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 March 31, 2020

OR

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

Commission File Number 000-51405

FEDERAL HOME LOAN BANK OF DALLAS

(Exact name of registrant as specified in its charter)

Federally chartered corporation
(State or other jurisdiction of incorporation or organization)

71-6013989
(I.R.S. Employer Identification Number)

8500 Freeport Parkway South, Suite 600
Irving, TX
(Address of principal executive offices)

75063-2547
(Zip code)

(214) 441-8500
(Registrant's telephone number, including area code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol(s)	Name of each exchange on which registered

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 (17 C.F.R. §232.405) 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 ☑ (Do not check if a smaller reporting company)	Smaller reporting company ☐	Emerging growth company ☐

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☑

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of the latest practicable date:
At May 6, 2020, the registrant had outstanding 29,032,853 shares of its Class B Capital Stock, $100 par value per share.

FEDERAL HOME LOAN BANK OF DALLAS

TABLE OF CONTENTS

	Page
PART I. FINANCIAL INFORMATION	
Item 1. Financial Statements	**1**
Statements of Condition as of March 31, 2020 and December 31, 2019	1
Statements of Income for the Three Months Ended March 31, 2020 and 2019	2
Statements of Comprehensive Income (Loss) for the Three Months Ended March 31, 2020 and 2019	3
Statements of Capital for the Three Months Ended March 31, 2020 and 2019	4
Statements of Cash Flows for the Three Months Ended March 31, 2020 and 2019	5
Notes to Interim Unaudited Financial Statements	7
Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations	**38**
Forward-Looking Information	38
Overview	38
Selected Financial Data	42
Legislative and Regulatory Developments	43
Financial Condition	44
Results of Operations	57
Critical Accounting Policies and Estimates	63
Liquidity and Capital Resources	63
Recently Issued Accounting Guidance	65
Item 3. Quantitative and Qualitative Disclosures About Market Risk	**66**
Item 4. Controls and Procedures	**68**
PART II. OTHER INFORMATION	
Item 6. Exhibits	**69**
Signatures	**69**
EX-31.1	
EX-31.2	
EX-32.1	
EX-101 INSTANCE DOCUMENT	
EX-101 SCHEMA DOCUMENT	
EX-101 CALCULATION LINKBASE DOCUMENT	
EX-101 LABELS LINKBASE DOCUMENT	
EX-101 PRESENTATION LINKBASE DOCUMENT	
EX-101 DEFINITION LINKBASE DOCUMENT	

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

FEDERAL HOME LOAN BANK OF DALLAS
STATEMENTS OF CONDITION
(Unaudited; in thousands, except share data)

