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, 2019

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	**31-6000228**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
600 Atrium Two, P.O. Box 598, Cincinnati, OH	**45201-0598**
(Address of principal executive offices)	*(Zip Code)*

(513) 852-7500
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act: None

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, a 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 ☒	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

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. As of October 31, 2019, the registrant had 35,282,272 shares of capital stock outstanding, which included stock classified as mandatorily redeemable.

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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, 2019	December 31, 2018
ASSETS		
Cash and due from banks	$ 15,417	$ 10,037
Interest-bearing deposits	599,201	122
Securities purchased under agreements to resell	1,839,576	4,402,208
Federal funds sold	14,082,000	10,793,000
Investment securities:		
Trading securities	11,416,483	223,980
Available-for-sale securities	434,177	2,402,897
Held-to-maturity securities (includes $0 and $0 pledged as collateral at September 30, 2019 and December 31, 2018, respectively, that may be repledged) [(a)]	14,070,879	15,791,222
Total investment securities	25,921,539	18,418,099
Advances (includes $10,267 and $10,008 at fair value under fair value option at September 30, 2019 and December 31, 2018, respectively)	46,358,204	54,822,252
Mortgage loans held for portfolio, net of allowance for credit losses of $740 and $840 at September 30, 2019 and December 31, 2018, respectively	10,883,590	10,500,917
Accrued interest receivable	204,910	169,982
Derivative assets	279,554	65,765
Other assets	27,051	20,191
TOTAL ASSETS	$ 100,211,042	$ 99,202,573
LIABILITIES		
Deposits	$ 847,020	$ 669,016
Consolidated Obligations:		
Discount Notes (includes $13,914,315 and $0 at fair value under fair value option at September 30, 2019 and December 31, 2018, respectively)	49,553,251	46,943,632
Bonds (includes $5,436,423 and $3,906,610 at fair value under fair value option at September 30, 2019 and December 31, 2018, respectively)	44,590,325	45,659,138
Total Consolidated Obligations	94,143,576	92,602,770
Mandatorily redeemable capital stock	25,612	23,184
Accrued interest payable	144,699	147,337
Affordable Housing Program payable	114,288	117,336
Derivative liabilities	4,076	4,586
Other liabilities	291,685	308,128
Total liabilities	95,570,956	93,872,357
Commitments and contingencies		
CAPITAL		
Capital stock Class B putable ($100 par value); issued and outstanding shares: 35,975 shares at September 30, 2019 and 43,205 shares at December 31, 2018	3,597,501	4,320,459
Retained earnings:		
Unrestricted	623,830	631,971
Restricted	430,864	390,829
Total retained earnings	1,054,694	1,022,800
Accumulated other comprehensive loss	(12,109)	(13,043)
Total capital	4,640,086	5,330,216
TOTAL LIABILITIES AND CAPITAL	$ 100,211,042	$ 99,202,573

(a) Fair values: $14,082,525 and $15,575,368 at September 30, 2019 and December 31, 2018, 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, 2019	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
INTEREST INCOME:				
Advances	$ 267,537	$ 342,138	$ 991,077	$ 1,009,613
Prepayment fees on Advances, net	724	27	904	488
Interest-bearing deposits	3,823	194	9,104	449
Securities purchased under agreements to resell	13,271	15,808	54,319	33,075
Federal funds sold	62,322	44,203	185,343	130,216
Investment securities:				
Trading securities	61,653	35	112,213	45
Available-for-sale securities	3,284	14,222	21,697	27,677
Held-to-maturity securities	94,740	101,174	305,192	278,951
Total investment securities	159,677	115,431	439,102	306,673
Mortgage loans held for portfolio	83,506	80,188	257,758	235,609
Loans to other FHLBanks	—	—	70	20
Total interest income	590,860	597,989	1,937,677	1,716,143
INTEREST EXPENSE:				
Consolidated Obligations:				
Discount Notes	238,574	207,947	794,469	604,387
Bonds	260,453	256,014	823,376	725,221
Total Consolidated Obligations	499,027	463,961	1,617,845	1,329,608
Deposits	4,337	3,455	12,008	7,906
Loans from other FHLBanks	3	—	3	5
Mandatorily redeemable capital stock	254	413	896	1,213
Total interest expense	503,621	467,829	1,630,752	1,338,732
NET INTEREST INCOME	87,239	130,160	306,925	377,411
NON-INTEREST INCOME (LOSS):				
Net gains (losses) on investment securities	70,146	805	263,733	800
Net gains (losses) on financial instruments held under fair value option	(8,681)	(3,607)	(50,615)	12,224
Net gains (losses) on derivatives and hedging activities	(60,254)	(8,804)	(238,339)	(46,769)
Other, net	3,083	2,683	8,457	8,156
Total non-interest income (loss)	4,294	(8,923)	(16,764)	(25,589)
NON-INTEREST EXPENSE:				
Compensation and benefits	11,173	10,315	35,208	34,465
Other operating expenses	5,498	4,987	16,443	15,082
Finance Agency	1,695	1,565	5,086	4,694
Office of Finance	1,204	1,219	3,684	3,653
Other	2,273	1,322	7,223	5,779
Total non-interest expense	21,843	19,408	67,644	63,673
INCOME BEFORE ASSESSMENTS	69,690	101,829	222,517	288,149
Affordable Housing Program assessments	6,995	10,224	22,342	28,936
NET INCOME	$ 62,695	$ 91,605	$ 200,175	$ 259,213

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

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

(In thousands)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Net income	$ 62,695	$ 91,605	$ 200,175	$ 259,213
Other comprehensive income adjustments:				
Net unrealized gains (losses) on available-for-sale securities	(192)	(101)	(442)	243
Pension and postretirement benefits	459	677	1,376	1,650
Total other comprehensive income (loss) adjustments	267	576	934	1,893
Comprehensive income	$ 62,962	$ 92,181	$ 201,109	$ 261,106

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, JUNE 30, 2018	45,391	$ 4,539,115	$ 627,182	$ 356,521	$ 983,703	$ (15,343)	$ 5,507,475
Comprehensive income (loss)			73,284	18,321	91,605	576	92,181
Proceeds from sale of capital stock	77	7,656					7,656
Repurchase of capital stock	(2,973)	(297,252)					(297,252)
Net shares reclassified to mandatorily redeemable capital stock	(76)	(7,592)					(7,592)
Cash dividends on capital stock			(67,829)		(67,829)		(67,829)
BALANCE, SEPTEMBER 30, 2018	42,419	$ 4,241,927	$ 632,637	$ 374,842	$1,007,479	$ (14,767)	$ 5,234,639
BALANCE, JUNE 30, 2019	38,065	$ 3,806,530	$ 618,634	$ 418,325	$1,036,959	$ (12,376)	$ 4,831,113
Comprehensive income (loss)			50,156	12,539	62,695	267	62,962
Proceeds from sale of capital stock	1,475	147,464					147,464
Repurchase of capital stock	(3,500)	(350,000)					(350,000)
Net shares reclassified to mandatorily redeemable capital stock	(65)	(6,493)					(6,493)
Cash dividends on capital stock			(44,960)		(44,960)		(44,960)
BALANCE, SEPTEMBER 30, 2019	35,975	$ 3,597,501	$ 623,830	$ 430,864	$1,054,694	$ (12,109)	$ 4,640,086

(In thousands)	Capital Stock Class B - Putable		Retained Earnings			Accumulated Other Comprehensive	Total
	Shares	Par Value	Unrestricted	Restricted	Total	Loss	Capital
BALANCE, DECEMBER 31, 2017	42,411	$ 4,241,140	$ 617,034	$ 322,999	$ 940,033	$ (16,660)	$ 5,164,513
Comprehensive income (loss)			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	42,419	$ 4,241,927	$ 632,637	$ 374,842	$1,007,479	$ (14,767)	$ 5,234,639
BALANCE, DECEMBER 31, 2018	43,205	$ 4,320,459	$ 631,971	$ 390,829	$1,022,800	$ (13,043)	$ 5,330,216
Comprehensive income (loss)			160,140	40,035	200,175	934	201,109
Proceeds from sale of capital stock	5,233	523,257					523,257
Repurchase of capital stock	(12,386)	(1,238,544)					(1,238,544)
Net shares reclassified to mandatorily redeemable capital stock	(77)	(7,671)					(7,671)
Cash dividends on capital stock			(168,281)		(168,281)		(168,281)
BALANCE, SEPTEMBER 30, 2019	35,975	$ 3,597,501	$ 623,830	$ 430,864	$1,054,694	$ (12,109)	$ 4,640,086

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, 2019	Nine Months Ended September 30, 2018
OPERATING ACTIVITIES:		
Net income	$ 200,175	$ 259,213
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	8,900	22,308
Net change in derivative and hedging activities	(198,494)	39,727
Net change in fair value adjustments on trading securities	(263,733)	(800)
Net change in fair value adjustments on financial instruments held under fair value option	50,615	(12,224)
Other adjustments	596	—
Net change in:		
Accrued interest receivable	(35,226)	(43,441)
Other assets	(994)	7,977
Accrued interest payable	5,917	19,033
Other liabilities	8,005	14,600
Total adjustments	(424,414)	47,180
Net cash provided by (used in) operating activities	(224,239)	306,393
INVESTING ACTIVITIES:		
Net change in:		
Interest-bearing deposits	(858,712)	(1,928)
Securities purchased under agreements to resell	2,562,632	3,210,500
Federal funds sold	(3,289,000)	(5,260,000)
Premises, software, and equipment	(1,753)	(1,531)
Trading securities:		
Proceeds from maturities	113	125
Purchases	(10,928,882)	(71,935)
Available-for-sale securities:		
Proceeds from maturities	5,090,000	4,600,000
Purchases	(3,128,500)	(5,774,000)
Held-to-maturity securities:		
Proceeds from maturities	2,694,458	2,018,495
Purchases	(994,810)	(3,411,173)
Advances:		
Repaid	1,147,441,338	2,336,379,163
Originated	(1,138,754,813)	(2,324,286,546)
Mortgage loans held for portfolio:		
Principal collected	1,221,970	859,958
Purchases	(1,622,397)	(1,391,681)
Net cash provided by (used in) investing activities	(568,356)	6,869,447

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

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

(In thousands)	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
FINANCING ACTIVITIES:		
Net change in deposits and pass-through reserves	$ 179,964	$ 1,144,681
Net proceeds (payments) on derivative contracts with financing elements	(373)	(908)
Net proceeds from issuance of Consolidated Obligations:		
Discount Notes	605,292,074	424,259,455
Bonds	24,021,342	19,549,736
Payments for maturing and retiring Consolidated Obligations:		
Discount Notes	(602,674,421)	(425,170,844)
Bonds	(25,131,800)	(26,773,265)
Proceeds from issuance of capital stock	523,257	303,488
Payments for repurchase of capital stock	(1,238,544)	(297,252)
Payments for repurchase/redemption of mandatorily redeemable capital stock	(5,243)	(13,106)
Cash dividends paid	(168,281)	(191,767)
Net cash provided by (used in) financing activities	797,975	(7,189,782)
Net increase (decrease) in cash and due from banks	5,380	(13,942)
Cash and due from banks at beginning of the period	10,037	26,550
Cash and due from banks at end of the period	$ 15,417	$ 12,608
Supplemental Disclosures:		
Interest paid	$ 1,649,854	$ 1,325,065
Affordable Housing Program payments, net	$ 25,390	$ 25,365

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 are government-sponsored enterprises (GSEs) that 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, 2018 filed with the Securities and Exchange Commission (SEC). Results for the nine months ended September 30, 2019 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 2018 Annual Report on Form 10-K.

The FHLB did not hold any equity securities as of September 30, 2019 and December 31, 2018.

Reclassifications. Certain amounts in the 2018 financial statements have been reclassified to conform to the presentation as of September 30, 2019. Specifically, certain cash flow amounts in the prior period Statement of Cash Flows have been reclassified to reflect short-term investment securities purchases and proceeds on a gross, rather than net, basis.

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 London InterBank Offered Rate (LIBOR) to SOFR transition. This guidance became effective for the FHLB for the interim and annual periods beginning on January 1, 2019 (concurrent with the adoption of the hedging standard mentioned below). This guidance was adopted prospectively for qualifying new or re-designated hedging relationships entered into on or after January 1, 2019. Upon adoption, this guidance did not have an impact on the FHLB’s financial condition, results of operations, or cash flows.

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 the interim and annual periods beginning on January 1, 2020. Early adoption is permitted. 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.

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 does not intend to adopt this guidance early. The adoption of this guidance will affect the FHLB's disclosures, but will not have any effect on 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 for fair value measurements to improve disclosure effectiveness. This guidance becomes effective for the FHLB for the interim and annual periods beginning on January 1, 2020. Early adoption is permitted. The FHLB does not intend to adopt this guidance early. The adoption of this guidance will affect the FHLB's disclosures, but will not have any effect on 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. In addition, the amendments include certain targeted improvements to the assessment of hedge effectiveness. This guidance became effective for the FHLB for the interim and annual periods beginning on January 1, 2019 and was applied to all existing hedging relationships as of that date. On January 1, 2019, the FHLB modified the presentation of fair value hedge results on its Statements of Income, as well as relevant disclosures, prospectively. However, the adoption of this guidance did not have a material effect on the FHLB's financial condition, results of operations, or cash flows.

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 was adopted on January 1, 2019, and is 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 guidance did not have an impact on the FHLB’s financial condition, results of operations, or 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 becomes effective for the FHLB for the interim and annual periods beginning on January 1, 2020. Early adoption is permitted. The FHLB does not intend to adopt the new guidance early. 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. Based on its preliminary assessments, the FHLB does not expect the guidance to result in an allowance for credit losses for certain financial instruments including Advances, U.S. obligation/GSE investments, securities purchased under agreement to resell and other short-term investments given the specific terms, issuer guarantees, and/or collateralized/secured nature of the instruments. For mortgage loans held for portfolio, the FHLB expects the guidance to have an immaterial impact. However, the guidance's ultimate impact on the FHLB's financial condition, results of operations, and cash flows may change depending 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 that 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. This guidance became effective for the FHLB for the interim and annual periods beginning on January 1, 2019. The FHLB elected to adopt this guidance using the modified retrospective method, and therefore, did not restate prior periods. On January 1, 2019, the FHLB recognized a right-of-use asset of $5,473,000 in other assets and a lease liability of $6,141,000 in other liabilities on its Statement of Condition for its operating leases. As permitted, the FHLB elected to not recognize a right-of-use asset or lease liability for its leases with terms of 12 months or less. The FHLB has determined that its leasing activities are not material to its financial condition, results of operations, or cash flows.

