interest income after provision for credit losses	\$ 87	\$ 23	\$ 110
Net income	\$ 61	\$ 17	\$ 78
Average assets	\$ 93,593	\$ 10,669	\$ 104,262
Assumed average capital allocation	\$ 4,635	\$ 528	\$ 5,163
Return on average assets ⁽¹⁾	0.26%	0.64%	0.30%
Return on average equity ⁽¹⁾	5.17%	12.98%	5.97%
Nine Months Ended September 30, 2018			
Net interest income after provision for credit losses	\$ 299	\$ 78	\$ 377
Net income	\$ 197	\$ 62	\$ 259
Average assets	\$ 94,236	\$ 11,746	\$ 105,982
Assumed average capital allocation	\$ 4,803	\$ 600	\$ 5,403
Return on average assets ⁽¹⁾	0.28%	0.71%	0.33%
Return on average equity ⁽¹⁾	5.48%	13.86%	6.41%
Nine Months Ended September 30, 2017			
Net interest income after provision for credit losses	\$ 249	\$ 70	\$ 319
Net income	\$ 177	\$ 53	\$ 230
Average assets	\$ 91,665	\$ 10,259	\$ 101,924
Assumed average capital allocation	\$ 4,557	\$ 510	\$ 5,067
Return on average assets ⁽¹⁾	0.26%	0.69%	0.30%
Return on average equity ⁽¹⁾	5.17%	13.93%	6.06%

(1) Amounts used to calculate returns are based on numbers in thousands. Accordingly, recalculations based upon the disclosed amounts in millions may not produce the same results.

Traditional Member Finance Segment

The increases in net income in the three- and nine-months comparison periods were due primarily to higher earnings from funding assets with interest-free capital, the growth in investment balances and higher spreads earned on mortgage-backed securities. However, these positive factors were partially offset by lower spreads on liquidity investments and lower average Advance balances.

MPP Segment

The MPP continued to earn a substantial level of profitability compared to market interest rates, with a moderate amount of market risk and a minimal amount of credit risk. In the first nine months of 2018, the MPP averaged 11 percent of total average assets while accounting for 24 percent of earnings. Net income increased in the three- and nine-months comparison periods primarily due to the rising interest rate environment and growth in average MPP balances.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT RISK MANAGEMENT

Market Risk

Market Value of Equity and Duration of Equity - Entire Balance Sheet

Two key measures of long-term market risk exposure are the sensitivities of the market value of equity and the duration of equity to changes in interest rates and other variables, as presented in the following tables for various instantaneous and permanent interest rate shocks (in basis points). We compiled average results using data for each month end. Given the current level of rates, some down rate shocks are nonparallel scenarios, with short-term rates decreasing less than long-term rates such that no rate falls below zero.

Market Value of Equity

(Dollars in millions)	Down 300	Down 200	Down 100	Flat Rates	Up 100	Up 200	Up 300
<u>Average Results</u>							
<u>2018 Year-to-Date</u>							
Market Value of Equity	\$ 4,967	\$ 5,184	\$ 5,339	\$ 5,297	\$ 5,215	\$ 5,145	\$ 5,079
% Change from Flat Case	(6.2)%	(2.1)%	0.8 %	—	(1.5)%	(2.9)%	(4.1)%
<u>2017 Full Year</u>							
Market Value of Equity	\$ 4,702	\$ 4,765	\$ 4,973	\$ 5,021	\$ 4,956	\$ 4,881	\$ 4,815
% Change from Flat Case	(6.3)%	(5.1)%	(0.9)%	—	(1.3)%	(2.8)%	(4.1)%
<u>Month-End Results</u>							
<u>September 30, 2018</u>							
Market Value of Equity	\$ 4,786	\$ 5,042	\$ 5,160	\$ 5,094	\$ 5,000	\$ 4,933	\$ 4,880
% Change from Flat Case	(6.0)%	(1.0)%	1.3 %	—	(1.8)%	(3.2)%	(4.2)%
<u>December 31, 2017</u>							
Market Value of Equity	\$ 4,764	\$ 4,837	\$ 5,095	\$ 5,165	\$ 5,097	\$ 5,027	\$ 4,955
% Change from Flat Case	(7.8)%	(6.3)%	(1.3)%	—	(1.3)%	(2.7)%	(4.1)%

Duration of Equity

(In years)	Down 300	Down 200	Down 100	Flat Rates	Up 100	Up 200	Up 300
<u>Average Results</u>							
2018 Year-to-Date	(4.4)	(4.7)	(0.8)	1.7	1.3	1.3	1.3
2017 Full Year	(1.7)	(4.2)	(3.8)	0.4	1.6	1.4	1.4
<u>Month-End Results</u>							
September 30, 2018	(5.3)	(4.3)	(0.5)	1.9	1.3	1.0	1.0
December 31, 2017	(2.0)	(5.3)	(4.4)	0.5	1.5	1.4	1.5

The overall market risk exposure to changing interest rates was stable, at a moderate level, and well within policy limits. The durations of equity provide an estimate of the change in market value of equity for a 1.00 percentage point further change in interest rates from the rate shock level.