	March 31, 2020	December 31, 2019
ASSETS		
Cash and due from banks	$ 1,217,250	$ 20,551
Interest-bearing deposits (Notes 8 and 9)	1,769,990	1,670,249
Securities purchased under agreements to resell (Notes 8, 9 and 12)	—	4,310,000
Federal funds sold (Notes 8 and 9)	6,035,000	4,505,000
Trading securities (Notes 3 and 8)	4,570,279	5,460,136
Available-for-sale securities [(a)] (Notes 4, 8, 9, 12 and 17) ($888,729 and $842,256 pledged at March 31, 2020 and December 31, 2019, respectively, which could be rehypothecated)	17,509,595	16,766,500
Held-to-maturity securities [(b)] (Notes 5, 8 and 9)	1,150,122	1,206,170
Advances (Notes 6, 8 and 9)	46,922,518	37,117,455
Mortgage loans held for portfolio, net of allowance for credit losses of $4,339 and $1,149 at March 31, 2020 and December 31, 2019, respectively (Notes 7, 8 and 9)	4,282,180	4,075,464
Accrued interest receivable (Note 8)	154,497	154,218
Premises and equipment, net	14,997	15,103
Derivative assets (Notes 12 and 13)	145,252	41,271
Other assets (including $11,735 and $14,222 of securities held at fair value at March 31, 2020 and December 31, 2019, respectively)	35,773	39,488
TOTAL ASSETS	$ 83,807,453	$ 75,381,605
LIABILITIES AND CAPITAL		
Deposits		
Interest-bearing	$ 1,729,044	$ 1,286,199
Non-interest bearing	20	20
Total deposits	1,729,064	1,286,219
Consolidated obligations (Note 10)		
Discount notes	43,953,217	34,327,886
Bonds	34,186,393	35,745,827
Total consolidated obligations	78,139,610	70,073,713
Mandatorily redeemable capital stock	6,779	7,140
Accrued interest payable	122,425	115,350
Affordable Housing Program (Note 11)	57,139	57,247
Derivative liabilities (Notes 12 and 13)	2,070	3,855
Other liabilities	34,111	40,113
Total liabilities	80,091,198	71,583,637
Commitments and contingencies (Notes 9 and 17)		
CAPITAL (Note 14)		
Capital stock		
Capital stock — Class B-1 putable ($100 par value) issued and outstanding shares: 8,285,392 and 9,794,335 shares at March 31, 2020 and December 31, 2019, respectively	828,539	979,434
Capital stock — Class B-2 putable ($100 par value) issued and outstanding shares: 18,716,373 and 14,868,085 shares at March 31, 2020 and December 31, 2019, respectively	1,871,637	1,486,808
Total Class B Capital Stock	2,700,176	2,466,242
Retained earnings		
Unrestricted	1,062,579	1,038,533
Restricted	204,460	194,144
Total retained earnings	1,267,039	1,232,677
Accumulated other comprehensive income (loss) (Note 20)	(250,960)	99,049
Total capital	3,716,255	3,797,968
TOTAL LIABILITIES AND CAPITAL	$ 83,807,453	$ 75,381,605

(a) Amortized cost: $17,620,510 and $16,621,667 at March 31, 2020 and December 31, 2019, respectively.

(b) Fair values: $1,147,002 and $1,215,580 at March 31, 2020 and December 31, 2019, respectively.

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

FEDERAL HOME LOAN BANK OF DALLAS
STATEMENTS OF INCOME
(Unaudited, in thousands)

	For the Three Months Ended March 31,	
	2020	2019
INTEREST INCOME		
Advances	$ 160,913	$ 237,864
Prepayment fees on advances, net	1,972	124
Interest-bearing deposits	6,816	11,121
Securities purchased under agreements to resell	7,321	25,297
Federal funds sold	7,067	18,504
Trading securities	29,904	18,025
Available-for-sale securities	64,965	119,008
Held-to-maturity securities	6,473	11,053
Mortgage loans held for portfolio	33,952	23,094
Total interest income	319,383	464,090
INTEREST EXPENSE		
Consolidated obligations		
Bonds	153,944	190,768
Discount notes	114,782	196,251
Deposits	4,036	4,922
Mandatorily redeemable capital stock	30	52
Other borrowings	—	1
Total interest expense	272,792	391,994
NET INTEREST INCOME	46,591	72,096
Provision for mortgage loan losses	999	118
NET INTEREST INCOME AFTER PROVISION FOR MORTGAGE LOAN LOSSES	45,592	71,978
OTHER INCOME (LOSS)		
Net gains on trading securities	33,099	3,227
Net gains (losses) on derivatives and hedging activities	(717)	8,766
Net gains (losses) on other assets carried at fair value	(1,633)	913
Realized gains on sales of available-for-sale securities	—	440
Letter of credit fees	3,592	2,780
Other, net	1,049	851
Total other income	35,390	16,977
OTHER EXPENSE		
Compensation and benefits	11,560	13,566
Other operating expenses	9,201	8,034
Finance Agency	1,250	1,183
Office of Finance	1,163	948
Discretionary grants and donations	146	38
Derivative clearing fees	348	296
Total other expense	23,668	24,065
INCOME BEFORE ASSESSMENTS	57,314	64,890
Affordable Housing Program assessment	5,734	6,494
NET INCOME	$ 51,580	$ 58,396