Note 3 - Trading Securities

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

Fair Value	September 30, 2019	December 31, 2018
Non-mortgage-backed securities (non-MBS):		
U.S. Treasury obligations	$ 9,386,559	$ —
GSE obligations	2,029,426	223,368
Total non-MBS	11,415,985	223,368
Mortgage-backed securities (MBS):		
U.S. obligation single-family MBS	498	612
Total	$ 11,416,483	$ 223,980

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

	Nine Months Ended September 30,	
	2019	2018
Net gains (losses) on trading securities held at period end	$ 263,733	$ 800
Net gains (losses) on trading securities	$ 263,733	$ 800

Note 4 - Available-for-Sale Securities

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

	September 30, 2019			
	Amortized Cost [(1)]	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of deposit	$ 300,000	$ 3	$ —	$ 300,003
GSE obligations	134,729	200	(755)	134,174
Total	$ 434,729	$ 203	$ (755)	$ 434,177

	December 31, 2018			
	Amortized Cost [(1)]	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Certificates of deposit	$ 2,350,000	$ 71	$ (69)	$ 2,350,002
GSE obligations	53,007	16	(128)	52,895
Total	$ 2,403,007	$ 87	$ (197)	$ 2,402,897

(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, 2019 and December 31, 2018 were in a continuous unrealized loss position for less than 12 months.

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

	September 30, 2019		December 31, 2018	
Year of Maturity	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Due in 1 year or less	$ 300,000	$ 300,003	$ 2,350,000	$ 2,350,002
Due after 1 year through 5 years	—	—	—	—
Due after 5 years through 10 years	122,166	121,648	48,999	48,904
Due after 10 years	12,563	12,526	4,008	3,991
Total	$ 434,729	$ 434,177	$ 2,403,007	$ 2,402,897

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

	September 30, 2019	December 31, 2018
Amortized cost of available-for-sale securities:		
Fixed-rate	$ 434,729	$ 2,403,007

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, 2019 or 2018.

Note 5 - Held-to-Maturity Securities

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

	September 30, 2019			
	Amortized Cost [(1)]	Gross Unrecognized Holding Gains	Gross Unrecognized Holding Losses	Fair Value
Non-MBS:				
U.S. Treasury obligations	$ 34,991	$ 23	$ —	$ 35,014
Total non-MBS	34,991	23	—	35,014
MBS:				
U.S. obligation single-family MBS	1,767,788	15,786	(26)	1,783,548
GSE single-family MBS	4,790,602	43,214	(24,923)	4,808,893
GSE multi-family MBS	7,477,498	87	(22,515)	7,455,070
Total MBS	14,035,888	59,087	(47,464)	14,047,511
Total	$ 14,070,879	$ 59,110	$ (47,464)	$ 14,082,525

	December 31, 2018			
	Amortized Cost [(1)]	Gross Unrecognized Holding Gains	Gross Unrecognized Holding Losses	Fair Value
Non-MBS:				
U.S. Treasury obligations	$ 35,667	$ —	$ (6)	$ 35,661
Total non-MBS	35,667	—	(6)	35,661
MBS:				
U.S. obligation single-family MBS	2,040,642	540	(47,463)	1,993,719
GSE single-family MBS	5,543,524	9,891	(162,097)	5,391,318
GSE multi-family MBS	8,171,389	1,739	(18,458)	8,154,670
Total MBS	15,755,555	12,170	(228,018)	15,539,707
Total	$ 15,791,222	$ 12,170	$ (228,024)	$ 15,575,368

(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, 2019	December 31, 2018
Premiums	$ 32,794	$ 42,299
Discounts	(14,397)	(19,730)
Net purchased premiums	$ 18,397	$ 22,569

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, 2019					
	Less than 12 Months		12 Months or more		Total	
	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses	Fair Value	Gross Unrealized Losses
MBS:						
U.S. obligation single-family MBS	$ 40,500	$ (26)	$ —	$ —	$ 40,500	$ (26)
GSE single-family MBS	426,932	(1,788)	2,182,778	(23,135)	2,609,710	(24,923)
GSE multi-family MBS	4,395,597	(10,474)	2,725,621	(12,041)	7,121,218	(22,515)
Total	$ 4,863,029	$ (12,288)	$ 4,908,399	$ (35,176)	$ 9,771,428	$ (47,464)

	December 31, 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	$ 35,661	$ (6)	$ —	$ —	$ 35,661	$ (6)
Total non-MBS	35,661	(6)	—	—	35,661	(6)
MBS:						
U.S. obligation single-family MBS	175,663	(1,571)	1,526,835	(45,892)	1,702,498	(47,463)
GSE single-family MBS	401,509	(1,581)	3,859,608	(160,516)	4,261,117	(162,097)
GSE multi-family MBS	5,976,323	(18,185)	229,739	(273)	6,206,062	(18,458)
Total MBS	6,553,495	(21,337)	5,616,182	(206,681)	12,169,677	(228,018)
Total	$ 6,589,156	$ (21,343)	$ 5,616,182	$ (206,681)	$ 12,205,338	$ (228,024)

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

	September 30, 2019		December 31, 2018	
Year of Maturity	Amortized Cost (1)	Fair Value	Amortized Cost (1)	Fair Value
Non-MBS:				
Due in 1 year or less	$ 34,991	$ 35,014	$ 35,667	$ 35,661
Due after 1 year through 5 years	—	—	—	—
Due after 5 years through 10 years	—	—	—	—
Due after 10 years	—	—	—	—
Total non-MBS	34,991	35,014	35,667	35,661
MBS (2)	14,035,888	14,047,511	15,755,555	15,539,707
Total	$ 14,070,879	$ 14,082,525	$ 15,791,222	$ 15,575,368

(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)

	September 30, 2019	December 31, 2018
Amortized cost of non-MBS:		
Fixed-rate	$ 34,991	$ 35,667
Total amortized cost of non-MBS	34,991	35,667
Amortized cost of MBS:		
Fixed-rate	5,770,756	6,652,055
Variable-rate	8,265,132	9,103,500
Total amortized cost of MBS	14,035,888	15,755,555
Total	$ 14,070,879	$ 15,791,222

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, 2019 and 2018, 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, 2019, 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, 2019.

The FHLB did not consider any of its investments to be other-than-temporarily impaired at December 31, 2018.

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 - Advances by Redemption Term (dollars in thousands)

	September 30, 2019		December 31, 2018	
Redemption Term	**Amount**	**Weighted Average Interest Rate**	**Amount**	**Weighted Average Interest Rate**
Due in 1 year or less	$ 30,921,585	2.16%	$ 38,592,494	2.56%
Due after 1 year through 2 years	4,848,567	2.26	6,461,276	2.39
Due after 2 years through 3 years	1,953,191	2.38	3,146,830	2.30
Due after 3 years through 4 years	1,329,705	2.49	1,145,118	2.56
Due after 4 years through 5 years	1,746,348	2.25	935,439	2.76
Thereafter	5,386,305	2.50	4,591,015	2.98
Total principal amount	46,185,701	2.23	54,872,172	2.56
Commitment fees	(329)		(456)	
Discount on Affordable Housing Program (AHP) Advances	(3,451)		(4,386)	
Premiums	1,294		1,510	
Discounts	(2,471)		(3,090)	
Hedging adjustments	177,193		(43,506)	
Fair value option valuation adjustments and accrued interest	267		8	
Total	$ 46,358,204		$ 54,822,252	

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 Redemption Term or Next Call Date (in thousands)

Redemption Term or Next Call Date	**September 30, 2019**	**December 31, 2018**
Due in 1 year or less	$ 34,181,189	$ 43,793,555
Due after 1 year through 2 years	5,221,817	4,338,117
Due after 2 years through 3 years	1,683,289	3,490,580
Due after 3 years through 4 years	1,195,707	753,716
Due after 4 years through 5 years	1,517,394	905,189
Thereafter	2,386,305	1,591,015
Total principal amount	$ 46,185,701	$ 54,872,172

The FHLB also offers putable Advances. With a putable 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 Redemption Term or Next Put Date for Putable Advances (in thousands)

Redemption Term or Next Put Date	September 30, 2019	December 31, 2018
Due in 1 year or less	$ 31,935,835	$ 38,827,494
Due after 1 year through 2 years	5,223,567	6,611,276
Due after 2 years through 3 years	2,076,191	3,221,830
Due after 3 years through 4 years	1,259,705	1,145,118
Due after 4 years through 5 years	1,492,098	835,439
Thereafter	4,198,305	4,231,015
Total principal amount	$ 46,185,701	$ 54,872,172

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

	September 30, 2019	December 31, 2018
Total fixed-rate (1)	$ 31,152,304	$ 23,988,298
Total variable-rate (1)	15,033,397	30,883,874
Total principal amount	$ 46,185,701	$ 54,872,172

(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)

September 30, 2019		
	Principal	% of Total Principal Amount of Advances
JPMorgan Chase Bank, N.A.	$ 8,050	17%
U.S. Bank, N.A.	4,974	11
Third Federal Savings and Loan Association	3,896	8
Fifth Third Bank	2,856	6
Total	$ 19,776	42%

December 31, 2018		
	Principal	% of Total Principal Amount of Advances
JPMorgan Chase Bank, N.A.	$ 23,400	43%
U.S. Bank, N.A.	4,574	8
Third Federal Savings and Loan Association	3,727	7
Total	$ 31,701	58%

Note 8 - Mortgage Loans Held for Portfolio

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

	September 30, 2019	December 31, 2018
Unpaid principal balance:		
Fixed rate medium-term single-family mortgage loans (1)	$ 805,059	$ 933,340
Fixed rate long-term single-family mortgage loans	9,832,179	9,338,814
Total unpaid principal balance	10,637,238	10,272,154
Premiums	232,145	227,161
Discounts	(2,272)	(2,603)
Hedging basis adjustments (2)	17,219	5,045
Total mortgage loans held for portfolio	$ 10,884,330	$ 10,501,757

(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)

	September 30, 2019	December 31, 2018
Unpaid principal balance:		
Conventional mortgage loans	$ 10,396,652	$ 9,999,307
Federal Housing Administration (FHA) mortgage loans	240,586	272,847
Total unpaid principal balance	$ 10,637,238	$ 10,272,154

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)

	September 30, 2019			December 31, 2018	
	Principal	% of Total		Principal	% of Total
Union Savings Bank	$ 3,590	34%	Union Savings Bank	$ 3,449	34%
Guardian Savings Bank FSB	991	9	Guardian Savings Bank FSB	987	10
FirstBank	593	6			

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 and 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, or may be required to provide details on those 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 otherwise be entitled to priority under 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, 2019 and December 31, 2018, 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, 2019 and December 31, 2018, 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, 2019 or 2018.

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, 2019 or December 31, 2018. Accordingly, the FHLB did not record any allowance for credit losses on Advances.

At September 30, 2019 and December 31, 2018, 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. 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. To properly determine the credit enhancements available to recover estimated losses, the FHLB performs the credit risk analysis of all conventional mortgage loans at the individual Master Commitment Contract level. 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. 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.

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,	
	2019	2018
Balance, beginning of period	$ 784	$ 953
Net charge offs	(44)	(26)
Balance, end of period	$ 740	$ 927

	Nine Months Ended September 30,	
	2019	2018
Balance, beginning of period	$ 840	$ 1,190
Net charge offs	(100)	(263)
Balance, end of period	$ 740	$ 927

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

	September 30, 2019	December 31, 2018
Allowance for credit losses:		
Collectively evaluated for impairment	$ 740	$ 840
Individually evaluated for impairment	—	—
Total allowance for credit losses	$ 740	$ 840
Recorded investment:		
Collectively evaluated for impairment	$ 10,664,109	$ 10,249,169
Individually evaluated for impairment	12,156	10,554
Total recorded investment	$ 10,676,265	$ 10,259,723

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 returned 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, 2019
LRA at beginning of year	$ 213,260
Additions	17,812
Claims	(10)
Scheduled distributions	(7,934)
LRA at end of period	$ 223,128

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, 2019		
	Conventional MPP Loans	**FHA Loans**	**Total**
Past due 30-59 days delinquent	$ 30,191	$ 13,406	$ 43,597
Past due 60-89 days delinquent	6,044	3,830	9,874
Past due 90 days or more delinquent	10,998	5,390	16,388
Total past due	47,233	22,626	69,859
Total current mortgage loans	10,629,032	221,197	10,850,229
Total mortgage loans	$ 10,676,265	$ 243,823	$ 10,920,088
Other delinquency statistics:			
In process of foreclosure, included above (1)	$ 7,561	$ 2,474	$ 10,035
Serious delinquency rate (2)	0.11%	2.25%	0.15%
Past due 90 days or more still accruing interest (3)	$ 10,508	$ 5,390	$ 15,898
Loans on non-accrual status, included above	$ 1,920	$ —	$ 1,920

	December 31, 2018		
	Conventional MPP Loans	**FHA Loans**	**Total**
Past due 30-59 days delinquent	$ 29,596	$ 14,845	$ 44,441
Past due 60-89 days delinquent	7,175	4,238	11,413
Past due 90 days or more delinquent	12,807	7,210	20,017
Total past due	49,578	26,293	75,871
Total current mortgage loans	10,210,145	250,308	10,460,453
Total mortgage loans	$ 10,259,723	$ 276,601	$ 10,536,324
Other delinquency statistics:			
In process of foreclosure, included above (1)	$ 7,557	$ 4,635	$ 12,192
Serious delinquency rate (2)	0.13%	2.65%	0.19%
Past due 90 days or more still accruing interest (3)	$ 11,773	$ 7,210	$ 18,983
Loans on non-accrual status, included above	$ 2,535	$ —	$ 2,535

(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, 2019 or December 31, 2018.

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) $12,156 and $10,554 at September 30, 2019 and December 31, 2018, 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 2018 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 executed either 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, 2019		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as fair value hedging instruments:			
Interest rate swaps	$ 9,428,000	$ 5,550	$ 85,183
Derivatives not designated as hedging instruments:			
Interest rate swaps	30,617,599	2,961	1,393
Interest rate swaptions	6,000,000	35,298	—
Forward rate agreements	680,000	16	652
Mortgage delivery commitments	738,399	2,256	546
Total derivatives not designated as hedging instruments	38,035,998	40,531	2,591
Total derivatives before adjustments	$ 47,463,998	46,081	87,774
Netting adjustments and cash collateral [(1)]		233,473	(83,698)
Total derivative assets and total derivative liabilities		$ 279,554	$ 4,076

	December 31, 2018		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as fair value hedging instruments:			
Interest rate swaps	$ 6,207,278	$ 2,393	$ 16,810
Derivatives not designated as hedging instruments:			
Interest rate swaps	4,322,480	3,311	1,904
Interest rate swaptions	3,000,000	15,911	—
Forward rate agreements	131,000	—	2,664
Mortgage delivery commitments	146,009	1,726	1
Total derivatives not designated as hedging instruments	7,599,489	20,948	4,569
Total derivatives before adjustments	$ 13,806,767	23,341	21,379
Netting adjustments and cash collateral [(1)]		42,424	(16,793)
Total derivative assets and total derivative liabilities		$ 65,765	$ 4,586

(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) $331,178 and $71,246 at September 30, 2019 and December 31, 2018. Cash collateral received and related accrued interest was (in thousands) $14,007 and $12,029 at September 30, 2019 and December 31, 2018.