Based on the totality of our risk analysis, we expect that profitability, defined as the level of ROE compared with short-term market rates, will remain competitive unless interest rates change by extremely large amounts in a short period of time. Decreases in long-term interest rates, even by two percentage points, would still result in profitability being well above market interest rates. Similarly, we believe that profitability would not become uncompetitive in a rising rate environment unless

interest rates were to permanently increase in a short period of time by four percentage points or more and persist at the higher levels for a long period of time.

Market Risk Exposure of the Mortgage Assets Portfolio

The mortgage assets portfolio normally accounts for almost all market risk exposure because of prepayment volatility that we cannot completely hedge while maintaining sufficient net spreads. Sensitivities of the market value of equity allocated to the mortgage assets portfolio under interest rate shocks (in basis points) are shown below. At September 30, 2018, the average mortgage assets portfolio had an assumed capital allocation of \$1.3 billion based on the entire balance sheet's regulatory capital-to-assets ratio. Average results are compiled using data for each month end. The market value sensitivities are one measure we use to analyze the portfolio's estimated market risk exposure.

% Change in Market Value of Equity-Mortgage Assets Portfolio

	Down 300	Down 200	Down 100	Flat Rates	Up 100	Up 200	Up 300
<u>Average Results</u>							
2018 Year-to-Date	(35.7)%	(15.5)%	0.2 %	—	(3.6)%	(6.5)%	(9.4)%
2017 Full Year	(36.1)%	(29.1)%	(6.8)%	—	(3.8)%	(8.6)%	(12.8)%
<u>Month-End Results</u>							
September 30, 2018	(39.1)%	(13.3)%	1.4 %	—	(4.2)%	(6.5)%	(7.8)%
December 31, 2017	(39.4)%	(32.2)%	(8.7)%	—	(2.4)%	(4.9)%	(7.8)%

The risk exposure of the mortgage assets portfolio during the first nine months of 2018 compared to all of 2017 was lower in both the rising and declining rate scenarios driven by our preference to keep our exposure to market risk low along with normal changes in balance sheet composition. We believe the mortgage asset portfolio will continue to provide an acceptable risk adjusted return consistent with our risk appetite philosophy.

Capital Adequacy

Retained Earnings

We must hold sufficient capital to protect against exposure to various risks, including market, credit, and operational. We regularly conduct a variety of measurements and assessments for capital adequacy. At September 30, 2018, our capital management policy set forth a range of \$250 million to \$450 million as the minimum amount of retained earnings we believe is necessary to mitigate impairment risk and to provide for dividend stability from factors that could cause earnings to be volatile.

The following table presents retained earnings.

(In millions)	September 30, 2018	December 31, 2017
Unrestricted retained earnings	\$ 633	\$ 617
Restricted retained earnings ⁽¹⁾	375	323
Total retained earnings	\$ 1,008	\$ 940

(1) Pursuant to the FHLBank System's Joint Capital Enhancement Agreement we are not permitted to distribute as dividends.

As noted in the table above, our current balance of retained earnings exceeds the policy range, which we expect will continue to be the case as we bolster capital adequacy over time by allocating a portion of earnings to the restricted retained earnings account.

Market Capitalization Ratios

We measure two sets of market capitalization ratios. One measures the market value of equity (i.e., total capital) relative to the par value of regulatory capital stock (which is GAAP capital stock and mandatorily redeemable capital stock). The other measures the market value of total capital relative to the book value of total capital, which includes all components of capital. The measures provide a point-in-time indication of the FHLB's liquidation or franchise value and can also serve as a measure of realized or potential market risk exposure.

The following table presents the market value of equity to regulatory capital stock (excluding retained earnings) for several interest rate environments.

	September 30, 2018	December 31, 2017
Market Value of Equity to Par Value of Regulatory Capital Stock - Base Case (Flat Rates) Scenario	119%	121%
Market Value of Equity to Par Value of Regulatory Capital Stock - Down Shock ⁽¹⁾	121	119
Market Value of Equity to Par Value of Regulatory Capital Stock - Up Shock ⁽²⁾	116	118

(1) Represents a down shock of 100 basis points.

(2) Represents an up shock of 200 basis points.

A base case value below 100 percent (par) could indicate that, in the remote event of an immediate liquidation scenario involving redemption of all capital stock, capital stock may be returned to stockholders at a value below par. This could be due to experiencing risks that lower the market value of capital and/or to having an insufficient amount of retained earnings. In the first nine months of 2018, the market capitalization ratios in the scenarios presented continued to be above our policy requirements. Although the base case ratio of 119 percent was slightly lower at September 30, 2018 compared to the end of 2017, it was well above policy limits because retained earnings were 24 percent of regulatory capital stock at September 30, 2018 and we maintained risk exposures at moderate levels.

The following table presents the market value of equity to the book value of total capital.