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

FEDERAL HOME LOAN BANK OF DALLAS
STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited, in thousands)

	For the Three Months Ended March 31,	
	2020	2019
NET INCOME	$ 51,580	$ 58,396
OTHER COMPREHENSIVE INCOME (LOSS)		
Net unrealized gains (losses) on available-for-sale securities, net of unrealized gains and losses relating to hedged interest rate risk included in net income	(255,748)	52,263
Reclassification adjustment for realized gains on sales of available-for-sale securities included in net income	—	(440)
Unrealized losses on cash flow hedges	(95,733)	(20,390)
Reclassification adjustment for losses (gains) on cash flow hedges included in net income	1,016	(807)
Accretion of non-credit portion of other-than-temporary impairment losses to the carrying value of held-to-maturity securities	471	593
Postretirement benefit plan		
Amortization of prior service cost included in net periodic benefit credit	5	5
Amortization of net actuarial gain included in net periodic benefit credit	(20)	(23)
Total other comprehensive income (loss)	(350,009)	31,201
TOTAL COMPREHENSIVE INCOME (LOSS)	$ (298,429)	$ 89,597

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

FEDERAL HOME LOAN BANK OF DALLAS
STATEMENTS OF CAPITAL
FOR THE THREE MONTHS ENDED MARCH 31, 2020 AND 2019
(Unaudited, in thousands)

	Capital Stock Class B-1 - Putable (Membership/Excess)		Capital Stock Class B-2 - Putable (Activity)		Retained Earnings			Accumulated Other Comprehensive Income (Loss)	Total Capital
	Shares	Par Value	Shares	Par Value	Unrestricted	Restricted	Total		
BALANCE, JANUARY 1, 2020	9,794	$ 979,434	14,868	$ 1,486,808	$ 1,038,533	$ 194,144	$ 1,232,677	$ 99,049	$ 3,797,968
Net transfers of shares between Class B-1 and Class B-2 Stock	1,585	158,499	(1,585)	(158,499)	—	—	—	—	—
Proceeds from sale of capital stock	51	5,125	5,433	543,328	—	—	—	—	548,453
Repurchase/redemption of capital stock	(3,295)	(329,486)	—	—	—	—	—	—	(329,486)
Adjustment to initially apply new credit loss accounting guidance (Note 2)	—	—	—	—	(2,191)	—	(2,191)	—	(2,191)
Comprehensive income (loss)									
Net income	—	—	—	—	41,264	10,316	51,580	—	51,580
Other comprehensive income (loss)	—	—	—	—	—	—	—	(350,009)	(350,009)
Dividends on capital stock [(a)]									
Cash	—	—	—	—	(60)	—	(60)	—	(60)
Stock	150	14,967	—	—	(14,967)	—	(14,967)	—	—
BALANCE, MARCH 31, 2020	8,285	$ 828,539	18,716	$ 1,871,637	$ 1,062,579	$ 204,460	$ 1,267,039	$ (250,960)	$ 3,716,255
BALANCE, JANUARY 1, 2019	9,169	$ 916,921	16,380	$ 1,637,967	$ 932,675	$ 148,692	$ 1,081,367	$ 128,001	$ 3,764,256
Net transfers of shares between Class B-1 and Class B-2 Stock	5,329	532,841	(5,329)	(532,841)	—	—	—	—	—
Proceeds from sale of capital stock	3	342	3,383	338,268	—	—	—	—	338,610
Repurchase/redemption of capital stock	(4,786)	(478,639)	—	—	—	—	—	—	(478,639)
Shares reclassified to mandatorily redeemable capital stock	(23)	(2,326)	—	—	—	—	—	—	(2,326)
Adjustment to initially apply new lease accounting guidance	—	—	—	—	(25)	—	(25)	—	(25)
Comprehensive income									
Net income	—	—	—	—	46,716	11,680	58,396	—	58,396
Other comprehensive income	—	—	—	—	—	—	—	31,201	31,201
Dividends on capital stock [(b)]									
Cash	—	—	—	—	(66)	—	(66)	—	(66)
Mandatorily redeemable capital stock	—	—	—	—	(13)	—	(13)	—	(13)
Stock	190	19,044	—	—	(19,044)	—	(19,044)	—	—
BALANCE, MARCH 31, 2019	9,882	$ 988,183	14,434	$ 1,443,394	$ 960,243	$ 160,372	$ 1,120,615	$ 159,202	$ 3,711,394