In connection with the adoption of new accounting guidance, changes in fair value of the derivative hedging instrument and the hedged item attributable to the hedged risk for designated fair value hedges are recorded in net interest income in the same line as the earnings effect of the hedged item beginning on January 1, 2019. Prior to January 1, 2019, for designated fair value hedges, any hedge ineffectiveness (which represented the amount by which the change in the fair value of the derivative differed from the change in the fair value of the hedge item) was recorded in non-interest income as net gains (losses) on derivatives and hedging activities. See Note 2 for additional information on the adoption of *Targeted Improvements to Accounting for Hedging Activities*.

Table 10.2 presents the impact of qualifying fair value hedging relationships on the Statements of Income as well as the total interest income (expense) by product.

Table 10.2 - Impact of Fair Value Hedging Relationships on the Statements of Income (in thousands)

	Three Months Ended September 30, 2019		
	Advances	Available-for-sale Securities	Consolidated Bonds
Total interest income (expense) recorded in the Statements of Income	$ 267,537	$ 3,284	$ (260,453)
Impact of Fair Value Hedging Relationships on the Statements of Income [1]			
Interest income/expense:			
Net interest settlements	$ 8,115	$ (92)	$ 550
Gain (loss) on derivatives	(61,531)	(2,957)	(482)
Gain (loss) on hedged items	57,287	2,925	565
Effect on net interest income	$ 3,871	$ (124)	$ 633

	Three Months Ended September 30, 2018 [2]		
	Advances	Available-for-sale securities	Consolidated Bonds
Impact of Fair Value Hedging Relationships on the Statements of Income [1]			
Interest income/expense:			
Net interest settlements [3]	$ 7,643	$ (4)	$ (510)
Effect on net interest income	$ 7,643	$ (4)	$ (510)
Non-interest income (loss):			
Gain (loss) on derivatives	$ 8,005	$ 104	$ 301
Gain (loss) on hedged items	(8,799)	(90)	(213)
Effect on non-interest income (loss)	$ (794)	$ 14	$ 88

	Nine Months Ended September 30, 2019		
	Advances	Available-for-sale Securities	Consolidated Bonds
Total interest income (expense) recorded in the Statements of Income	$ 991,077	$ 21,697	$ (823,376)
Impact of Fair Value Hedging Relationships on the Statements of Income [1]			
Interest income/expense:			
Net interest settlements	$ 33,643	$ (136)	$ 1,102
Gain (loss) on derivatives	(227,468)	(9,460)	1,392
Gain (loss) on hedged items	220,699	9,222	(1,434)
Effect on net interest income	$ 26,874	$ (374)	$ 1,060

Impact of Fair Value Hedging Relationships on the Statements of Income [1]	Nine Months Ended September 30, 2018 [2]		
	Advances	Available-for-sale securities	Consolidated Bonds
Interest income/expense:			
Net interest settlements [3]	$ 15,077	$ (4)	$ (3,360)
Effect on net interest income	$ 15,077	$ (4)	$ (3,360)
Non-interest income (loss):			
Gain (loss) on derivatives	$ 58,315	$ 104	$ 1,166
Gain (loss) on hedged items	(56,368)	(90)	(1,257)
Effect on non-interest income (loss)	$ 1,947	$ 14	$ (91)

(1) Includes interest rate swaps.
(2) Prior period amounts were not conformed to new hedge accounting guidance adopted January 1, 2019.
(3) Excludes (amortization)/accretion on closed fair value hedge relationships of (in thousands) $(140) for the three months ended September 30, 2018 and (in thousands) $(463) for the nine months ended September 30, 2018.

Table 10.3 presents the cumulative basis adjustments on hedged items designated as fair value hedges and the related amortized cost of the hedged items.

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

	September 30, 2019			
Hedged Item	Amortized Cost of Hedged Asset/ Liability [1]	Basis Adjustment for Active Hedging Relationships Included in Amortized Cost	Basis Adjustments for Discontinued Hedging Relationships Included in Amortized Cost	Cumulative Amount of Fair Value Hedging Basis Adjustments
Advances	$ 9,201,520	$ 176,257	$ 936	$ 177,193
Available-for-sale securities	134,729	10,229	—	10,229
Consolidated Bonds	356,224	1,238	—	1,238

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

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

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

	Three Months Ended September 30,	
	2019	2018
Derivatives designated as fair value hedging relationships:		
Interest rate swaps	N/A	$ (692)
Derivatives not designated as hedging instruments:		
Economic hedges:		
Interest rate swaps	$ (77,671)	10,128
Interest rate swaptions	19,315	(745)
Forward rate agreements	(4,584)	1,833
Net interest settlements	(3,655)	(16,695)
Mortgage delivery commitments	4,785	(2,520)
Total net gains (losses) related to derivatives not designated as hedging instruments	(61,810)	(7,999)
Price alignment amount (1)	1,556	(113)
Net gains (losses) on derivatives and hedging activities	$ (60,254)	$ (8,804)

	Nine Months Ended September 30,	
	2019	2018
Derivatives designated as fair value hedging relationships:		
Interest rate swaps	N/A	$ 1,870
Derivatives not designated as hedging instruments:		
Economic hedges:		
Interest rate swaps	$ (232,074)	(8,845)
Interest rate swaptions	3,815	4
Forward rate agreements	(11,283)	6,317
Net interest settlements	(15,041)	(38,876)
Mortgage delivery commitments	14,004	(7,105)
Total net gains (losses) related to derivatives not designated as hedging instruments	(240,579)	(48,505)
Price alignment amount (1)	2,240	(134)
Net gains (losses) on derivatives and hedging activities	$ (238,339)	$ (46,769)

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

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 with the collateral delivery threshold set to zero.

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. At both Clearinghouses, variation margin is characterized as daily settlement payments, while initial margin is considered to be 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.

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, 2019, 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 it expects that the exercise of those offsetting rights by a non-defaulting party under these transactions would 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 10.5 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, 2019 and December 31, 2018, 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 10.5 - Offsetting of Derivative Assets and Derivative Liabilities (in thousands)

	September 30, 2019			
	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	$ 39,174	$ (39,174)	$ 2,272	$ 2,272
Cleared	4,635	272,647	—	277,282
Total				$ 279,554
Derivative Liabilities:				
Uncleared	$ 85,837	$ (82,959)	$ 1,198	$ 4,076
Cleared	739	(739)	—	—
Total				$ 4,076

	December 31, 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	$ 20,284	$ (20,250)	$ 1,726	$ 1,760
Cleared	1,331	62,674	—	64,005
Total				$ 65,765
Derivative Liabilities:				
Uncleared	$ 13,745	$ (11,824)	$ 2,665	$ 4,586
Cleared	4,969	(4,969)	—	—
Total				$ 4,586

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

Note 11 - Deposits

Table 11.1 - Deposits (in thousands)

	September 30, 2019	December 31, 2018
Interest bearing:		
Demand and overnight	$ 791,894	$ 605,979
Term	37,600	51,600
Other	9,074	4,959
Total interest bearing	838,568	662,538
Non-interest bearing:		
Other	8,452	6,478
Total non-interest bearing	8,452	6,478
Total deposits	$ 847,020	$ 669,016

Note 12 - Consolidated Obligations

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

	Book Value	Principal Amount	Weighted Average Interest Rate (1)
September 30, 2019	$ 49,553,251	$ 49,639,893	1.99%
December 31, 2018	$ 46,943,632	$ 47,071,113	2.35%

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

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

	September 30, 2019		December 31, 2018	
Year of Original Contractual Maturity	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate
Due in 1 year or less	$ 22,924,065	1.96%	$ 21,085,800	2.20%
Due after 1 year through 2 years	8,300,500	1.97	6,998,565	2.13
Due after 2 years through 3 years	4,412,015	2.39	6,829,595	2.05
Due after 3 years through 4 years	2,564,465	2.60	2,958,620	2.39
Due after 4 years through 5 years	2,211,795	2.74	3,248,975	2.63
Thereafter	4,109,730	2.96	4,525,635	2.94
Total principal amount	44,522,570	2.17	45,647,190	2.29
Premiums	69,351		75,809	
Discounts	(25,257)		(29,275)	
Hedging adjustments	1,238		(196)	
Fair value option valuation adjustment and accrued interest	22,423		(34,390)	
Total	$ 44,590,325		$ 45,659,138	

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

	September 30, 2019	December 31, 2018
Principal Amount of Consolidated Bonds:		
Non-callable	$ 38,329,570	$ 38,539,190
Callable	6,193,000	7,108,000
Total principal amount	$ 44,522,570	$ 45,647,190

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

Year of Original Contractual Maturity or Next Call Date	September 30, 2019	December 31, 2018
Due in 1 year or less	$ 27,905,065	$ 27,173,800
Due after 1 year through 2 years	6,690,500	5,773,565
Due after 2 years through 3 years	3,542,015	5,060,595
Due after 3 years through 4 years	1,979,465	2,470,620
Due after 4 years through 5 years	1,699,795	2,231,975
Thereafter	2,705,730	2,936,635
Total principal amount	$ 44,522,570	$ 45,647,190

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

	September 30, 2019	December 31, 2018
Principal Amount of Consolidated Bonds:		
Fixed-rate	$ 28,618,570	$ 29,837,190
Variable-rate	15,904,000	15,470,000
Step-up	—	340,000
Total principal amount	$ 44,522,570	$ 45,647,190

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. Each FHLBank is required to contribute to its AHP the greater of 10 percent of its previous year's income subject to assessment, or the prorated sum required to ensure the aggregate contribution by the FHLBanks is no less than $100 million for each year. For purposes of the AHP calculation, income subject to assessment 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 income subject to assessment. The FHLB reduces the AHP liability as members use subsidies.

Table 13.1 - Analysis of AHP Liability (in thousands)

Balance at December 31, 2018	$ 117,336
Assessments (current year additions)	22,342
Subsidy uses, net	(25,390)
Balance at September 30, 2019	$ 114,288

Note 14 - Capital

Table 14.1 - Capital Requirements (dollars in thousands)

	September 30, 2019		December 31, 2018	
	Minimum Requirement	Actual	Minimum Requirement	Actual
Risk-based capital	$ 722,256	$ 4,677,807	$ 837,666	$ 5,366,443
Capital-to-assets ratio (regulatory)	4.00%	4.67%	4.00%	5.41%
Regulatory capital	$ 4,008,442	$ 4,677,807	$ 3,968,103	$ 5,366,443
Leverage capital-to-assets ratio (regulatory)	5.00%	7.00%	5.00%	8.11%
Leverage capital	$ 5,010,552	$ 7,016,711	$ 4,960,129	$ 8,049,665

Restricted Retained Earnings. At September 30, 2019 and December 31, 2018 the FHLB had (in thousands) $430,864 and $390,829 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 Rollforward (in thousands)

Balance, December 31, 2018	$ 23,184
Capital stock subject to mandatory redemption reclassified from equity	7,671
Repurchase/redemption of mandatorily redeemable capital stock	(5,243)
Balance, September 30, 2019	$ 25,612

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

Contractual Year of Redemption	September 30, 2019	December 31, 2018
Year 1	$ 351	$ 1,633
Year 2	202	371
Year 3	1,249	357
Year 4	1,531	1,209
Year 5	6,712	3,553
Thereafter (1)	650	624
Past contractual redemption date due to remaining activity (2)	14,917	15,437
Total	$ 25,612	$ 23,184

(1) Represents mandatorily redeemable capital stock resulting from a Finance Agency rule effective February 19, 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, 2019 and 2018.

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 income (loss)
BALANCE, JUNE 30, 2018	$ 220	$ (15,563)	$ (15,343)
Other comprehensive income before reclassification:			
Net unrealized gains (losses)	(101)	—	(101)
Reclassifications from other comprehensive income (loss) to net income:			
Amortization - pension and postretirement benefits	—	677	677
Net current period other comprehensive income (loss)	(101)	677	576
BALANCE, SEPTEMBER 30, 2018	$ 119	$ (14,886)	$ (14,767)
BALANCE, JUNE 30, 2019	$ (360)	$ (12,016)	$ (12,376)
Other comprehensive income before reclassification:			
Net unrealized gains (losses)	(192)	—	(192)
Reclassifications from other comprehensive income (loss) to net income:			
Amortization - pension and postretirement benefits	—	459	459
Net current period other comprehensive income (loss)	(192)	459	267
BALANCE, SEPTEMBER 30, 2019	$ (552)	$ (11,557)	$ (12,109)

	Net unrealized gains (losses) on available-for-sale securities	Pension and postretirement benefits	Total accumulated other comprehensive income (loss)
BALANCE, DECEMBER 31, 2017	$ (124)	$ (16,536)	$ (16,660)
Other comprehensive income before reclassification:			
Net unrealized gains (losses)	243	—	243
Reclassifications from other comprehensive income (loss) to net income:			
Amortization - pension and postretirement benefits	—	1,650	1,650
Net current period other comprehensive income (loss)	243	1,650	1,893
BALANCE, SEPTEMBER 30, 2018	$ 119	$ (14,886)	$ (14,767)
BALANCE, DECEMBER 31, 2018	$ (110)	$ (12,933)	$ (13,043)
Other comprehensive income before reclassification:			
Net unrealized gains (losses)	(442)	—	(442)
Reclassifications from other comprehensive income (loss) to net income:			
Amortization - pension and postretirement benefits	—	1,376	1,376
Net current period other comprehensive income (loss)	(442)	1,376	934
BALANCE, SEPTEMBER 30, 2019	$ (552)	$ (11,557)	$ (12,109)

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 $1,485,000 and $1,250,000 in the three months ended September 30, 2019 and 2018, respectively, and $5,422,000 and $6,301,000 in the nine months ended September 30, 2019 and 2018, respectively.