	September 30, 2018	December 31, 2017
Market Value of Equity to Book Value of Capital - Base Case (Flat Rates) Scenario ⁽¹⁾	97%	99%
Market Value of Equity to Book Value of Capital - Down Shock ⁽¹⁾⁽²⁾	98	98
Market Value of Equity to Book Value of Capital - Up Shock ⁽¹⁾⁽³⁾	94	97

(1) Capital includes total capital and mandatorily redeemable capital stock.

(2) Represents a down shock of 100 basis points.

(3) Represents an up shock of 200 basis points.

A base-case value below par indicates that we have realized or could realize risks (especially market risk) such that the market value of total capital owned by stockholders, which includes regulatory capital stock and retained earnings, is below par value (i.e., below 100 percent of the total book value). The base-case ratio of 97 percent at September 30, 2018 indicates that the market value of total capital is \$178 million below the par value of total capital. In a scenario in which interest rates increase 200 basis points, the market value of total capital would be \$339 million below the par value of total capital. This indicates that in a liquidation scenario, stockholders would not receive the full sum of their total equity ownership in the FHLB, which include both capital stock and retained earnings. We believe the likelihood of a liquidation scenario is extremely remote; and therefore, we accept the risk of diluting equity ownership in such a scenario.

Credit Risk

Overview

Our business entails a significant amount of inherent credit risk exposure. We believe our risk management practices, discussed below, bring the amount of residual credit risk to a minimal level. We have no loan loss reserves or impairment recorded for Credit Services, investments, and derivatives and a minimal amount of legacy credit risk exposure to the MPP.

Credit Services

Overview: We have policies and practices to manage credit risk exposure from our secured lending activities, which include Advances and Letters of Credit. The objective of our credit risk management is to equalize risk exposure across members and counterparties to a zero level of expected losses, consistent with our conservative risk management principles and desire to have virtually no residual credit risk related to member borrowings.

Collateral: We require each member to provide us a security interest in eligible collateral before it can undertake any secured borrowing. Eligible collateral includes single-family loans, multi-family loans, home equity loans and lines of credit, commercial real estate, bond securities and farm real estate. The estimated value of pledged collateral is discounted in order to offset market, credit and liquidity risks that may affect the collateral's realizable value if it must be liquidated. Over-collateralization by one member is not applied to another member. At September 30, 2018, our policy of over-collateralization resulted in total collateral pledged of \$338.4 billion to serve total borrowing capacity of \$276.3 billion of which \$204.4 billion was unused. The collateral composition remained relatively stable compared to the end of 2017.

Borrowing Capacity/Lendable Value: We determine borrowing capacity against pledged collateral by applying collateral discounts, or haircuts, to the value of the collateral. These haircuts result in Lendable Value Rates (LVRs) that are less than the amount of pledged collateral.

LVRs are determined by statistical analysis and management assumptions relating to historical price volatility, inherent credit risks, liquidation costs, and the current credit and economic environment. We apply LVR results to the estimated values of pledged assets. LVRs vary among pledged assets and members based on the member institution type, the financial strength of the member institution, the form of valuation, the issuer of bond collateral or the quality of securitized assets, the marketability of the pledged assets, the payment performance of pledged loan collateral, and the quality of loan collateral as reflected in the manner in which it was underwritten.

Internal Credit Ratings: We perform credit underwriting of our member and nonmember borrowers and assign them an internal credit rating. These credit ratings are based on internal ratings models, credit analyses and consideration of credit ratings from independent credit rating organizations. Credit ratings are used in conjunction with other measures of credit risk in managing secured credit risk exposure.

Member Failures, Closures, and Receiverships: There were no member failures in 2018 through the date of this filing.

MPP

Overview: We believe that the residual amount of credit risk exposure to loans in the MPP is minimal, based on the same factors described in the 2017 Annual Report on Form 10-K. We believe, based on our analysis, that future credit losses will not harm capital adequacy and will not significantly affect profitability except under the most extreme and unlikely credit conditions.

Conventional Loan Portfolio Characteristics: The levels of loan-to-value ratios in the last several years are consistent with the portfolio's excellent credit quality. At September 30, 2018, the weighted average loan-to-value ratios for conventional loans based on origination values and estimated current values were 74 percent and 60 percent, respectively. These ratios were similar at December 31, 2017.

Credit Performance: The table below provides an analysis of conventional loans delinquent or in the process of foreclosure, along with the national average serious delinquency rate.

(Dollars in millions)	Conventional Loan Delinquencies	
	September 30, 2018	December 31, 2017
Early stage delinquencies - unpaid principal balance ⁽¹⁾	\$ 35	\$ 43
Serious delinquencies - unpaid principal balance ⁽²⁾	\$ 13	\$ 17
Early stage delinquency rate ⁽³⁾	0.4%	0.5%
Serious delinquency rate ⁽⁴⁾	0.1%	0.2%
National average serious delinquency rate ⁽⁵⁾	1.7%	2.0%

(1) Includes conventional loans 30 to 89 days delinquent and not in foreclosure.

(2) Includes conventional loans that are 90 days or more past due or where the decision of foreclosure or a similar alternative such as pursuit of deed-in-lieu has been reported.