[(a)] Dividends were paid at annualized rates of 1.79 percent and 2.79 percent on Class B-1 Stock and Class B-2 Stock, respectively, in the first quarter of 2020.

[(b)] Dividends were paid at annualized rates of 2.35 percent and 3.35 percent on Class B-1 Stock and Class B-2 Stock, respectively, in the first quarter of 2019.

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

FEDERAL HOME LOAN BANK OF DALLAS
STATEMENTS OF CASH FLOWS
(Unaudited, in thousands)

	For the Three Months Ended March 31,	
	2020	2019
OPERATING ACTIVITIES		
Net income	$ 51,580	$ 58,396
Adjustments to reconcile net income to net cash used in operating activities		
Depreciation and amortization		
Net premiums and discounts on advances, consolidated obligations, investments and mortgage loans	2,367	26,926
Concessions on consolidated obligations	2,902	1,669
Premises, equipment and computer software costs	938	1,058
Non-cash interest on mandatorily redeemable capital stock	39	50
Provision for mortgage loan losses	999	118
Gains on sales of available-for-sale securities	—	(440)
Net losses (gains) on other assets carried at fair value	1,633	(913)
Net gains on trading securities	(33,099)	(3,227)
Net gain due to changes in net fair value adjustment on derivative and hedging activities	(1,005,554)	(289,965)
Increase in accrued interest receivable	(386)	(9,236)
Decrease in other assets	3,697	3,757
Increase (decrease) in Affordable Housing Program (AHP) liability	(108)	1,378
Increase in accrued interest payable	7,084	11,160
Decrease in other liabilities	(6,732)	(5,924)
Total adjustments	(1,026,220)	(263,589)
Net cash used in operating activities	(974,640)	(205,193)
INVESTING ACTIVITIES		
Net decrease (increase) in interest-bearing deposits, including swap collateral pledged	(597,893)	1,281,703
Net decrease in securities purchased under agreements to resell	4,310,000	700,000
Net increase in federal funds sold	(1,530,000)	(394,000)
Purchases of trading securities	(4,259,634)	(10,804,787)
Proceeds from sales of trading securities	2,949,620	8,841,671
Proceeds from maturities of trading securities	2,242,375	200,000
Purchases of available-for-sale securities	—	(507,626)
Proceeds from maturities of available-for-sale securities	74,287	180,799
Proceeds from sales of available-for-sale securities	—	411,145
Proceeds from maturities of held-to-maturity securities	56,888	46,317
Principal collected on advances	115,255,395	149,506,560
Advances made	(124,509,159)	(144,760,729)
Principal collected on mortgage loans held for portfolio	211,023	35,395
Purchases of mortgage loans held for portfolio	(426,891)	(443,923)
Purchases of premises, equipment and computer software	(1,434)	(663)
Net cash provided by (used in) investing activities	(6,225,423)	4,291,862