Qualified Defined Contribution Plan. The FHLB also participates in the Pentegra Defined Contribution Plan for Financial Institutions, a tax-qualified, defined contribution 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 IRS limitations. The FHLB contributed $252,000 and $240,000 in the three months ended September 30, 2019 and 2018, respectively, and $1,058,000 and $1,007,000 in the nine months ended September 30, 2019 and 2018, 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	
	2019	2018	2019	2018
Net Periodic Benefit Cost				
Service cost	$ 225	$ 294	$ 3	$ 6
Interest cost	388	352	46	41
Amortization of net loss	459	677	—	—
Net periodic benefit cost	$ 1,072	$ 1,323	$ 49	$ 47

	Nine Months Ended September 30,			
	Defined Benefit Retirement Plan		Postretirement Benefits Plan	
	2019	2018	2019	2018
Net Periodic Benefit Cost				
Service cost	$ 676	$ 847	$ 10	$ 15
Interest cost	1,163	1,015	136	124
Amortization of net loss	1,376	1,650	—	—
Net periodic benefit cost	$ 3,215	$ 3,512	$ 146	$ 139

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
2019			
Net interest income	$ 65,146	$ 22,093	$ 87,239
Non-interest income (loss)	(8,242)	12,536	4,294
Non-interest expense	19,166	2,677	21,843
Income before assessments	37,738	31,952	69,690
Affordable Housing Program assessments	3,800	3,195	6,995
Net income	$ 33,938	$ 28,757	$ 62,695
2018			
Net interest income	$ 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	$ 69,724	$ 21,881	$ 91,605

	Nine Months Ended September 30,		
	Traditional Member Finance	MPP	Total
2019			
Net interest income	$ 226,254	$ 80,671	$ 306,925
Non-interest income (loss)	(22,306)	5,542	(16,764)
Non-interest expense	59,158	8,486	67,644
Income before assessments	144,790	77,727	222,517
Affordable Housing Program assessments	14,569	7,773	22,342
Net income	$ 130,221	$ 69,954	$ 200,175
2018			
Net interest income	$ 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	$ 197,044	$ 62,169	$ 259,213

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

	Assets		
	Traditional Member Finance	MPP	Total
September 30, 2019	$ 87,706,932	$ 12,504,110	$ 100,211,042
December 31, 2018	86,042,150	13,160,423	99,202,573

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 would be 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 between fair value levels during the nine months ended September 30, 2019 or 2018.

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 Obligations 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)

	September 30, 2019					
		Fair Value				
Financial Instruments	**Carrying Value**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Netting Adjustments and Cash Collateral (1)**
Assets:						
Cash and due from banks	$ 15,417	$ 15,417	$ 15,417	$ —	$ —	$ —
Interest-bearing deposits	599,201	599,201	—	599,201	—	—
Securities purchased under agreements to resell	1,839,576	1,839,586	—	1,839,586	—	—
Federal funds sold	14,082,000	14,082,000	—	14,082,000	—	—
Trading securities	11,416,483	11,416,483	—	11,416,483	—	—
Available-for-sale securities	434,177	434,177	—	434,177	—	—
Held-to-maturity securities	14,070,879	14,082,525	—	14,082,525	—	—
Advances (2)	46,358,204	46,426,913	—	46,426,913	—	—
Mortgage loans held for portfolio, net	10,883,590	11,082,299	—	11,071,158	11,141	—
Accrued interest receivable	204,910	204,910	—	204,910	—	—
Derivative assets	279,554	279,554	—	46,081	—	233,473
Liabilities:						
Deposits	847,020	847,109	—	847,109	—	—
Consolidated Obligations:						
Discount Notes (3)	49,553,251	49,558,074	—	49,558,074	—	—
Bonds (4)	44,590,325	45,032,831	—	45,032,831	—	—
Mandatorily redeemable capital stock	25,612	25,612	25,612	—	—	—
Accrued interest payable	144,699	144,699	—	144,699	—	—
Derivative liabilities	4,076	4,076	—	87,774	—	(83,698)
Other:						
Standby bond purchase agreements	—	405	—	405	—	—

(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) $10,267 of Advances recorded under the fair value option at September 30, 2019.

(3) Includes (in thousands) $13,914,315 of Consolidated Obligation Discount Notes recorded under the fair value option at September 30, 2019.

(4) Includes (in thousands) $5,436,423 of Consolidated Obligation Bonds recorded under the fair value option at September 30, 2019.

Financial Instruments	December 31, 2018					
		Fair Value				
	Carrying Value	Total	Level 1	Level 2	Level 3	Netting Adjustments and Cash Collateral (1)
Assets:						
Cash and due from banks	$ 10,037	$ 10,037	$ 10,037	$ —	$ —	$ —
Interest-bearing deposits	122	122	—	122	—	—
Securities purchased under agreements to resell	4,402,208	4,402,237	—	4,402,237	—	—
Federal funds sold	10,793,000	10,793,000	—	10,793,000	—	—
Trading securities	223,980	223,980	—	223,980	—	—
Available-for-sale securities	2,402,897	2,402,897	—	2,402,897	—	—
Held-to-maturity securities	15,791,222	15,575,368	—	15,575,368	—	—
Advances (2)	54,822,252	54,736,645	—	54,736,645	—	—
Mortgage loans held for portfolio, net	10,500,917	10,329,982	—	10,317,010	12,972	—
Accrued interest receivable	169,982	169,982	—	169,982	—	—
Derivative assets	65,765	65,765	—	23,341	—	42,424
Liabilities:						
Deposits	669,016	668,947	—	668,947	—	—
Consolidated Obligations:						
Discount Notes	46,943,632	46,944,523	—	46,944,523	—	—
Bonds (3)	45,659,138	45,385,615	—	45,385,615	—	—
Mandatorily redeemable capital stock	23,184	23,184	23,184	—	—	—
Accrued interest payable	147,337	147,337	—	147,337	—	—
Derivative liabilities	4,586	4,586	—	21,379	—	(16,793)
Other:						
Standby bond purchase agreements	—	443	—	443	—	—

(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) $10,008 of Advances recorded under the fair value option at December 31, 2018.

(3) Includes (in thousands) $3,906,610 of Consolidated Obligation Bonds recorded under the fair value option at December 31, 2018.

Summary of Valuation Methodologies and Primary Inputs.

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 2018 Annual Report on Form 10-K. There have been no significant changes in the valuation methodologies during 2019.

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, 2019 and December 31, 2018, 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, 2019				
	Total	**Level 1**	**Level 2**	**Level 3**	**Netting Adjustments and Cash Collateral (1)**
Recurring fair value measurements - Assets					
Trading securities:					
U.S. Treasury obligations	$ 9,386,559	$ —	$ 9,386,559	$ —	$ —
GSE obligations	2,029,426	—	2,029,426	—	—
U.S. obligation single-family MBS	498	—	498	—	—
Total trading securities	11,416,483	—	11,416,483	—	—
Available-for-sale securities:					
Certificates of deposit	300,003	—	300,003	—	—
GSE obligations	134,174	—	134,174	—	—
Total available-for-sale securities	434,177	—	434,177	—	—
Advances	10,267	—	10,267	—	—
Derivative assets:					
Interest rate related	277,282	—	43,809	—	233,473
Forward rate agreements	16	—	16	—	—
Mortgage delivery commitments	2,256	—	2,256	—	—
Total derivative assets	279,554	—	46,081	—	233,473
Total assets at fair value	$ 12,140,481	$ —	$ 11,907,008	$ —	$ 233,473
Recurring fair value measurements - Liabilities					
Consolidated Obligations:					
Discount Notes	$ 13,914,315	$ —	$ 13,914,315	$ —	$ —
Bonds	5,436,423	—	5,436,423	—	—
Total Consolidated Obligations	19,350,738	—	19,350,738	—	—
Derivative liabilities:					
Interest rate related	2,878	—	86,576	—	(83,698)
Forward rate agreements	652	—	652	—	—
Mortgage delivery commitments	546	—	546	—	—
Total derivative liabilities	4,076	—	87,774	—	(83,698)
Total liabilities at fair value	$ 19,354,814	$ —	$ 19,438,512	$ —	$ (83,698)

(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.

	Fair Value Measurements at December 31, 2018				
	Total	**Level 1**	**Level 2**	**Level 3**	**Netting Adjustments and Cash Collateral (1)**
Recurring fair value measurements - Assets					
Trading securities:					
GSE obligations	$ 223,368	$ —	$ 223,368	$ —	$ —
U.S. obligation single-family MBS	612	—	612	—	—
Total trading securities	223,980	—	223,980	—	—
Available-for-sale securities:					
Certificates of deposit	2,350,002	—	2,350,002	—	—
GSE obligations	52,895	—	52,895	—	—
Total available-for-sale securities	2,402,897	—	2,402,897	—	—
Advances	10,008	—	10,008	—	—
Derivative assets:					
Interest rate related	64,039	—	21,615	—	42,424
Mortgage delivery commitments	1,726	—	1,726	—	—
Total derivative assets	65,765	—	23,341	—	42,424
Total assets at fair value	$ 2,702,650	$ —	$ 2,660,226	$ —	$ 42,424
Recurring fair value measurements - Liabilities					
Consolidated Obligation Bonds	$ 3,906,610	$ —	$ 3,906,610	$ —	$ —
Derivative liabilities:					
Interest rate related	1,921	—	18,714	—	(16,793)
Forward rate agreements	2,664	—	2,664	—	—
Mortgage delivery commitments	1	—	1	—	—
Total derivative liabilities	4,586	—	21,379	—	(16,793)
Total liabilities at fair value	$ 3,911,196	$ —	$ 3,927,989	$ —	$ (16,793)
Nonrecurring fair value measurements - Assets (2)					
Mortgage loans held for portfolio	$ 311	$ —	$ —	$ 311	

(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 year ended December 31, 2018.

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 Obligations 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 gains (losses) 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, 2019 and 2018.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
Net Gains (Losses) from Changes in Fair Value Recognized in Earnings	**2019**	**2018**	**2019**	**2018**
Advances	$ 53	$ (46)	$ 259	$ (76)
Consolidated Discount Notes	(2,449)	—	(2,449)	—
Consolidated Bonds	(6,285)	(3,561)	(48,425)	12,300
Total net gains (losses)	$ (8,681)	$ (3,607)	$ (50,615)	$ 12,224

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 gains (losses) 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, 2019 or 2018. 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 Obligations for which the fair value option has been elected.

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

	September 30, 2019			December 31, 2018		
	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	$ 10,267	$ 267	$ 10,000	$ 10,008	$ 8
Consolidated Discount Notes	13,936,995	13,914,315	(22,680)	—	—	—
Consolidated Bonds	5,414,000	5,436,423	22,423	3,941,000	3,906,610	(34,390)

(1) At September 30, 2019 and December 31, 2018, 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)

	September 30, 2019			December 31, 2018		
Notional Amount	**Expire within one year**	**Expire after one year**	**Total**	**Expire within one year**	**Expire after one year**	**Total**
Standby Letters of Credit	$ 15,039,194	$1,051,164	$ 16,090,358	$ 14,578,925	$ 268,395	$ 14,847,320
Commitments for standby bond purchases	20,360	55,150	75,510	23,215	54,820	78,035
Commitments to purchase mortgage loans	738,399	—	738,399	146,009	—	146,009
Unsettled Consolidated Bonds, principal amount (1)	—	—	—	92,000	—	92,000
Unsettled Consolidated Discount Notes, principal amount (1)	20,000	—	20,000	525,000	—	525,000

(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, 2019 or December 31, 2018. 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, 2019 and 2018.

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

	Average Daily Balances for the Nine Months Ended September 30,	
	2019	**2018**
Loans to other FHLBanks	$ 3,846	$ 1,832
Borrowings from other FHLBanks	183	366

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, 2019 or 2018. 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, 2019 or December 31, 2018.

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 provides 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, 2019 or December 31, 2018.

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

	September 30, 2019		December 31, 2018	
	Balance	% of Total [(1)]	Balance	% of Total [(1)]
Advances	$ 3,214	7.0%	$ 3,424	6.2%
MPP	121	1.1	585	5.7
Regulatory capital stock	178	4.9	419	9.6

(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)

September 30, 2019	Regulatory Capital Stock Balance	Regulatory Capital Stock % of Total	Advance Principal	MPP Unpaid Principal Balance
JPMorgan Chase Bank, N.A.	$ 852	24%	$ 8,050	$ —
U.S. Bank, N.A.	497	14	4,974	17

December 31, 2018	Regulatory Capital Stock Balance	Regulatory Capital Stock % of Total	Advance Principal	MPP Unpaid Principal Balance
JPMorgan Chase Bank, N.A.	$ 1,085	25%	$ 23,400	$ —
U.S. Bank, N.A.	796	18	4,574	19
The Huntington National Bank	248	6	6	486

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, 2019 or December 31, 2018. 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 2019 and 2018, 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;
- uncertainties relating to the phasing out of the London InterBank Offered Rate (LIBOR) that could impact our mortgage-backed securities (MBS) investments, Advances, Consolidated Obligations, derivatives, and collateral;
- 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, 2019	June 30, 2019	March 31, 2019	December 31, 2018	September 30, 2018
STATEMENT OF CONDITION DATA AT PERIOD END:					
Total assets	$ 100,211	$ 96,424	$ 103,378	$ 99,203	$ 99,796
Advances	46,358	42,869	54,880	54,822	57,771
Mortgage loans held for portfolio	10,885	10,640	10,520	10,502	10,182
Allowance for credit losses on mortgage loans	1	1	1	1	1
Investments [1]	42,442	42,444	37,550	33,614	31,580
Consolidated Obligations, net:					
Discount Notes	49,553	41,493	44,212	46,944	45,313
Bonds	44,591	48,780	52,124	45,659	46,913
Total Consolidated Obligations, net	94,144	90,273	96,336	92,603	92,226
Mandatorily redeemable capital stock	26	23	23	23	22
Capital:					
Capital stock - putable	3,597	3,806	4,059	4,320	4,242
Retained earnings	1,055	1,037	1,031	1,023	1,008
Accumulated other comprehensive loss	(12)	(12)	(13)	(13)	(15)
Total capital	4,640	4,831	5,077	5,330	5,235
STATEMENT OF INCOME DATA FOR THE QUARTER:					
Net interest income	$ 87	$ 97	$ 122	$ 121	$ 130
Non-interest income (loss)	5	(3)	(18)	(11)	(9)
Non-interest expense	22	23	23	21	19
Affordable Housing Program assessments	7	7	8	9	10
Net income	$ 63	$ 64	$ 73	$ 80	$ 92
FINANCIAL RATIOS FOR THE QUARTER:					
Dividend payout ratio [2]	71.7%	90.1%	89.4%	80.8%	74.0%
Weighted average dividend rate [3]	4.50	5.50	6.00	6.00	6.00
Return on average equity	5.36	5.09	5.59	5.90	6.87
Return on average assets	0.26	0.26	0.28	0.30	0.36
Net interest margin [4]	0.36	0.40	0.47	0.46	0.52
Average equity to average assets	4.86	5.15	5.07	5.16	5.27
Regulatory capital ratio [5]	4.67	5.05	4.95	5.41	5.28
Operating expense to average assets [6]	0.069	0.069	0.070	0.064	0.060

(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 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 2019, the FHLB fulfilled its mission by providing access to 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 Mortgage Purchase Program (MPP) 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. One measure we use to assess mission achievement is our Primary Mission Asset ratio, which measures the sum of average Advances and mortgage loans as a percentage of average Consolidated Obligations (adjusted for certain high-quality liquid assets, as permitted by regulation). In the first nine months of 2019, the Primary Mission Asset ratio was slightly over 70 percent, exceeding 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.