(3) Early stage delinquencies expressed as a percentage of the total conventional loan portfolio.

(4) Serious delinquencies expressed as a percentage of the total conventional loan portfolio.

(5) National average number of fixed-rate prime and subprime conventional loans that are 90 days or more past due or in the process of foreclosure is based on the most recent national delinquency data available. The September 30, 2018 rate is based on June 30, 2018 data.

The MPP has experienced a small amount of delinquencies, with delinquency rates continuing to be well below national averages. This further supports our view that the overall portfolio is comprised of high-quality, well-performing loans.

Credit Enhancements: Conventional mortgage loans are supported against credit losses by various combinations of primary mortgage insurance (PMI), supplemental mortgage insurance (SMI) (for loans purchased before February 2011), and the Lender Risk Account (LRA). The LRA is a hold back of a portion of the initial purchase price to cover expected credit losses for a specific pool of loans. Starting after five years from the loan purchase date, we may return the hold back to Participating Financial Institutions (PFIs) if they manage credit risk to predefined acceptable levels of exposure on the loan pools they sell to us. As a result, some pools of loans may have sufficient credit enhancements to recapture all losses while other pools of loans may not. The LRA had balances of \$208 million and \$201 million at September 30, 2018 and December 31, 2017, respectively. For more information, see Note 9 of the Notes to Unaudited Financial Statements.

Credit Losses: The following table shows the effects of credit enhancements on the estimation of credit losses at the noted periods. Estimated incurred credit losses, after credit enhancements, are accounted for in the allowance for credit losses or as a charge off (i.e., a reduction to the principal of mortgage loans held for portfolio).

(In millions)	September 30, 2018	December 31, 2017
Estimated incurred credit losses, before credit enhancements	\$ (4)	\$ (6)
Estimated amounts deemed recoverable by:		
Primary mortgage insurance	—	1
Supplemental mortgage insurance	2	3
Lender Risk Account	1	1
Estimated incurred credit losses, after credit enhancements	<u>\$ (1)</u>	<u>\$ (1)</u>

The minimal amount of incurred losses provides further support on the overall health of the portfolio. Credit risk exposure depends on the actual and potential credit performance of the loans in each pool compared to the pool's equity (on individual loans) and credit enhancements, including PMI, the LRA, and SMI. We have assessed that we do not have any credit risk exposure to our PMI providers, and our estimation of credit exposure to SMI providers was not material at September 30, 2018 or December 31, 2017.

In addition to the allowance for credit losses recorded, we regularly analyze potential ranges of additional lifetime credit risk exposure for the loans in the MPP. Even under adverse macroeconomic scenarios, we expect that further credit losses would not significantly decrease profitability.

Investments

Liquidity Investments: We purchase liquidity investments from counterparties that have a strong ability to repay principal and interest. Liquidity investments are either unsecured, guaranteed or supported by the U.S. government, or secured (i.e., collateralized). For unsecured liquidity investments, we invest in the debt securities of highly rated, investment-grade institutions, have appropriate and conservative limits on dollar and maturity exposure to each institution, and have strong credit underwriting practices, including active monitoring of credit quality of our counterparties and of the environment in which they operate.

The following table presents the carrying value of liquidity investments outstanding in relation to the counterparties' lowest long-term credit ratings provided by Standard & Poor's, Moody's, and/or Fitch Advisory Services. For resale agreements, the ratings shown are based on ratings of the associated collateral.

(In millions)

	September 30, 2018		
	Long-Term Rating		
	AA	A	Total
<u>Unsecured Liquidity Investments</u>			
Federal funds sold	\$ 3,400	\$ 5,510	\$ 8,910
Certificates of deposit	200	1,850	2,050
Total unsecured liquidity investments	<u>3,600</u>	<u>7,360</u>	<u>10,960</u>
<u>Guaranteed/Secured Liquidity Investments</u>			
Securities purchased under agreements to resell	4,491	—	4,491
U.S. Treasury obligations	36	—	36
GSE obligations	107	—	107
Total guaranteed/secured liquidity investments	<u>4,634</u>	<u>—</u>	<u>4,634</u>
Total liquidity investments	<u>\$ 8,234</u>	<u>\$ 7,360</u>	<u>\$ 15,594</u>
	December 31, 2017		
	Long-Term Rating		
	AA	A	Total
<u>Unsecured Liquidity Investments</u>			
Federal funds sold	\$ 1,465	\$ 2,185	\$ 3,650
Certificates of deposit	800	100	900
Total unsecured liquidity investments	<u>2,265</u>	<u>2,285</u>	<u>4,550</u>
<u>Guaranteed/Secured Liquidity Investments</u>			
Securities purchased under agreements to resell	7,702	—	7,702
U.S. Treasury obligations	34	—	34
Total guaranteed/secured liquidity investments	<u>7,736</u>	<u>—</u>	<u>7,736</u>
Total liquidity investments	<u>\$ 10,001</u>	<u>\$ 2,285</u>	<u>\$ 12,286</u>

During the first nine months of 2018, we purchased a portion of our total liquidity investments from counterparties for which the investments are secured with collateral (secured resale agreements). We believe these investments present virtually no credit risk exposure to us.