	For the Three Months Ended March 31,	
	2020	2019
FINANCING ACTIVITIES		
Net increase (decrease) in deposit liabilities, including swap collateral held	464,976	(171,768)
Net payments on derivative contracts with financing elements	(213,295)	(73,692)
Net proceeds from issuance of consolidated obligations		
Discount notes	53,660,213	65,649,636
Bonds	9,461,366	4,442,865
Debt issuance costs	(2,436)	(1,935)
Payments for maturing and retiring consolidated obligations		
Discount notes	(44,033,035)	(64,037,381)
Bonds	(11,159,535)	(9,740,345)
Proceeds from issuance of capital stock	548,453	338,610
Payments for redemption of mandatorily redeemable capital stock	(399)	(1,614)
Payments for repurchase/redemption of capital stock	(329,486)	(478,639)
Cash dividends paid	(60)	(66)
Net cash provided by (used in) financing activities	8,396,762	(4,074,329)
Net increase in cash and cash equivalents	1,196,699	12,340
Cash and cash equivalents at beginning of the period	20,551	35,157
Cash and cash equivalents at end of the period	$ 1,217,250	$ 47,497
Supplemental Disclosures:		
Interest paid	$ 288,933	$ 353,761
AHP payments, net	$ 5,842	$ 5,116
Stock dividends issued	$ 14,967	$ 19,044
Dividends paid through issuance of mandatorily redeemable capital stock	$ —	$ 13
Net capital stock reclassified to mandatorily redeemable capital stock	$ —	$ 2,326
Right-of-use assets acquired by lease	$ 714	$ 2,539

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

FEDERAL HOME LOAN BANK OF DALLAS

NOTES TO INTERIM UNAUDITED FINANCIAL STATEMENTS

Note 1—Basis of Presentation

The accompanying interim financial statements of the Federal Home Loan Bank of Dallas (the "Bank") are unaudited and have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") for interim financial information and with the instructions provided by Article 10, Rule 10-01 of Regulation S-X promulgated by the Securities and Exchange Commission ("SEC"). Accordingly, they do not include all of the information and disclosures required by generally accepted accounting principles for complete financial statements. The financial statements contain all adjustments that are, in the opinion of management, necessary for a fair statement of the Bank's financial position, results of operations and cash flows for the interim periods presented. All such adjustments were of a normal recurring nature. The results of operations for the periods presented are not necessarily indicative of the results to be expected for the full fiscal year or any other interim period.

The Bank's significant accounting policies and certain other disclosures are set forth in the notes to the audited financial statements for the year ended December 31, 2019. The interim financial statements presented herein should be read in conjunction with the Bank's audited financial statements and notes thereto, which are included in the Bank's Annual Report on Form 10-K for the year ended December 31, 2019 filed with the SEC on March 25, 2020 (the "2019 10-K"). The notes to the interim financial statements update and/or highlight significant changes to the notes included in the 2019 10-K.

The Bank is one of 11 district Federal Home Loan Banks, each individually a "FHLBank" and collectively the "FHLBanks," and, together with the Office of Finance, a joint office of the FHLBanks, the "FHLBank System." The Office of Finance manages the sale and servicing of the FHLBanks' consolidated obligations. The Federal Housing Finance Agency ("Finance Agency"), an independent agency in the executive branch of the U.S. government, supervises and regulates the housing government-sponsored enterprises ("GSEs"), including the FHLBanks and the Office of Finance.

Use of Estimates and Assumptions. The preparation of financial statements in conformity with U.S. GAAP requires management to make assumptions and estimates. These assumptions and estimates may affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of income and expenses. Significant estimates include the valuations of the Bank's investment securities (including, but not limited to, its investments in mortgage-backed securities ("MBS")), as well as its derivative instruments and any associated hedged items. Actual results could differ from these estimates.