	Ending Balances			Average Balances		
	September 30,		December 31,	Nine Months Ended September 30,		Year Ended December 31,
(In millions)	2019	2018	2018	2019	2018	2018
Mission Asset Activity:						
Advances (principal)	$ 46,186	$ 57,886	$ 54,872	$ 51,353	$ 66,005	$ 65,593
Mortgage Purchase Program (MPP):						
Mortgage loans held for portfolio (principal)	10,637	9,955	10,272	10,371	9,612	9,743
Mandatory Delivery Contracts (notional)	738	298	146	417	294	287
Total MPP	11,375	10,253	10,418	10,788	9,906	10,030
Letters of Credit (notional)	16,090	13,952	14,847	14,878	14,785	14,619
Total Mission Asset Activity	$ 73,651	$ 82,091	$ 80,137	$ 77,019	$ 90,696	$ 90,242

The balance of Mission Asset Activity was $73.7 billion at September 30, 2019, a decrease of $6.5 billion (eight percent) from year-end 2018, which was driven by lower Advance balances. Advance principal balances decreased $8.7 billion (16 percent) from year-end 2018. Average Advance principal balances for the nine months ended September 30, 2019 declined $14.7 billion compared to the same period of 2018 primarily due to a reduction in borrowings from a few large-asset members. Advance balances are often volatile due to 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, 2019, 69 percent of members held Mission Asset Activity, which was relatively stable compared to prior periods.

As in recent years, most members continued to have modest demand for Advance borrowings. Based on the most-recently available figures, members funded an average of 2.9 percent of their assets with Advances. 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 $0.4 billion (four percent) from year-end 2018. During the first nine months of 2019, we purchased $1.6 billion of mortgage loans, while principal reductions totaled $1.2 billion.

Based on earnings in the first nine months of 2019, we accrued $22 million for the Affordable Housing Program (AHP) pool of funds to be available to members in 2020. 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
The balance of investments at September 30, 2019 was $42.4 billion, an increase of $8.8 billion (26 percent) from year-end 2018. Investments averaged $37.0 billion in the first nine months of 2019, an increase of $7.1 billion (24 percent) from the average balance during the same period of 2018. We increased investments in order to hold more asset liquidity, which we obtained primarily by purchasing U.S. Treasury obligations as part of our plan to manage the implementation of the Finance Agency's Advisory Bulletin on the maintenance of sufficient liquidity. In addition, liquidity investments can vary significantly on a daily basis during times of volatility in Advance balances. At September 30, 2019, investments included $14.0 billion of MBS and $28.4 billion of other investments, which consisted of highly-rated short-term instruments and longer-term U.S. Treasury and GSE obligations held for liquidity. All of our MBS held at September 30, 2019 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 2019 across a variety of liquidity measures, as discussed in the "Liquidity Risk" section of "Quantitative and Qualitative Disclosures About Risk Management."

Capital
Capital adequacy surpassed all minimum regulatory capital requirements in the first nine months of 2019. The GAAP capital-to-assets ratio at September 30, 2019 was 4.63 percent, while the regulatory capital-to-assets ratio was 4.67 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 amount of GAAP and regulatory capital decreased $690 million and $688 million, respectively, in the first nine months of 2019, due to our repurchase of over $1.2 billion in excess stock from members. These repurchases were a response to the decrease in Advances in 2019. Retained earnings totaled $1.1 billion at September 30, 2019, an increase of three percent from year-end 2018. The decreases in GAAP and regulatory capital were partially offset by purchases of capital stock associated with new Advance activity from certain members.

Results of Operations

Overall Results
The table below summarizes our results of operations.

	Three Months Ended September 30,		Nine Months Ended September 30,		Year Ended December 31,
(Dollars in millions)	2019	2018	2019	2018	2018
Net income	$ 63	$ 92	$ 200	$ 259	$ 339
Affordable Housing Program assessments	7	10	22	29	38
Return on average equity (ROE)	5.36%	6.87%	5.35%	6.41%	6.29%
Return on average assets	0.26	0.36	0.27	0.33	0.32
Weighted average dividend rate	4.50	6.00	5.36	5.84	5.88
Average 3-month LIBOR	2.20	2.34	2.46	2.20	2.31
ROE spread to 3-month LIBOR	3.16	4.53	2.89	4.21	3.98
Dividend rate spread to 3-month LIBOR	2.30	3.66	2.90	3.64	3.57

Net income decreased $29 million (32 percent) in the three-month comparison period and $59 million (23 percent) in the nine-month comparison period. Net income was lower in both comparison periods primarily due to lower spreads earned on Advances and a decrease in Advance balances. However, the lower net income in both comparison periods was partially offset by net gains realized on certain derivatives.

Earnings levels continued to represent competitive returns on stockholders' capital investment. ROE was higher than short-term rates in the periods presented above, while we maintained risk exposures in line with our appetite for a moderate risk profile. The spread between ROE and short-term rates, such as 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 2019, we paid stockholders a quarterly 4.50 percent annualized dividend rate on their capital investment in our company. The lower dividend rate compared to the 6.00 percent and 5.50 percent annualized rates in the first and second quarters of 2019, respectively, was in part due to the decline in the interest rate environment over the last several quarters.

We believe that our operations and financial condition will continue to generate competitive profitability, reflecting the combination of a stable business model, and a conservative management of risk. Our business model is structured to be able to absorb sharp changes in Mission Asset Activity because we can execute commensurate changes in liability balances and capital. Key factors that can cause significant periodic volatility in our profitability are changes in the level of interest rates, changes in spreads between benchmark interest rates and our short-term funding costs, recognition of net amortization due to accelerated prepayments of mortgage assets, and 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 2019		Quarter 2 2019		Quarter 1 2019		Nine Months Ended September 30,		Year 2018	
							2019	2018		
	Ending	Average	Ending	Average	Ending	Average	Average	Average	Ending	Average
Federal funds effective	1.90%	2.19%	2.40%	2.40%	2.43%	2.40%	2.33%	1.71%	2.40%	1.83%
Secured Overnight Financing Rate (SOFR)	2.35	2.26	2.50	2.43	2.65	2.44	2.38	1.71	3.00	1.85
3-month LIBOR	2.09	2.20	2.32	2.51	2.60	2.69	2.46	2.20	2.81	2.31
2-year LIBOR	1.63	1.70	1.81	2.20	2.38	2.62	2.17	2.67	2.66	2.75
10-year LIBOR	1.56	1.70	1.96	2.30	2.41	2.67	2.22	2.91	2.71	2.95
2-year U.S. Treasury	1.62	1.69	1.76	2.13	2.26	2.49	2.10	2.43	2.49	2.52
10-year U.S. Treasury	1.67	1.79	2.01	2.33	2.41	2.65	2.26	2.87	2.69	2.91
15-year mortgage current coupon (1)	2.20	2.22	2.29	2.63	2.67	2.97	2.60	3.13	3.06	3.20
30-year mortgage current coupon (1)	2.60	2.62	2.73	3.07	3.11	3.41	3.03	3.57	3.51	3.65

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

The target overnight Federal funds rate was in the range of 1.75 to 2.00 percent at September 30, 2019, a decrease from the range of 2.25 to 2.50 percent at June 30, 2019 due to two rate cuts by the Federal Reserve in the third quarter of 2019. In October 2019, the Federal Reserve decreased the target Federal funds rate to a range of 1.50 to 1.75 percent.

Average short-term rates (i.e., federal funds effective, SOFR and 3-month LIBOR) were still approximately 0.25 to 0.65 percentage points higher in the first nine months of 2019 compared to the same period of 2018, while average long-term rates decreased by approximately 0.50 to 0.70 percentage points during that same period. The higher short-term interest rate environment continued to benefit income in the first nine months of 2019 primarily because of earnings generated by funding assets with interest-free capital. However, the trend of higher short-term interest rates with lower long-term rates has resulted in flatter, and at certain maturity points inverted, market yield curves, which may lower profitability further if this trend continues. For example, a flat to inverted yield curve may result in narrower spreads earned on new long-term mortgage assets as the costs of new Consolidated Obligations used to fund them increase.

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 2018 Annual Report on Form 10-K. "Quantitative and Qualitative Disclosures About Risk Management" provides details on current risk exposures.

Regulatory and Legislative Risk and Significant Developments

LIBOR Replacement; Finance Agency Supervisory Letter: We are planning for the replacement of LIBOR given the announcement that the LIBOR index is expected to be phased out by no later than the end of 2021 and the Federal Reserve Bank of New York's establishment of the Secured Overnight Financing Rate (SOFR) as its recommended alternative to U.S. dollar LIBOR. In the first nine months of 2019, we have continued to participate in the FHLBank System's issuances of SOFR-linked Consolidated Bonds. At September 30, 2019, $15.8 billion (99 percent) of our adjustable-rate Consolidated Bonds were indexed to SOFR. We have also continued to offer SOFR-linked Advances and began swapping certain instruments to adjustable-rates tied to SOFR and the overnight Federal funds effective rate in 2019. However, the majority of our variable-rate assets still remain indexed to LIBOR. Therefore, we are continuing to plan for the eventual replacement of our LIBOR-indexed instruments away from the LIBOR benchmark interest rate, including our adoption of a LIBOR transition plan in the first quarter of 2019. Part of our plan includes having implemented fallback language for our LIBOR-indexed Advances and Consolidated Bonds in new and legacy contracts. As for our derivatives and investments that are tied to LIBOR, we are monitoring market-wide efforts to enhance fallback language for new activity and develop frameworks to address existing transactions. We are also monitoring the transition relief proposed by the Financial Accounting Standards Board (FASB) concerning the accounting for contract modifications.

On September 27, 2019, the Finance Agency issued a Supervisory Letter - Planning for LIBOR Phase-Out (Supervisory Letter) to the FHLBanks that the Finance Agency stated is designed to ensure the FHLBanks will be able to identify and prudently manage the risks associated with the termination of LIBOR in a safe and sound manner. The Supervisory Letter provides that the FHLBanks should, by March 31, 2020, cease entering into new LIBOR referenced financial assets, liabilities, and derivatives with maturities beyond December 31, 2021 for all product types except investments. With respect to investments, the FHLBanks should, by December 31, 2019, stop purchasing investments that reference LIBOR and mature after December 31, 2021. These phase-out dates do not apply to collateral accepted by the FHLBanks. The Supervisory Letter also directs the FHLBanks to update their pledged collateral certification reporting requirements by March 31, 2020 in an effort to encourage members to distinguish LIBOR-linked collateral maturing after December 31, 2021. The Finance Agency may permit certain exceptions to its Supervisory Letter given there may be LIBOR-linked products serving compelling mission, risk mitigating, and/or hedging purposes for the FHLBanks that do not currently have readily available alternatives.

Overall, the market transition away from LIBOR towards SOFR is expected to be gradual and complicated, including the development of term and credit adjustments to accommodate differences between LIBOR and SOFR. As such, we are not currently able to predict the ultimate impact of such a transition on our business, financial condition, and results of operations.

Capital Stock Management Advisory Bulletin: *Advisory Bulletin 2019-03 - Capital Stock Management.* On August 14, 2019, the Finance Agency issued an Advisory Bulletin providing guidance that augments existing statutory and regulatory capital requirements to require each FHLBank to maintain at least a two percent ratio of capital stock to total assets. Beginning in February 2020, the Finance Agency will consider the proportion of capital stock to assets, measured on a daily average basis at month end, when assessing each FHLBank's capital management practices. We do not expect this guidance to have a material impact on our capital management practices, financial condition, or results of operation.

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, 2019		June 30, 2019		March 31, 2019		December 31, 2018	
	Balance	Percent[(1)]	Balance	Percent[(1)]	Balance	Percent[(1)]	Balance	Percent[(1)]
Adjustable/Variable-Rate Indexed:								
LIBOR	$ 13,604	29%	$ 16,127	37%	$ 20,462	38%	$ 28,740	52%
SOFR	1,050	2	1,050	3	1,400	2	1,400	3
Other	379	1	416	1	394	1	744	1
Total	15,033	32	17,593	41	22,256	41	30,884	56
Fixed-Rate:								
Repurchase based (REPO)	13,399	29	7,520	17	15,187	28	7,003	13
Regular Fixed-Rate	12,364	27	11,486	27	10,991	20	10,972	20
Putable [(2)]	1,414	3	1,020	3	885	1	460	1
Amortizing/Mortgage Matched	2,583	6	2,646	6	2,753	5	2,702	5
Other	1,393	3	2,490	6	2,806	5	2,851	5
Total	31,153	68	25,162	59	32,622	59	23,988	44
Total Advances Principal	$ 46,186	100%	$ 42,755	100%	$ 54,878	100%	$ 54,872	100%
Letters of Credit (notional)	$ 16,090		$ 15,697		$ 13,812		$ 14,847	

(1) As a percentage of total Advances principal.
(2) Excludes Putable Advances where the related put options have expired or where the Advance is indexed to a variable-rate. These Advances are classified based on their current terms.

Advance balances at September 30, 2019 decreased 16 percent compared to year-end 2018. Although a number of members increased their borrowings in the first nine months of 2019, a reduction in borrowings from our largest borrower led to the net decrease in Advances. 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, 2019	June 30, 2019	March 31, 2019	December 31, 2018
Average Advances-to-assets for members				
Assets less than $1.0 billion (546 members)	2.71%	2.67%	2.82%	3.05%
Assets over $1.0 billion (93 members)	3.87	3.65	3.67	4.26
All members	2.88	2.81	2.94	3.22

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

(Dollars in millions)

September 30, 2019			December 31, 2018		
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.	$ 8,050	17%	JPMorgan Chase Bank, N.A.	$ 23,400	43%
U.S. Bank, N.A.	4,974	11	U.S. Bank, N.A.	4,574	8
Third Federal Savings and Loan Association	3,896	8	Third Federal Savings and Loan Association	3,727	7
Fifth Third Bank	2,856	6	Nationwide Life Insurance Company	2,510	5
1st Tennessee Bank, N.A.	2,150	4	Pinnacle Bank	1,444	3
Total of Top 5	$ 21,926	46%	Total of Top 5	$ 35,655	66%

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 2019.