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The following table presents credit ratings of our unsecured investment credit exposure by the domicile of the counterparty or the domicile of the counterparty's parent for U.S. branches and agency offices of foreign commercial banks.

(In millions)

Domicile of Counterparty	September 30, 2018		
	Counterparty Rating ⁽¹⁾		
	AA	A	Total
Domestic	\$ 1,500	\$ 1,600	\$ 3,100
U.S. branches and agency offices of foreign commercial banks:			
Canada	500	1,610	2,110
Australia	1,400	—	1,400
Germany	—	1,000	1,000
Netherlands	—	900	900
United Kingdom	—	800	800
Norway	—	700	700
Sweden	200	150	350
France	—	300	300
Belgium	—	300	300
Total U.S. branches and agency offices of foreign commercial banks	2,100	5,760	7,860
Total unsecured investment credit exposure	\$ 3,600	\$ 7,360	\$ 10,960

(1) Represents the lowest long-term credit rating provided by Standard & Poor's, Moody's, and/or Fitch Advisory Services.

The following table presents the remaining contractual maturity of our unsecured investment credit exposure by the domicile of the counterparty or the domicile of the counterparty's parent for U.S. branches and agency offices of foreign commercial banks.

(In millions)

Domicile of Counterparty	September 30, 2018			
	Overnight	Due 2 days through 30 days	Due 31 days through 90 days	Total
Domestic	\$ 3,100	\$ —	\$ —	\$ 3,100
U.S. branches and agency offices of foreign commercial banks:				
Canada	1,810	—	300	2,110
Australia	1,400	—	—	1,400
Germany	300	300	400	1,000
Netherlands	800	—	100	900
United Kingdom	800	—	—	800
Norway	400	—	300	700
Sweden	—	350	—	350
France	300	—	—	300
Belgium	—	—	300	300
Total U.S. branches and agency offices of foreign commercial banks	5,810	650	1,400	7,860
Total unsecured investment credit exposure	\$ 8,910	\$ 650	\$ 1,400	\$ 10,960

At September 30, 2018, all of the \$11.0 billion of unsecured investment exposure was to counterparties with holding companies domiciled in countries receiving either AAA or AA long-term sovereign ratings. Furthermore, we restrict a significant portion of unsecured lending to overnight maturities, which further limits risk exposure to these counterparties. By Finance Agency regulation, all counterparties exposed to non-U.S. countries are required to be domestic U.S. branches of foreign counterparties. We also limit exposure to counterparties and countries that could have significant direct or indirect exposure to European sovereign debt.

MBS:

GSE MBS

At September 30, 2018, \$13.8 billion of MBS held were GSE securities issued by Fannie Mae and Freddie Mac, which provide credit safeguards by guaranteeing either timely or ultimate payments of principal and interest. We believe that the conservatorships of Fannie Mae and Freddie Mac lower the chance that they would not be able to fulfill their credit guarantees and that the securities issued by these two GSEs are effectively government guaranteed. In addition, based on the data available to us and our purchase practices, we believe that most of the mortgage loans backing our GSE MBS are of high quality with acceptable credit performance.

MBS Issued by Other Government Agencies

We also invest in MBS issued and guaranteed by Ginnie Mae and the NCUA. These investments totaled \$2.2 billion at September 30, 2018. We believe that the strength of the issuers' guarantees and backing by the full faith and credit of the U.S. government is sufficient to protect us against credit losses on these securities.

Derivatives

Credit Risk Exposure: We mitigate most of the credit risk exposure resulting from derivative transactions through collateralization or use of daily settled contracts. The table below presents the credit ratings for derivative positions to which we had credit risk exposure at September 30, 2018.

(In millions)

	Total Notional	Net Derivatives Fair Value Before Collateral	Cash Collateral Pledged to (from) Counterparties	Net Credit Exposure to Counterparties
Nonmember counterparties:				
<u>Asset positions with credit exposure:</u>				
Uncleared derivatives:				
A-rated	\$ 265	\$ 1	\$ —	\$ 1
Total uncleared derivatives	265	1	—	1
Cleared derivatives ⁽¹⁾	6,538	2	17	19
<u>Liability positions with credit exposure:</u>				
Uncleared derivatives:				
A-rated	15	—	—	—
Total uncleared derivatives	15	—	—	—
Cleared derivatives ⁽¹⁾	5,364	(3)	49	46
Total derivative positions with credit exposure to nonmember counterparties	12,182	—	66	66
Member institutions ⁽²⁾	42	—	—	—
Total	\$ 12,224	\$ —	\$ 66	\$ 66

(1) Represents derivative transactions cleared with LCH Ltd. and CME Clearing, the FHLB's clearinghouses, which are not rated. LCH Ltd.'s ultimate parent, London Stock Exchange Group Plc is rated A3 by Moody's and A- by Standard & Poor's. CME Clearing's parent, CME Group Inc. is rated Aa3 by Moody's and AA- by Standard & Poor's.