Note 2—Recently Adopted Accounting Guidance

Credit Losses on Financial Instruments. On June 16, 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-13, *"Measurement of Credit Losses on Financial Instruments"* ("ASU 2016-13"), which amends the guidance for the accounting for credit losses on financial instruments by replacing the incurred loss methodology with an expected credit loss methodology. Among other things, ASU 2016-13 requires:

- entities to present financial assets, or groups of financial assets, measured at amortized cost at the net amount expected to be collected, which is computed by deducting an allowance for credit losses from the amortized cost basis of the financial asset(s);
- the measurement of expected credit losses to be based upon relevant information about past events, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the reported amount;
- the statement of income to reflect the measurement of credit losses for newly recognized financial assets, as well as the expected increases or decreases in expected credit losses that have taken place during the period;
- entities to determine the allowance for credit losses for purchased financial assets with a more-than-insignificant amount of credit deterioration since origination ("PCD assets") that are measured at amortized cost in a manner similar to other financial assets measured at amortized cost (the initial allowance for credit losses on PCD assets is added to the purchase price rather than being reported as a credit loss expense);
- credit losses relating to available-for-sale debt securities to be recorded through an allowance for credit losses, the amount of which is limited to the amount by which fair value is below amortized cost; and
- public business entities to further disaggregate the current disclosure of credit quality indicators in relation to the amortized cost of financing receivables by year of origination.

For public business entities that file with the SEC, the guidance in ASU 2016-13 is effective for fiscal years beginning after December 15, 2019 (January 1, 2020 for the Bank), and interim periods within those fiscal years. Early adoption was permitted for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The guidance is to be applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the beginning of the period in which the amendments are adopted. However, entities are required to use a prospective transition approach for debt securities for which an other-than-temporary impairment had been recognized before the date of adoption. The Bank adopted ASU 2016-13 effective January 1, 2020. In conjunction with the adoption of this guidance, the Bank recorded (on January 1, 2020) a cumulative effect adjustment to retained earnings of $2,191,000 and a corresponding increase in the allowance for credit losses on mortgage loans held for portfolio.

Fair Value Measurement Disclosures. On August 28, 2018, the FASB issued ASU 2018-13, *"Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement"* ("ASU 2018-13"), which modifies the disclosure requirements on fair value measurements in an effort to improve disclosure effectiveness. ASU 2018-13 removes or modifies certain existing disclosure requirements regarding fair value measurements, including a clarification that the measurement uncertainty disclosure associated with recurring Level 3 fair value measurements is intended to communicate information about the uncertainty in measurement as of the reporting date. In addition to the limited removals and modifications, the guidance requires public business entities to disclose: (i) the changes in unrealized gains and losses for the period included in other comprehensive income for recurring Level 3 fair value measurements held at the end of the reporting period and (ii) for recurring and nonrecurring fair value measurements categorized within Level 3 of the fair value hierarchy, the range and weighted average of significant unobservable inputs used to develop those fair value measurements (together, the "new disclosure requirements").

The amendments in ASU 2018-13 are effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019 (January 1, 2020 for the Bank). The new disclosure requirements and the narrative description of measurement uncertainty are to be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments are to be applied retrospectively to all periods presented upon their effective date. Early adoption is permitted. In addition, an entity is permitted to early adopt any removed or modified disclosures and delay adoption of the additional disclosures until their effective date. The adoption of ASU 2018-13 on January 1, 2020 did not have any impact on the Bank's results of operations or financial condition, nor did it require any additional disclosures for the three months ended March 31, 2020.

Implementation Costs Associated with Cloud Computing Arrangements. On August 29, 2018, the FASB issued ASU 2018-15, *"Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract"* ("ASU 2018-15"), which clarifies the accounting for implementation costs associated with a hosting arrangement that is a service contract. ASU 2018-15 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). ASU 2018-15 also addresses the term over which these capitalized implementation costs should be expensed. ASU 2018-15 does not affect the accounting for the service element of a hosting arrangement that is a service contract.

For public business entities, ASU 2018-15 is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019 (January 1, 2020 for the Bank). Early adoption is permitted, including adoption in any interim period. The guidance is to be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. The adoption of this guidance on January 1, 2020 did not have a material impact on the Bank's results of operations or financial condition.