(In millions)	MPP Principal
Balance at December 31, 2018	$ 10,272
Principal purchases	1,587
Principal reductions	(1,222)
Balance at September 30, 2019	$ 10,637

Although there were 78 active members participating in the MPP at September 30, 2019, approximately 62 percent of the principal purchases in the first nine months of 2019 resulted from activity of our three largest sellers. All loans acquired in the first nine months of 2019 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 2019 equated to a 12 percent annual constant prepayment rate, up from the eight percent rate for all of 2018. The reductions in mortgage rates that occurred in the first nine months of 2019 have accelerated prepayment speeds. We expect the recent trend of faster prepayments to continue in the remainder of 2019 unless mortgage rates rise.

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 2019. MPP yields earned in the first nine months of 2019, 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 our investment portfolio.

(In millions)	Nine Months Ended September 30, 2019		Year Ended December 31, 2018	
	Ending Balance	Average Balance	Ending Balance	Average Balance
Liquidity investments	$ 28,406	$ 21,358	$ 17,858	$ 13,989
MBS	14,036	15,451	15,756	15,741
Other investments (1)	—	203	—	64
Total investments	$ 42,442	$ 37,012	$ 33,614	$ 29,794

(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 actual Advances, anticipated demand for 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 increase in liquidity investments in the first nine months of 2019, was driven by volatility in short-term and variable-rate Advance borrowings and the purchases of U.S. Treasury obligations to help meet new regulatory liquidity requirements that went into effect on March 31, 2019. Under the new regulatory requirements, liquidity includes certain high-quality liquid assets, which are defined as U.S. Treasury obligations with remaining maturities of 10 years or less held as trading securities or available-for-sale securities.

Our overarching strategy for balances of MBS is to keep holdings as close as possible to the regulatory maximum, subject to the availability of securities that we believe provide acceptable risk/return tradeoffs. Finance Agency regulations prohibit us from purchasing MBS if our investment in these securities exceeds three times regulatory capital on the day we intend to purchase the securities. The ratio of MBS to regulatory capital was 3.00 at September 30, 2019. Per regulation, we will suspend the purchase of new MBS until regular principal paydowns result in the ratio falling below three times regulatory capital.

The balance of MBS at September 30, 2019 consisted of $12.2 billion of securities issued by Fannie Mae or Freddie Mac (of which $8.0 billion were floating-rate securities), $0.3 billion of floating-rate securities issued by the National Credit Union Administration (NCUA), and $1.5 billion of securities issued by Ginnie Mae (which are primarily fixed rate). At September 30, 2019, the floating-rate MBS issued by Fannie Mae, Freddie Mac and the NCUA were indexed to LIBOR. As noted in the "Business Outlook and Risk Management" section of the "Executive Overview," the Finance Agency's Supervisor Letter directed the FHLBanks by December 31, 2019, to stop purchasing investments that reference LIBOR and mature after December 31, 2021.

The table below shows principal purchases and paydowns of our MBS for the first nine months of 2019.

(In millions)	MBS Principal
Balance at December 31, 2018	$ 15,734
Principal purchases	909
Principal paydowns	(2,625)
Balance at September 30, 2019	$ 14,018

MBS principal paydowns in the first nine months of 2019 equated to a 20 percent annual constant prepayment rate, up from the 16 percent rate experienced in all of 2018. The higher prepayment rate experienced in 2019 is a result of the decline in mortgage rates.

Consolidated Obligations

We fund variable-rate assets with Discount Notes (a portion of which are swapped), adjustable-rate Bonds, and swapped fixed-rate Bonds because they give us the ability to effectively match the underlying rate reset periods embedded in these assets. The balances and composition of our Consolidated Obligations tend to fluctuate with changes in the balances and composition of our assets. In addition, changes in the amount and composition of our funding may be necessary from time to time to meet the days positive liquidity and asset/liability maturity funding gap requirements under the new regulatory liquidity guidance discussed in the "Liquidity Risk" section of "Quantitative and Qualitative Disclosures About Risk Management."

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

(In millions)	Nine Months Ended September 30, 2019		Year Ended December 31, 2018	
	Ending Balance	Average Balance	Ending Balance	Average Balance
Discount Notes:				
Unswapped	$ 35,703	$ 41,570	$ 47,071	$ 49,273
Swapped	13,937	3,546	—	—
Total par Discount Notes	49,640	45,116	47,071	49,273
Other items (1)	(87)	(104)	(127)	(88)
Total Discount Notes	49,553	45,012	46,944	49,185
Bonds:				
Unswapped fixed-rate	22,850	25,096	25,982	26,566
Unswapped adjustable-rate (2)	15,904	16,899	15,470	16,967
Swapped fixed-rate	5,769	5,832	4,195	5,982
Total par Bonds	44,523	47,827	45,647	49,515
Other items (1)	68	40	12	(13)
Total Bonds	44,591	47,867	45,659	49,502
Total Consolidated Obligations (3)	$ 94,144	$ 92,879	$ 92,603	$ 98,687

(1) Includes unamortized premiums/discounts, fair value option valuation adjustments, hedging and other basis adjustments.
(2) Unswapped adjustable-rate Bonds are indexed to either LIBOR or SOFR. At September 30, 2019, 1 percent were indexed to LIBOR and 99 percent were indexed to SOFR. At December 31, 2018, 69 percent were indexed to LIBOR and 31 percent were indexed to SOFR.
(3) 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) $1,010,271 and $1,031,617 at September 30, 2019 and December 31, 2018, respectively.

The balances of Consolidated Obligations were relatively stable in the periods shown above with fluctuations resulting from changes in the balances of our assets. Beginning in the third quarter of 2019, we began swapping term Discount Notes to adjustable-rates tied to the overnight Federal funds effective rate in order to reduce the repricing risk of Discount Notes being used to fund certain overnight and shorter-term assets.

Deposits

Total deposits with us are normally a relatively minor source of low-cost funding. Total interest bearing deposits at September 30, 2019 were $0.8 billion, an increase of 27 percent from year-end 2018.

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, 2019		Year Ended December 31, 2018	
	Period End	Average	Period End	Average
GAAP and Regulatory Capital				
GAAP Capital Stock	$ 3,597	$ 3,949	$ 4,320	$ 4,387
Mandatorily Redeemable Capital Stock	26	25	23	30
Regulatory Capital Stock	3,623	3,974	4,343	4,417
Retained Earnings	1,055	1,066	1,023	1,025
Regulatory Capital	$ 4,678	$ 5,040	$ 5,366	$ 5,442

	Nine Months Ended September 30, 2019		Year Ended December 31, 2018	
	Period End	Average	Period End	Average
GAAP and Regulatory Capital-to-Assets Ratio				
GAAP	4.63%	5.03%	5.37%	5.11%
Regulatory [1]	4.67	5.07	5.41	5.16

(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 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 may be used to capitalize a portion of growth in Mission Assets. Throughout the first nine months of 2019, the amount of excess stock, as defined by our Capital Plan, grew as Advance balances decreased. In order to help manage our capital and financial performance, we repurchased over $1.2 billion of excess capital stock in the first nine months of 2019. As a result, excess stock decreased $676 million from year-end 2018 to end the quarter at $339 million. The repurchase of excess stock also resulted in decreases to GAAP and regulatory capital balances and the related capital-to-assets ratios.

Membership and Stockholders

In the first nine months of 2019, we added five new member stockholders and lost 12 member stockholders, ending the quarter at 639 member stockholders. The decline in membership during the first nine months of 2019 was primarily attributable to intra-district merger activity.

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, 2019 and 2018. 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,			
	2019		2018		2019		2018	
	Amount	ROE (1)	Amount	ROE (1)	Amount	ROE (1)	Amount	ROE (1)
Net interest income	$ 87	7.46%	$ 130	9.76%	$ 307	8.21%	$ 377	9.34%
Non-interest income (loss):								
Net gains (losses) on investment securities	70	6.00	1	0.06	264	7.05	1	0.02
Net gains (losses) on derivatives and hedging activities	(60)	(5.15)	(9)	(0.66)	(238)	(6.37)	(46)	(1.15)
Net gains (losses) on financial instruments held under fair value option	(8)	(0.74)	(4)	(0.27)	(51)	(1.35)	12	0.30
Other non-interest income, net	3	0.26	3	0.20	8	0.22	8	0.20
Total non-interest income (loss)	5	0.37	(9)	(0.67)	(17)	(0.45)	(25)	(0.63)
Total income	92	7.83	121	9.09	290	7.76	352	8.71
Non-interest expense	22	1.87	19	1.45	68	1.81	64	1.58
Affordable Housing Program assessments	7	0.60	10	0.77	22	0.60	29	0.72
Net income	$ 63	5.36%	$ 92	6.87%	$ 200	5.35%	$ 259	6.41%

(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, 2019 Amount	2019 % of Earning Assets	2018 Amount	2018 % of Earning Assets	Nine Months Ended September 30, 2019 Amount	2019 % of Earning Assets	2018 Amount	2018 % of Earning Assets
Components of net interest rate spread:								
Net (amortization)/accretion (1) (2)	$ (12)	(0.05)%	$ (5)	(0.02)%	$ (23)	(0.03)%	$ (13)	(0.02)%
Prepayment fees on Advances, net (2)	1	—	—	—	1	—	1	—
Other components of net interest rate spread	70	0.30	107	0.43	236	0.32	313	0.40
Total net interest rate spread	59	0.25	102	0.41	214	0.29	301	0.38
Earnings from funding assets with interest-free capital	28	0.11	28	0.11	93	0.12	76	0.10
Total net interest income/net interest margin (3)	$ 87	0.36 %	$ 130	0.52 %	$ 307	0.41 %	$ 377	0.48 %

(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) This component of net interest rate spread has been segregated to display its relative impact.
(3) Net interest margin is net interest income as a percentage of average total interest earning assets.

Net Amortization/Accretion (generally referred to as "amortization"): While net amortization has been moderate over the past few years, it can become substantial and volatile when mortgage rates decrease. Amortization in the three and nine months ended September 30, 2019 increased compared to the 2018 periods primarily due to the decline in mortgage rates during 2019, which led to accelerated prepayments of mortgage assets.

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, 2019 and 2018, reflecting a low amount of member prepayments of Advances.

Other Components of Net Interest Rate Spread: The total other components of net interest rate spread decreased $37 million and $77 million in the three- and nine-month comparison periods, respectively. The net decreases were primarily due to the factors below.

Nine-Months Comparison

- **Lower spreads on Advances-*Unfavorable*:** Lower spreads earned on certain Advances decreased net interest income by an estimated $53 million. The lower spreads were driven by a narrower spread on LIBOR-indexed Advances funded with Discount Notes and a change in composition of Advances as a result of paydowns of Advances that earned relatively higher spreads.

- **Lower average Advance balances-*Unfavorable*:** The $14.5 billion decline in average Advance balances decreased net interest income by an estimated $23 million. The decline in average Advance balances was primarily due to the reduction in borrowings by a few large-asset members.

- **Lower spreads on non-mortgage investments-*Unfavorable*:** Lower spreads on non-mortgage investments decreased net interest income by an estimated $8 million. This decrease in net interest income was partially offset by earnings increases in non-interest income related to derivatives and hedging activities and fair value adjustments as many of these non-mortgage investments were classified as trading securities and hedged with interest rate swaps.

- **Growth in average MPP balances-*Favorable*:** The $0.8 billion increase in the average balance of mortgage loans held for portfolio improved net interest income by an estimated $7 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 by approximately the same relative magnitude. In addition to the factors above, lower spreads on mortgage assets decreased net interest income by an estimated $5 million in the three-months comparison.

Earnings from Capital: Earnings from capital were flat in the three-months comparison due to short-term interest rates beginning to decline in the third quarter of 2019 and lower average capital balances. However, earnings from capital increased $17 million in the nine months ended September 30, 2019 compared to the same period in 2018 primarily due to average short-term rates being approximately 0.25 to 0.65 percentage points higher in the 2019 period.

Average Balance Sheet and Rates

The following table provides average balances and rates for major balance sheet accounts, which determine the changes in net interest rate spreads. Interest amounts and average rates are affected by our use of derivatives and the related accounting elections we make. In connection with the January 1, 2019, prospective adoption of the FASB's *Targeted Improvements to Accounting for Hedging Activities* standard, interest amounts reported for Advances, Other investments and Swapped Bonds include gains (losses) on hedged items and derivatives in qualifying fair value hedge relationships for the three and nine months ended September 30, 2019.

In addition, the net interest settlements of interest receivables or payables associated with derivatives in a fair value hedge relationship are included in net interest income and interest rate spread. However, if the derivatives do not qualify for fair value hedge accounting, the related net interest settlements of interest receivables or payables are recorded in "Non-interest income (loss)" as "Net gains (losses) on derivatives and hedging activities" and therefore are excluded from the calculation of net interest rate spread. 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 September 30, 2019			Three Months Ended September 30, 2018		
	Average Balance	Interest	Average Rate (1)	Average Balance	Interest	Average Rate (1)
Assets:						
Advances	$ 44,153	$ 268	2.41%	$ 59,109	$ 342	2.30%
Mortgage loans held for portfolio (2)	10,749	83	3.08	10,005	80	3.18
Federal funds sold and securities purchased under resale agreements	13,369	76	2.24	12,005	60	1.98
Interest-bearing deposits in banks (3) (4) (5)	1,178	6	2.12	2,539	15	2.25
Mortgage-backed securities	14,908	95	2.52	16,385	101	2.45
Other investments (4)	10,546	63	2.36	41	—	2.22
Loans to other FHLBanks	—	—	—	—	—	—
Total interest-earning assets	94,903	591	2.47	100,084	598	2.37
Less: allowance for credit losses on mortgage loans	1			1		
Other assets	520			289		
Total assets	$ 95,422			$ 100,372		
Liabilities and Capital:						
Term deposits	$ 39	—	2.47	$ 86	—	1.83
Other interest bearing deposits (5)	829	4	1.96	707	3	1.72
Discount Notes	43,332	239	2.18	41,694	208	1.98
Unswapped fixed-rate Bonds	23,952	138	2.29	26,391	138	2.07
Unswapped adjustable-rate Bonds	15,149	90	2.35	19,126	97	2.02
Swapped Bonds	6,565	33	1.97	6,434	21	1.28
Mandatorily redeemable capital stock	27	—	3.75	26	1	6.22
Other borrowings	—	—	2.19	—	—	—
Total interest-bearing liabilities	89,893	504	2.22	94,464	468	1.96
Non-interest bearing deposits	9			5		
Other liabilities	881			613		
Total capital	4,639			5,290		
Total liabilities and capital	$ 95,422			$ 100,372		
Net interest rate spread			0.25%			0.41%
Net interest income and net interest margin (6)		$ 87	0.36%		$ 130	0.52%
Average interest-earning assets to interest-bearing liabilities			105.57%			105.95%

(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 as a percentage of average total interest earning assets.