(2) Represents Mandatory Delivery Contracts.

Our exposure to cleared derivatives is primarily associated with our requirement to post initial margin through the clearing agent to the Derivatives Clearing Organizations. The amount of cash collateral pledged as initial margin has increased from our use of cleared derivatives. However, the use of cleared derivatives mitigates credit risk exposure because a central counterparty is substituted for individual counterparties.

At September 30, 2018, the gross and net exposure of uncleared derivatives with residual credit risk exposure was \$1 million. Gross exposure would likely increase if interest rates rise and could increase if the composition of our derivatives change. However, contractual collateral provisions in these derivatives would limit net exposure to acceptable levels.

Although we cannot predict if we will realize credit risk losses from any of our derivatives counterparties, we believe that all of the counterparties will be able to continue making timely interest payments and, more generally, to continue to satisfy the terms and conditions of their derivative contracts with us. As of September 30, 2018, we had \$549 million of notional principal of interest rate swaps with one member, JPMorgan Chase Bank, N.A., which also had outstanding credit services with us. Due to the amount of market value collateralization, we had no outstanding credit exposure to this counterparty related to interest rate swaps outstanding.

Liquidity Risk

Liquidity Overview

We strive to be in a liquidity position at all times to meet the borrowing needs of our members and to meet all current and future financial commitments. This objective is achieved 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 assets and liabilities. Our liquidity position complies with the FHLBank Act, Finance Agency regulations, and internal policies.

The FHLBank System's primary source of funds is the sale of Consolidated Obligations in the capital markets. Our ability to obtain funds through the sale of Consolidated Obligations at acceptable interest costs depends on the financial market's perceived riskiness of the Obligations and on prevailing conditions in the capital markets, particularly the short-term capital markets. The System's favorable debt ratings, the implicit U.S. government backing of our debt, and our effective risk management practices are instrumental in ensuring stable and satisfactory access to the capital markets.

We believe our liquidity position, as well as that of the System, continued to be strong during the first nine months of 2018. Our overall ability to effectively fund our operations through debt issuances remained sufficient. Investor demand for System debt was robust in the first nine months of 2018. Although we can make no assurances, we expect this to continue to be the case. We believe the possibility of a liquidity or funding crisis in the System that would impair our ability to participate, on a cost-effective basis, in issuances of debt, service outstanding debt, maintain adequate capitalization, or pay competitive dividends is remote.

The System works collectively to manage and monitor the System-wide liquidity and funding risks. Liquidity risk includes the risk the System could have difficulty rolling over short-term Obligations when market conditions change, also called refinancing risk. The System has a large reliance on short-term funding; therefore, it has a sharp focus on managing liquidity risk to very low levels. As shown on the Statements of Cash Flows, in the first nine months of 2018, our portion of the System's debt issuances totaled \$424.3 billion for Discount Notes and \$19.5 billion for Bonds. Access to short-term debt markets has been reliable because investors, driven by changing liquidity preferences and risk aversion, have sought the System's short-term debt, which has led to increased utilization of debt maturing in one year or less.

See the Notes to Unaudited Financial Statements for more detailed information regarding maturities of certain financial assets and liabilities which are instrumental in determining the amount of liquidity risk. In addition to contractual maturities, other assumptions regarding cash flows such as estimated prepayments, embedded call optionality, and scheduled amortization are considered when managing liquidity risks.

Liquidity Management and Regulatory Requirements

We manage liquidity risk by ensuring compliance with our regulatory liquidity requirements and regularly monitoring other metrics. In particular, current Finance Agency guidance requires us to target at least 5 to 15 consecutive days of a positive amount of liquidity based on specific assumptions under two scenarios. We target holding at least three extra days of positive liquidity under each scenario, although as market conditions warrant we may hold, and often do hold, additional amounts. We also meet operational and contingency liquidity requirements. We satisfied the operational liquidity requirement by both meeting a contingency liquidity requirement, discussed below, and because we were able to adequately access the capital markets to issue debt. In addition, we focus on maintaining an adequate liquidity balance and a funding balance between our financial assets and financial liabilities. As discussed in the "Regulatory and Legislative Risk" section of "Executive Overview," the Finance Agency issued a final Advisory Bulletin in August 2018 on expectations with respect to the maintenance of sufficient liquidity for a specified time and guidance related to asset/liability maturity funding gap limits. Portions of the new guidance will be implemented beginning December 31, 2018, with further implementation on March 31, 2019, and full implementation on December 31, 2019.

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Contingency liquidity risk is the potential inability to meet liquidity needs because our access to the capital markets to issue Consolidated Obligations is restricted or suspended for a period of time due to a market disruption, operational failure, or real or perceived credit quality problems. We continued to hold an ample amount of liquidity reserves to protect against contingency liquidity risk. The following table presents the components of the contingency liquidity requirement.