Reference Rate Reform. On March 12, 2020, the FASB issued ASU 2020-04, *"Facilitation of the Effects of Reference Rate Reform on Financial Reporting"* ("ASU 2020-04"), which provides optional guidance for a limited period of time to ease the potential burden in accounting for (or recognizing the effects of) reference rate reform on financial reporting. ASU 2020-04 provides optional expedients and exceptions for applying U.S. GAAP to transactions affected by reference rate reform if certain criteria are met. These transactions include: (i) contract modifications, (ii) hedging relationships, and (iii) sales or transfers of debt securities classified as held-to-maturity.

ASU 2020-04 is effective from March 12, 2020 through December 31, 2022. An entity may elect to adopt the amendments for contract modifications as of any date from the beginning of an interim period that includes or is subsequent to March 12, 2020, or prospectively from a date within an interim period that includes or is subsequent to March 12, 2020, up to the date that the financial statements are available to be issued. An entity may elect to apply the amendments in ASU 2020-04 to eligible hedging relationships existing as of the beginning of the interim period that includes March 12, 2020 and to new eligible hedging relationships entered into after the beginning of the interim period that includes March 12, 2020 through December 31, 2022. The one-time election to sell, transfer, or both sell and transfer debt securities classified as held-to-maturity may be made at any time after March 12, 2020 but no later than December 31, 2022.

The Bank expects that it will elect to apply some of the expedients and exceptions provided in ASU 2020-04 relating to contract modifications, hedging relationships, and sales or transfers of held-to-maturity securities; however, the Bank has not yet determined the extent to which it will utilize these expedients and exceptions, nor the timing of when the expedients and exceptions will be elected and therefore the impact of the adoption of ASU 2020-04 on the Bank's financial condition and results of operations is not currently determinable.

Note 3—Trading Securities

Trading securities as of March 31, 2020 and December 31, 2019 were as follows (in thousands):

	March 31, 2020	December 31, 2019
U.S. Treasury Notes	$ 4,570,279	$ 4,532,126
U.S. Treasury Bills	—	928,010
Total	$ 4,570,279	$ 5,460,136

Note 4—Available-for-Sale Securities

Major Security Types. Available-for-sale securities as of March 31, 2020 were as follows (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Debentures				
U.S. government-guaranteed obligations	$ 463,898	$ 70	$ 1,165	$ 462,803
GSE obligations	5,710,485	59,961	2,667	5,767,779
Other	46,214	236	—	46,450
	6,220,597	60,267	3,832	6,277,032
GSE commercial MBS	11,399,913	12,711	180,061	11,232,563
Total	$ 17,620,510	$ 72,978	$ 183,893	$ 17,509,595

Available-for-sale securities as of December 31, 2019 were as follows (in thousands):

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Debentures				
U.S. government-guaranteed obligations	$ 447,072	$ 6,124	$ —	$ 453,196
GSE obligations	5,501,456	84,911	1,986	5,584,381
Other	45,217	342	—	45,559
	5,993,745	91,377	1,986	6,083,136
GSE commercial MBS	10,627,922	79,875	24,433	10,683,364
Total	$ 16,621,667	$ 171,252	$ 26,419	$ 16,766,500

In the tables above, the amortized cost of the Bank's available-for-sale securities includes premiums, discounts and hedging adjustments. Amortized cost excludes accrued interest of $64,682,000 and $66,931,000 at March 31, 2020 and December 31, 2019, respectively.

Other debentures are comprised of securities issued by the Private Export Funding Corporation. These debentures are fully secured by U.S. government-guaranteed obligations and the payment of interest on the debentures is guaranteed by an agency of the U.S. government.

The following table summarizes (in thousands, except number of positions) the available-for-sale securities with unrealized losses as of March 31, 2020. The unrealized losses are aggregated by major security type and length of time that individual securities have been in a continuous loss position.