(Dollars in millions)	Nine Months Ended September 30, 2019			Nine Months Ended September 30, 2018		
	Average Balance	Interest	Average Rate (1)	Average Balance	Interest	Average Rate (1)
Assets:						
Advances	$ 51,397	$ 992	2.58%	$ 65,905	$ 1,010	2.05%
Mortgage loans held for portfolio (2)	10,607	258	3.25	9,836	236	3.20
Federal funds sold and securities purchased under resale agreements	13,404	240	2.39	12,409	163	1.76
Interest-bearing deposits in banks (3) (4) (5)	1,560	29	2.47	1,768	28	2.13
Mortgage-backed securities	15,451	304	2.64	15,748	279	2.36
Other investments (4)	6,597	115	2.33	36	—	1.82
Loans to other FHLBanks	4	—	2.43	2	—	1.46
Total interest-earning assets	99,020	1,938	2.62	105,704	1,716	2.17
Less: allowance for credit losses on mortgage loans	1			1		
Other assets	423			279		
Total assets	$ 99,442			$105,982		
Liabilities and Capital:						
Term deposits	$ 53	1	2.44	$ 76	1	1.65
Other interest bearing deposits (5)	701	11	2.11	623	7	1.50
Discount Notes	45,012	795	2.36	47,273	605	1.71
Unswapped fixed-rate Bonds	25,140	427	2.27	26,696	411	2.06
Unswapped adjustable-rate Bonds	16,899	309	2.45	18,689	251	1.80
Swapped Bonds	5,828	87	2.00	6,598	63	1.27
Mandatorily redeemable capital stock	25	1	4.86	27	1	6.01
Other borrowings	—	—	2.14	—	—	1.81
Total interest-bearing liabilities	93,658	1,631	2.33	99,982	1,339	1.79
Non-interest bearing deposits	9			4		
Other liabilities	772			593		
Total capital	5,003			5,403		
Total liabilities and capital	$ 99,442			$105,982		
Net interest rate spread			0.29%			0.38%
Net interest income and net interest margin (6)		$ 307	0.41%		$ 377	0.48%
Average interest-earning assets to interest-bearing liabilities			105.73%			105.72%

(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 as a percentage of average total interest earning assets.

Rates on our short-term and adjustable-rate assets and liabilities increased more substantially than rates on our longer-term assets and liabilities in the nine months ended September 30, 2019 compared to the same period in 2018 due to the increases in short-term LIBOR and the Federal funds target rate in the second half of 2018 that persisted throughout the first two quarters of 2019. The decreases in net interest margin in the three and nine months ended September 30, 2019 compared to the same periods in 2018 were primarily driven by lower spreads earned on Advances and a decrease in average Advance balances.

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, 2019 over 2018			Nine Months Ended September 30, 2019 over 2018		
	Volume (1)(3)	Rate (2)(3)	Total	Volume (1)(3)	Rate (2)(3)	Total
Increase (decrease) in interest income						
Advances	$ (90)	$ 16	$ (74)	$ (249)	$ 231	$ (18)
Mortgage loans held for portfolio	6	(3)	3	19	3	22
Federal funds sold and securities purchased under resale agreements	7	9	16	14	63	77
Interest-bearing deposits in banks	(8)	(1)	(9)	(3)	4	1
MBS	(9)	3	(6)	(6)	31	25
Other investments	63	—	63	115	—	115
Loans to other FHLBanks	—	—	—	—	—	—
Total	(31)	24	(7)	(110)	332	222
Increase (decrease) in interest expense						
Term deposits	—	—	—	—	—	—
Other interest-bearing deposits	1	—	1	1	3	4
Discount Notes	9	22	31	(30)	220	190
Unswapped fixed-rate Bonds	(14)	14	—	(25)	41	16
Unswapped adjustable-rate Bonds	(22)	15	(7)	(26)	84	58
Swapped Bonds	—	12	12	(8)	32	24
Mandatorily redeemable capital stock	—	(1)	(1)	—	—	—
Other borrowings	—	—	—	—	—	—
Total	(26)	62	36	(88)	380	292
Increase (decrease) in net interest income	$ (5)	$ (38)	$ (43)	$ (22)	$ (48)	$ (70)

(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. As noted above, for the three and nine months ended September 30, 2019, gains (losses) on hedged items and derivatives in qualifying fair value hedge relationships are recorded in interest income or expense as a result of the prospective adoption of new hedge accounting guidance. In addition, 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. As such, beginning in 2019, all the effects on earnings of derivatives qualifying for fair value hedge accounting are reflected in net interest income. The effect on earnings from derivatives not receiving hedge accounting is provided in the "Non-Interest Income (Loss)" section below.

(In millions)	Three Months Ended September 30,		Nine Months Ended September 30,	
	2019	2018	2019	2018
Advances:				
Amortization of hedging activities in net interest income	$ —	$ —	$ —	$ (1)
Gains (losses) on designated fair value hedges	(4)	N/A	(7)	N/A
Net interest settlements included in net interest income	8	8	34	15
Mortgage loans:				
Amortization of derivative fair value adjustments in net interest income	(1)	—	(2)	(1)
Consolidated Obligation Bonds:				
Net interest settlements included in net interest income	1	(1)	1	(3)
Increase (decrease) to net interest income	$ 4	$ 7	$ 26	$ 10

Most of our use of derivatives is to synthetically convert the fixed interest rates on certain Advances, investments and Consolidated Obligations to adjustable rates tied to an eligible benchmark rate (e.g., one- and three-month LIBOR, the Federal funds effective rate, or SOFR). The larger positive net effect of derivatives on net interest income in the first nine months of 2019 was primarily due to higher short-term benchmark interest rates, which resulted in an increase in 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 (Loss)

Non-interest income (loss) consists of certain realized and unrealized gains (losses) on investment securities, derivatives activities, financial instruments held under the fair value option, and other non-interest earning activities. The following tables present the net effect of derivatives and hedging activities on non-interest income (loss). In connection with the prospective adoption of new hedge accounting guidance, gains (losses) on hedged items and derivatives in a qualifying fair value hedge relationship are no longer recorded in non-interest income (loss) for the three and nine months ended September 30, 2019. As such, beginning in 2019, the effects of derivatives and hedging activities on non-interest income relate only to derivatives not qualifying for fair value hedge accounting.

(In millions)	Advances	Investment Securities	Mortgage Loans	Bonds	Discount Notes	Balance Sheet [1]	Other	Total
Three Months Ended September 30, 2019								
Net effect of derivatives and hedging activities								
Gains (losses) on derivatives not receiving hedge accounting	$ (1)	$ (84)	$ —	$ 7	$ 1	$ 19	$ —	$ (58)
Net interest settlements on derivatives not receiving hedge accounting	—	3	—	(6)	(1)	—	—	(4)
Price alignment amount	—	—	—	—	—	—	2	2
Net gains (losses) on derivatives and hedging activities	(1)	(81)	—	1	—	19	2	(60)
Gains (losses) on trading securities [2]	—	70	—	—	—	—	—	70
Gains (losses) on financial instruments held under fair value option [3]	—	—	—	(6)	(2)	—	—	(8)
Total net effect on non-interest income	$ (1)	$ (11)	$ —	$ (5)	$ (2)	$ 19	$ 2	$ 2
Three Months Ended September 30, 2018								
Net effect of derivatives and hedging activities								
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)

(In millions)	Advances	Investment Securities	Mortgage Loans	Bonds	Discount Notes	Balance Sheet [1]	Other	Total
Nine Months Ended September 30, 2019								
Net effect of derivatives and hedging activities								
Gains (losses) on derivatives not receiving hedge accounting	$ (3)	$ (284)	$ 3	$ 54	$ 1	$ 4	$ —	$ (225)
Net interest settlements on derivatives not receiving hedge accounting	1	8	—	(23)	(1)	—	—	(15)
Price alignment amount	—	—	—	—	—	—	2	2
Net gains (losses) on derivatives and hedging activities	(2)	(276)	3	31	—	4	2	(238)
Gains (losses) on trading securities [2]	—	264	—	—	—	—	—	264
Gains (losses) on financial instruments held under fair value option [3]	—	—	—	(49)	(2)	—	—	(51)
Total net effect on non-interest income	$ (2)	$ (12)	$ 3	$ (18)	$ (2)	$ 4	$ 2	$ (25)
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)

(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 and consistent with the close hedging relationships of our derivative transactions. Most of the volatility was a result of both unrealized fair value gains and losses on instruments we expect to hold to maturity and the costs of utilizing swaptions to hedge market risk exposure associated with mortgage assets.

During the first nine months of 2019, we began purchasing U.S. Treasury obligations to help meet the new regulatory liquidity requirements. At September 30, 2019, we held nearly $9.4 billion of U.S. Treasury obligations and swapped them to a variable rate. These investments are classified as trading securities and are recorded at fair value, with changes in fair value reported in non-interest income (loss). There are a number of factors that affect the fair value of these securities, including changes in interest rates, the passage of time, and volatility. By hedging these trading securities, the gains or losses on these securities will generally be offset by the changes in fair value of the associated interest rate swaps.

The total effect of derivatives and hedging activities on non-interest income was positively impacted in the 2019 periods due to the sale of certain swaptions as rates fell during the third quarter. We may sell swaptions as interest rates change in order to offset actual and anticipated risks associated with holding fixed-rate mortgage assets.

Non-Interest Expense

The following table presents non-interest expense.

(Dollars in millions)	Three Months Ended September 30, 2019	Three Months Ended September 30, 2018	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
Non-interest expense				
Compensation and benefits	$ 11	$ 10	$ 35	$ 34
Other operating expense	6	5	17	15
Finance Agency	2	2	5	5
Office of Finance	1	1	4	4
Other	2	1	7	6
Total non-interest expense	$ 22	$ 19	$ 68	$ 64
Average total assets	$ 95,422	$ 100,372	$ 99,442	$ 105,982
Average regulatory capital	4,678	5,331	5,040	5,446
Total non-interest expense to average total assets [(1)]	0.09%	0.08%	0.09%	0.08%
Total non-interest expense to average regulatory capital [(1)]	1.85	1.44	1.79	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.

Total non-interest expense remained relatively stable for the three and nine months ended September 30, 2019 compared to the same periods in 2018.

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, 2019			
Net interest income	$ 65	$ 22	$ 87
Net income	$ 34	$ 29	$ 63
Average assets	$ 82,494	$ 12,928	$ 95,422
Assumed average capital allocation	$ 4,011	$ 628	$ 4,639
Return on average assets (1)	0.16%	0.88%	0.26%
Return on average equity (1)	3.36%	18.16%	5.36%
Three Months Ended September 30, 2018			
Net interest income	$ 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%

(Dollars in millions)	Traditional Member Finance	MPP	Total
Nine Months Ended September 30, 2019			
Net interest income	$ 226	$ 81	$ 307
Net income	$ 130	$ 70	$ 200
Average assets	$ 86,200	$ 13,242	$ 99,442
Assumed average capital allocation	$ 4,337	$ 666	$ 5,003
Return on average assets (1)	0.20%	0.71%	0.27%
Return on average equity (1)	4.01%	14.05%	5.35%
Nine Months Ended September 30, 2018			
Net interest income	$ 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%

(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

Net interest income decreased in the three- and nine-months comparison periods primarily due to lower spreads earned on certain Advances and investments and lower average Advance balances. The decrease in net income in the nine-months comparison was partially offset by higher earnings from funding assets with interest-free capital.

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 2019, the MPP averaged 13 percent of total average assets while accounting for 35 percent of earnings. Net income increased in the three- and nine-months comparison periods primarily due to net gains on derivatives and hedging activities and secondarily due to the growth in average MPP balances. However, net interest income was lower in the three-months comparison period due to higher net amortization as a result of accelerated prepayments and lower spreads earned on MPP assets.

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
Average Results							
2019 Year-to-Date							
Market Value of Equity	$ 4,607	$ 4,654	$ 4,771	$ 4,845	$ 4,790	$ 4,709	$ 4,659
% Change from Flat Case	(4.9)%	(3.9)%	(1.5)%	—	(1.1)%	(2.8)%	(3.8)%
2018 Full Year							
Market Value of Equity	$ 4,936	$ 5,154	$ 5,306	$ 5,264	$ 5,176	$ 5,105	$ 5,045
% Change from Flat Case	(6.2)%	(2.1)%	0.8 %	—	(1.7)%	(3.0)%	(4.2)%
Month-End Results							
September 30, 2019							
Market Value of Equity	$ 4,499	$ 4,499	$ 4,421	$ 4,495	$ 4,477	$ 4,379	$ 4,299
% Change from Flat Case	0.1 %	0.1 %	(1.7)%	—	(0.4)%	(2.6)%	(4.4)%
December 31, 2018							
Market Value of Equity	$ 4,736	$ 4,911	$ 5,130	$ 5,149	$ 5,043	$ 4,951	$ 4,906
% Change from Flat Case	(8.0)%	(4.6)%	(0.4)%	—	(2.1)%	(3.8)%	(4.7)%

Duration of Equity

(In years)	Down 300	Down 200	Down 100	Flat Rates	Up 100	Up 200	Up 300
Average Results							
2019 Year-to-Date	(1.2)	(2.6)	(3.8)	(0.7)	1.6	1.1	0.9
2018 Full Year	(4.5)	(4.7)	(0.9)	1.7	1.4	1.2	1.1
Month-End Results							
September 30, 2019	—	0.1	(4.1)	(2.5)	1.5	1.8	1.4
December 31, 2018	(3.8)	(5.6)	(2.5)	1.2	2.0	1.0	0.6

The overall market risk exposure to changing interest rates was within policy limits during the periods presented. At September 30, 2019, exposure to falling interest rates in the down 200 basis points and 300 basis points scenarios is muted as some rates become floored at near zero rate levels. The duration of equity provides 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 over the long term unless interest rates change by large amounts in a short period of time.