(In millions)	<u>September 30, 2018</u>	<u>December 31, 2017</u>
<u>Contingency Liquidity Requirement</u>		
Total Contingency Liquidity Reserves ⁽¹⁾	\$ 33,864	\$ 40,850
Total Requirement ⁽²⁾	(20,591)	(32,349)
Excess Contingency Liquidity Available	<u>\$ 13,273</u>	<u>\$ 8,501</u>

(1) Includes, among others, cash, overnight Federal funds, overnight deposits, self-liquidating term Federal funds, 95 percent of the market value of available-for-sale negotiable securities, and 75 percent of the market value of certain held-to-maturity obligations, including obligations of the United States, U.S. government agency obligations and MBS.

(2) Includes net liabilities maturing in the next seven business days, assets traded not yet settled, Advance commitments outstanding, Advances maturing in the next seven business days, and a three percent hypothetical increase in Advances.

To support our member deposits, we also must meet a statutory deposit reserve requirement. The sum of our investments in obligations of the United States, deposits in eligible banks or trust companies, and Advances with a final maturity not exceeding five years must equal or exceed the current amount of member deposits. The following table presents the components of this liquidity requirement.

(In millions)	<u>September 30, 2018</u>	<u>December 31, 2017</u>
<u>Deposit Reserve Requirement</u>		
Total Eligible Deposit Reserves	\$ 67,685	\$ 73,728
Total Member Deposits	(1,769)	(649)
Excess Deposit Reserves	<u>\$ 65,916</u>	<u>\$ 73,079</u>

Contractual Obligations

The following table summarizes our contractual obligations at September 30, 2018. We believe that, as in the past, we will continue to have sufficient liquidity, including from access to the debt markets to issue Consolidated Obligations, to satisfy these obligations on a timely basis.

(In millions)	<u>< 1 year</u>	<u>1 < 3 years</u>	<u>3 < 5 years</u>	<u>> 5 years</u>	<u>Total</u>
<u>Contractual Obligations</u>					
Long-term debt (Bonds) - par ⁽¹⁾	\$ 23,221	\$ 12,747	\$ 5,697	\$ 5,254	\$ 46,919
Operating leases (include premises and equipment)	1	2	2	3	8
Mandatorily redeemable capital stock	18	—	3	1	22
Commitments to fund mortgage loans	298	—	—	—	298
Pension and other postretirement benefit obligations	2	5	5	31	43
Total Contractual Obligations	<u>\$ 23,540</u>	<u>\$ 12,754</u>	<u>\$ 5,707</u>	<u>\$ 5,289</u>	<u>\$ 47,290</u>

(1) Does not include Discount Notes and contractual interest payments related to Bonds. Total is based on contractual maturities; the actual timing of payments could be affected by factors affecting redemptions.

Off-Balance Sheet Arrangements

The following table summarizes our off-balance sheet items at September 30, 2018. For more information, see Note 19 of the Notes to Unaudited Financial Statements.

(In millions)	<u>< 1 year</u>	<u>1 < 3 years</u>	<u>3 < 5 years</u>	<u>> 5 years</u>	<u>Total</u>
<u>Off-balance sheet items ⁽¹⁾</u>					
Standby Letters of Credit	\$ 13,658	\$ 94	\$ 184	\$ 16	\$ 13,952
Standby bond purchase agreements	23	55	—	—	78
Consolidated Obligations traded, not yet settled	1,669	10	25	5	1,709
Total off-balance sheet items	<u>\$ 15,350</u>	<u>\$ 159</u>	<u>\$ 209</u>	<u>\$ 21</u>	<u>\$ 15,739</u>

(1) Represents notional amount of off-balance sheet obligations.

Member Concentration Risk

We regularly assess concentration risks from business activity. We believe that the concentration of Advance activity is consistent with our risk management philosophy, and the impact of borrower concentration on market risk, credit risk, and operational risk, after considering mitigating controls, is minimal.

Operational Risks

There were no material developments regarding our operational risk exposure during the first nine months of 2018.

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Information required by this Item is set forth under the caption “Quantitative and Qualitative Disclosures About Risk Management” in Part I, Item 2, of this Report.

Item 4. Controls and Procedures.

DISCLOSURE CONTROLS AND PROCEDURES

As of September 30, 2018, the FHLB's management, including its principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (the “Exchange Act”). Based upon that evaluation, these two officers each concluded that, as of September 30, 2018, the FHLB maintained effective disclosure controls and procedures designed to ensure that information required to be disclosed in the reports that it files under the Exchange Act is (1) accumulated and communicated to management as appropriate to allow timely decisions regarding disclosure and (2) recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission.

CHANGES IN INTERNAL CONTROL OVER FINANCIAL REPORTING

As of September 30, 2018, the FHLB's management, including its principal executive officer and principal financial officer, evaluated the FHLB's internal control over financial reporting. Based upon that evaluation, these two officers each concluded that there were no changes in the FHLB's internal control over financial reporting that occurred during the quarter ended September 30, 2018 that materially affected, or are reasonably likely to materially affect, the FHLB's internal control over financial reporting.

PART II - OTHER INFORMATION

Item 1A. Risk Factors.

For a discussion of our risk factors, see Part I, Item 1A. "Risk Factors" in our 2017 Annual Report on Form 10-K. There have been no material changes from the risk factors in our 2017 Annual Report on Form 10-K.

Item 5. Other Information.

PricewaterhouseCoopers LLP (PwC) serves as the independent registered public accounting firm for the FHLB. Rule 201(c)(1)(ii)(A) of SEC Regulation S-X (the Loan Rule) prohibits an accounting firm, such as PwC, from having certain financial relationships with its audit clients and affiliated entities. Specifically, the Loan Rule provides, in relevant part, that an accounting firm generally would not be independent if it or a covered person in the firm receives a loan from a lender that is a "record or beneficial owner of more than ten percent of the audit client's equity securities." A covered person in the firm includes personnel on the audit engagement team, personnel in the chain of command, partners and managers who provide ten or more hours of non-audit services to the audit client, and partners in the office where the lead engagement partner practices in connection with the client.

PwC has advised the FHLB that for the period ended September 30, 2018, PwC and certain covered persons had borrowing relationships with two FHLB members (referred below as the "lenders") who own more than ten percent of the FHLB's capital stock, which under the Loan Rule, may reasonably be thought to bear on PwC's independence with respect to the FHLB. The FHLB is providing this disclosure to explain the facts and circumstances, as well as PwC's and the Audit Committee's conclusions, concerning PwC's objectivity and impartiality with respect to the audit of the FHLB.

PwC advised the Audit Committee of the Board that it believes that, in light of the facts of these borrowing relationships, its ability to exercise objective and impartial judgment on all matters encompassed within PwC's audit engagement has not been impaired and that a reasonable investor with knowledge of all relevant facts and circumstances would reach the same conclusion. PwC has advised the Audit Committee that this conclusion is based in part on the following considerations:

- the firm's borrowings are in good standing and neither lender has the right to take action against PwC, as borrower, in connection with the financings;
- the debt balances outstanding are immaterial to PwC and to each lender;
- PwC has borrowing relationships with a diverse group of lenders, therefore PwC is not dependent on any single lender or group of lenders; and
- the PwC audit engagement team has no involvement in PwC's treasury function and PwC's treasury function has no oversight or ability to influence the PwC audit engagement team.

Additionally, the Audit Committee assessed PwC's ability to perform an objective and impartial audit, including consideration of the ownership structure of the FHLB, the limited voting rights of members and the composition of the Board of Directors. In addition to the above listed considerations, the Audit Committee considered the following:

- although the lenders owned more than ten percent of the FHLB's capital stock, the lenders' voting rights are each less than ten percent;
- no individual officer or director that serves on the Board of Directors has the ability to significantly influence the FHLB based on the composition of the Board of Directors; and
- as of September 30, 2018, and as of the date of the filing of this Form 10-Q, no officer or director of either lender served on the Board of Directors of the FHLB.

Based on this evaluation, the Audit Committee has concluded that PwC's ability to exercise objective and impartial judgment on all issues encompassed within PwC's audit engagement has not been impaired.

INDEX OF EXHIBITS

<u>Exhibit Number ⁽¹⁾</u>	<u>Description of exhibit</u>	<u>Document filed or furnished, as indicated below</u>
31.1	Rule 13a-14(a)/15d-14(a) Certification of Principal Executive Officer	Filed Herewith
31.2	Rule 13a-14(a)/15d-14(a) Certification of Principal Financial Officer	Filed Herewith
32	Section 1350 Certifications	Furnished Herewith
101.INS	XBRL Instance Document	Filed Herewith
101.SCH	XBRL Taxonomy Extension Schema Document	Filed Herewith
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document	Filed Herewith
101.LAB	XBRL Taxonomy Extension Label Linkbase Document	Filed Herewith
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document	Filed Herewith
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document	Filed Herewith

(1) Numbers coincide with Item 601 of Regulation S-K.

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Andrew S. Howell, certify that:

1. I have reviewed this quarterly report on Form 10-Q of the Federal Home Loan Bank of Cincinnati;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2018

/s/ Andrew S. Howell

Andrew S. Howell

President and Chief Executive Officer

RULE 13a-14(a)/15d-14(a) CERTIFICATION

I, Stephen J. Sponaugle, certify that:

1. I have reviewed this quarterly report on Form 10-Q of the Federal Home Loan Bank of Cincinnati;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 8, 2018

/s/ Stephen J. Sponaugle

Stephen J. Sponaugle
Executive Vice President-Chief Financial Officer

SECTION 1350 CERTIFICATIONS

In connection with the Quarterly Report of the Federal Home Loan Bank of Cincinnati (the FHLB) on Form 10-Q for the period ending September 30, 2018 as filed with the Securities and Exchange Commission on the date hereof (the Report), each of the undersigned officers certifies, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the FHLB.

/s/ Andrew S. Howell

Andrew S. Howell
President and Chief Executive Officer
November 8, 2018

/s/ Stephen J. Sponaugle

Stephen J. Sponaugle
Executive Vice President-Chief Financial Officer
November 8, 2018