Further declines in long-term interest rates could substantially decrease income in the near term (one to two years) before reverting over time to average levels. This temporary reduction in income would be driven from the accelerated recognition of mortgage asset premiums as the incentive for borrowers to refinance results in faster than anticipated repayments of those mortgage assets. 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. The average mortgage assets portfolio had an assumed capital allocation of $1.3 billion in the first nine months of 2019 based on the entire balance sheet's average regulatory capital-to-assets ratio. Average results shown in the table below 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
Average Results							
2019 Year-to-Date	(33.7)%	(27.8)%	(10.5)%	—	(2.1)%	(7.1)%	(9.6)%
2018 Full Year	(35.9)%	(15.2)%	0.3 %	—	(4.3)%	(7.4)%	(10.0)%
Month-End Results							
September 30, 2019	(12.2)%	(12.2)%	(10.3)%	—	0.8 %	(6.0)%	(11.3)%
December 31, 2018	(41.2)%	(24.7)%	(3.6)%	—	(7.0)%	(13.2)%	(15.9)%

The average risk exposure of the mortgage assets portfolio in the first nine months of 2019 remained aligned with our preference to keep our exposure to market risk at a low to moderate level. The variances between periods shown reflect normal changes in the balance sheet composition and the impact of lower long-term interest rates observed in the first nine months of 2019. These lower long-term interest rates result in muted exposure to falling rate shocks as they become floored when they reach near zero rate levels. 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, 2019, our capital management policy set forth a range of $175 million to $375 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, 2019	December 31, 2018
Unrestricted retained earnings	$ 624	$ 632
Restricted retained earnings [(1)]	431	391
Total retained earnings	$ 1,055	$ 1,023

(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, and mandatorily redeemable capital stock. 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, 2019	December 31, 2018
Market Value of Equity to Par Value of Regulatory Capital Stock - Base Case (Flat Rates) Scenario	124%	119%
Market Value of Equity to Par Value of Regulatory Capital Stock - Down Shock (1)	122	118
Market Value of Equity to Par Value of Regulatory Capital Stock - Up Shock (2)	121	114

(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 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 2019, the market capitalization ratios in the scenarios presented continued to be above our policy requirements. The base case ratio at September 30, 2019 was well above 100 percent because retained earnings were 29 percent of regulatory capital stock and we maintained risk exposures at moderate levels.

The following table presents the market value of equity to the book value of total capital and mandatorily redeemable capital stock.

	September 30, 2019	December 31, 2018
Market Value of Equity to Book Value of Capital - Base Case (Flat Rates) Scenario (1)	96%	96%
Market Value of Equity to Book Value of Capital - Down Shock (1)(2)	95	96
Market Value of Equity to Book Value of Capital - Up Shock (1)(3)	94	93

(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 100 percent indicates that we have realized or could realize risks (especially market risk), such that the market value of total capital owned by stockholders is below the book value of total capital. The base-case ratio of 96 percent at September 30, 2019 indicates that the market value of total capital is $171 million below the book value of total capital. In a scenario in which interest rates increase 200 basis points, the market value of total capital would be $287 million below the book 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. 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 no residual credit risk related to member borrowings.

Collateral: We require each member to provide 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 in the event it must be liquidated. Over-collateralization by one member is not applied to another member. At September 30, 2019, our policy of over-collateralization resulted in total collateral pledged of $359.2 billion to serve members' total borrowing capacity of $286.5 billion of which $62.3 billion was used to support outstanding Advances and Letters of Credit. Borrowers often pledge collateral in excess of their collateral requirement to demonstrate available liquidity and to have the ability to borrow additional amounts in the future. The collateral composition remained relatively stable compared to the end of 2018.

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 quality of the loan collateral as reflected in the manner in which it was underwritten, and the marketability of the pledged assets. Effective July 2019, we updated LVRs resulting in relatively minor changes in borrowing capacity for most members.

Internal Credit Ratings: We perform credit underwriting of our members 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 have been two member failures in 2019 through the date of this filing. We have no outstanding exposure to these institutions and the failure of these members did not have an impact on our financial condition or results of operations.

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 2018 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 are consistent with the portfolio's excellent credit quality. At September 30, 2019, 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, 2018.

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.

	Conventional Loan Delinquencies	
(Dollars in millions)	September 30, 2019	December 31, 2018
Early stage delinquencies - unpaid principal balance (1)	$ 35	$ 36
Serious delinquencies - unpaid principal balance (2)	$ 11	$ 13
Early stage delinquency rate (3)	0.3%	0.4%
Serious delinquency rate (4)	0.1%	0.1%
National average serious delinquency rate (5)	1.5%	1.6%

(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, 2019 rate is based on June 30, 2019 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 $223 million and $213 million at September 30, 2019 and December 31, 2018, 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, 2019	December 31, 2018
Estimated incurred credit losses, before credit enhancements	$ 3	$ 4
Estimated amounts deemed recoverable by:		
Primary mortgage insurance	—	(1)
Supplemental mortgage insurance	(1)	(1)
Lender Risk Account	(1)	(1)
Estimated incurred credit losses, after credit enhancements	$ 1	$ 1

The minimal amount of incurred losses provides further evidence of 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, 2019 or December 31, 2018.

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 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. Our internal ratings of these investments may differ from those obtained from Standard & Poor's, Moody's, and/or Fitch Advisory Services. The historical or current ratings displayed in this table should not be taken as an indication of future ratings.

(In millions)	September 30, 2019		
	Long-Term Rating		
	AA	A	Total
Unsecured Liquidity Investments			
Interest-bearing deposits	$ —	$ 599	$ 599
Federal funds sold	7,242	6,840	14,082
Certificates of deposit	—	300	300
Total unsecured liquidity investments	7,242	7,739	14,981
Guaranteed/Secured Liquidity Investments			
Securities purchased under agreements to resell	1,840	—	1,840
U.S. Treasury obligations	9,421	—	9,421
GSE obligations	2,164	—	2,164
Total guaranteed/secured liquidity investments	13,425	—	13,425
Total liquidity investments	$ 20,667	$ 7,739	$ 28,406

	December 31, 2018		
	Long-Term Rating		
	AA	A	Total
Unsecured Liquidity Investments			
Federal funds sold	$ 5,640	$ 5,153	$ 10,793
Certificates of deposit	800	1,550	2,350
Total unsecured liquidity investments	6,440	6,703	13,143
Guaranteed/Secured Liquidity Investments			
Securities purchased under agreements to resell	4,402	—	4,402
U.S. Treasury obligations	36	—	36
GSE obligations	277	—	277
Total guaranteed/secured liquidity investments	4,715	—	4,715
Total liquidity investments	$ 11,155	$ 6,703	$ 17,858

During the first nine months of 2019 we increased our balance of liquidity investments primarily through the investment of U.S. Treasury obligations to more effectively meet the expanded regulatory liquidity requirements. In addition, a portion of our total liquidity investments are with counterparties for which the investments are secured with collateral (secured resale agreements). We believe these investments present no credit risk exposure to us.

The following table presents the lowest long-term credit ratings provided by Standard & Poor's, Moody's, and/or Fitch Advisory Services of our unsecured investment credit exposure by the domicile of the counterparty or the domicile of the counterparty's immediate parent for U.S. branches and agency offices of foreign commercial banks. Our internal ratings of these investments may differ from those obtained from Standard & Poor's, Moody's, and/or Fitch Advisory Services. The historical or current ratings displayed in this table should not be taken as an indication of future ratings.

(In millions)	September 30, 2019		
	Counterparty Rating		
Domicile of Counterparty	AA	A	Total
Domestic	$ 1,542	$ 3,674	$ 5,216
U.S. branches and agency offices of foreign commercial banks:			
Sweden	1,830	830	2,660
Canada	1,290	875	2,165
Australia	1,290	—	1,290
Norway	1,290	—	1,290
Netherlands	—	830	830
Switzerland	—	830	830
Germany	—	500	500
France	—	200	200
Total U.S. branches and agency offices of foreign commercial banks	5,700	4,065	9,765
Total unsecured investment credit exposure	$ 7,242	$ 7,739	$ 14,981

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 immediate parent for U.S. branches and agency offices of foreign commercial banks.

(In millions)	September 30, 2019		
Domicile of Counterparty	Overnight	Due 2 days through 30 days	Total
Domestic	$ 5,216	$ —	$ 5,216
U.S. branches and agency offices of foreign commercial banks:			
Sweden	2,660	—	2,660
Canada	2,165	—	2,165
Australia	1,290	—	1,290
Norway	1,290	—	1,290
Netherlands	830	—	830
Switzerland	830	—	830
Germany	200	300	500
France	200	—	200
Total U.S. branches and agency offices of foreign commercial banks	9,465	300	9,765
Total unsecured investment credit exposure	$ 14,681	$ 300	$ 14,981

At September 30, 2019, all of the $15.0 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.

MBS:

GSE MBS
At September 30, 2019, $12.2 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 $1.8 billion at September 30, 2019. 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 lowest long-term counterparty credit ratings provided by Standard & Poor's, Moody's, and/or Fitch Advisory Services for derivative positions to which we had credit risk exposure at September 30, 2019. The historical or current ratings displayed in this table should not be taken as an indication of future ratings.

(In millions)

	Total Notional	Net Derivatives Fair Value Before Collateral	Cash Collateral Pledged to (from) Counterparties	Net Credit Exposure to Counterparties
Nonmember counterparties:				
Asset positions with credit exposure:				
Uncleared derivatives:				
A-rated	$ 37	$ —	$ —	$ —
Total uncleared derivatives	37	—	—	—
Cleared derivatives (1)	18,351	5	259	264
Liability positions with credit exposure:				
Cleared derivatives (1)	19,507	(1)	15	14
Total derivative positions with credit exposure to nonmember counterparties	37,895	4	274	278
Member institutions (2)	448	2	—	2
Total	$ 38,343	$ 6	$ 274	$ 280

(1) Represents derivative transactions cleared with LCH Ltd. and CME Clearing, the FHLB's clearinghouses. LCH Ltd. is rated AA- by Standard & Poor's, and CME Clearing is not rated, but its parent company, 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, 2019, the gross and net exposure of uncleared derivatives with residual credit risk exposure was minimal. 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, 2019, we had $491 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 perception of the 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 2019. 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 2019. 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 that 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 2019, our portion of the System's debt issuances totaled $605.3 billion for Discount Notes and $24.0 billion for Bonds. Access to short-term debt markets has been reliable because investors, driven by liquidity preferences and risk aversion, have sought the System's short-term debt, which has resulted in strong demand for 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 August 2018, the Finance Agency issued *Advisory Bulletin 2018-07 Federal Home Loan Bank Liquidity Guidance* (Liquidity AB). The Liquidity AB increases the expectations with respect to the maintenance of sufficient liquidity for a specified number of days. The Liquidity AB rescinds the 2009 liquidity guidance previously issued by the Finance Agency. Under the new Liquidity AB, the calculation of liquidity is intended to provide additional assurance that we can continue to provide Advances and Letters of Credit to members over an extended period without access to the capital markets. Under the new guidance, all Advance maturities are assumed to renew, unless the Advances relate to former members who are ineligible to borrow new Advances.

As part of the base case liquidity expectations, the Liquidity AB requires the FHLBanks to maintain sufficient liquidity for an increased period of between 10 to 30 calendar days. Contemporaneously with the issuance of the Liquidity AB, the Finance Agency issued a supervisory letter that identifies initial thresholds for measures of liquidity. As of September 30, 2019, we maintained a sufficient number of days of positive daily cash balances under the new guidance.

The Liquidity AB also provided guidance related to asset/liability maturity funding gap limits, which was implemented on December 31, 2018. Funding gap metrics measure the difference between assets and liabilities that are scheduled to mature during a specified period of time and are expressed as a percentage of total assets. 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. The Finance Agency's supervisory letter set forth initial funding gap percentage limits. As of September 30, 2019, we were operating within those limits.

We also meet operational and contingency liquidity requirements. We satisfy the operational liquidity requirement by both meeting a contingency liquidity requirement, discussed below, and because we are 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.

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)	September 30, 2019	December 31, 2018
Contingency Liquidity Requirement		
Total Contingency Liquidity Reserves [1]	$ 49,218	$ 34,808
Total Requirement [2]	(25,451)	(18,745)
Excess Contingency Liquidity Available	$ 23,767	$ 16,063

(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)	September 30, 2019	December 31, 2018
Deposit Reserve Requirement		
Total Eligible Deposit Reserves	$ 68,358	$ 66,643
Total Member Deposits	(840)	(664)
Excess Deposit Reserves	$ 67,518	$ 65,979

Contractual Obligations

The following table summarizes our contractual obligations at September 30, 2019. 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)	< 1 year	1 < 3 years	3 < 5 years	> 5 years	Total
Contractual Obligations					
Long-term debt (Bonds) - par [1]	$ 22,924	$ 12,713	$ 4,776	$ 4,110	$ 44,523
Operating leases (include premises and equipment)	1	3	2	2	8
Mandatorily redeemable capital stock	15	2	8	1	26
Commitments to fund mortgage loans	738	—	—	—	738
Pension and other postretirement benefit obligations	2	5	5	29	41
Total Contractual Obligations	$ 23,680	$ 12,723	$ 4,791	$ 4,142	$ 45,336

(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, 2019. For more information, see Note 19 of the Notes to Unaudited Financial Statements.

(In millions)	< 1 year	1 < 3 years	3 < 5 years	> 5 years	Total
Off-balance sheet items [(1)]					
Standby Letters of Credit	$ 15,039	$ 835	$ 215	$ 1	$ 16,090
Standby bond purchase agreements	21	55	—	—	76
Consolidated Obligations traded, not yet settled	20	—	—	—	20
Total off-balance sheet items	$ 15,080	$ 890	$ 215	$ 1	$ 16,186

(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 2019.

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, 2019, 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, 2019, 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, 2019, 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, 2019 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 2018 Annual Report on Form 10-K. There have been no material changes from the risk factors in our 2018 Annual Report on Form 10-K.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

From time to time the FHLB provides Letters of Credit in the ordinary course of business to support members' obligations issued in support of unaffiliated, third-party offerings of notes, bonds or other securities. The FHLB provided $2.6 million of such credit support during the three months ended September 30, 2019. To the extent that these Letters of Credit are securities for purposes of the Securities Act of 1933, their issuance is exempt from registration pursuant to Section 3(a)(2) thereof.

Item 6. Exhibits.

(a) *Exhibits.*

See Index of Exhibits

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, as of the 7th day of November 2019.

FEDERAL HOME LOAN BANK OF CINCINNATI
(Registrant)

By: /s/ Andrew S. Howell
Andrew S. Howell
President and Chief Executive Officer
(principal executive officer)

By: /s/ Stephen J. Sponaugle
Stephen J. Sponaugle
Executive Vice President - Chief Financial Officer
(principal financial officer)

INDEX OF EXHIBITS

Exhibit Number [1]	Description of exhibit	Document filed or furnished, as indicated below
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	The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document
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
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)	Filed Herewith

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

Exhibit 31.1

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 7, 2019

/s/ Andrew S. Howell

Andrew S. Howell
President and Chief Executive Officer

Exhibit 31.2

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 7, 2019

/s/ Stephen J. Sponaugle

Stephen J. Sponaugle
Executive Vice President-Chief Financial Officer

Exhibit 32

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, 2019 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 7, 2019

/s/ Stephen J. Sponaugle

Stephen J. Sponaugle
Executive Vice President-Chief Financial Officer
November 7, 2019