	Less than 12 Months			12 Months or More			Total		
	Number of Positions	Estimated Fair Value	Gross Unrealized Losses	Number of Positions	Estimated Fair Value	Gross Unrealized Losses	Number of Positions	Estimated Fair Value	Gross Unrealized Losses
Debentures									
U.S. government-guaranteed obligations	8	$ 422,262	$ 1,165	—	$ —	$ —	8	$ 422,262	$ 1,165
GSE debentures	5	158,742	1,371	1	51,715	1,296	6	210,457	2,667
GSE commercial MBS	178	6,632,963	103,274	65	2,295,692	76,787	243	8,928,655	180,061
Total	191	$ 7,213,967	$ 105,810	66	$ 2,347,407	$ 78,083	257	$ 9,561,374	$ 183,893

The following table summarizes (in thousands, except number of positions) the available-for-sale securities with unrealized losses as of December 31, 2019. The unrealized losses are aggregated by major security type and length of time that individual securities have been in a continuous loss position.

	Less than 12 Months			12 Months or More			Total		
	Number of Positions	Estimated Fair Value	Gross Unrealized Losses	Number of Positions	Estimated Fair Value	Gross Unrealized Losses	Number of Positions	Estimated Fair Value	Gross Unrealized Losses
GSE debentures	—	$ —	$ —	3	$ 128,794	$ 1,986	3	$ 128,794	$ 1,986
GSE commercial MBS	34	1,031,193	3,331	67	2,222,955	21,102	101	3,254,148	24,433
Total	34	$ 1,031,193	$ 3,331	70	$ 2,351,749	$ 23,088	104	$ 3,382,942	$ 26,419

Redemption Terms. The amortized cost and estimated fair value of available-for-sale securities (excluding accrued interest) by contractual maturity at March 31, 2020 and December 31, 2019 are presented below (in thousands).

	March 31, 2020		December 31, 2019	
Maturity	Amortized Cost	Estimated Fair Value	Amortized Cost	Estimated Fair Value
Debentures				
Due in one year or less	$ 800,769	$ 804,631	$ 298,084	$ 299,005
Due after one year through five years	3,052,219	3,076,963	3,465,898	3,504,780
Due after five years through ten years	2,351,041	2,378,332	2,183,310	2,231,183
Due after ten years	16,568	17,106	46,453	48,168
	6,220,597	6,277,032	5,993,745	6,083,136
GSE commercial MBS	11,399,913	11,232,563	10,627,922	10,683,364
Total	$ 17,620,510	$ 17,509,595	$ 16,621,667	$ 16,766,500

Interest Rate Payment Terms. At March 31, 2020 and December 31, 2019, all of the Bank's available-for-sale securities were fixed rate securities which were swapped to a variable rate.

Sales of Securities. There were no sales of available-for-sale securities during the three months ended March 31, 2020. During the three months ended March 31, 2019, the Bank sold available-for-sale securities with an amortized cost (determined by the specific identification method) of $410,705,000. Proceeds from the sales totaled $411,145,000, resulting in realized gains of $440,000.

Note 5—Held-to-Maturity Securities

Major Security Types. Held-to-maturity securities as of March 31, 2020 were as follows (in thousands):

	Amortized Cost	Non-credit OTTI Recorded in Accumulated Other Comprehensive Income (Loss)	Carrying Value	Gross Unrecognized Holding Gains	Gross Unrecognized Holding Losses	Estimated Fair Value
Debentures						
U.S. government-guaranteed obligations	$ 5,365	$ —	$ 5,365	$ 10	$ —	$ 5,375
State housing agency obligations	109,533	—	109,533	122	—	109,655
	114,898	—	114,898	132	—	115,030
Mortgage-backed securities						
GSE residential MBS	983,301	—	983,301	1,711	8,319	976,693
Non-agency residential MBS	60,092	8,169	51,923	6,339	2,983	55,279
	1,043,393	8,169	1,035,224	8,050	11,302	1,031,972
Total	$ 1,158,291	$ 8,169	$ 1,150,122	$ 8,182	$ 11,302	$ 1,147,002

Held-to-maturity securities as of December 31, 2019 were as follows (in thousands):

	Amortized Cost	Non-credit OTTI Recorded in Accumulated Other Comprehensive Income (Loss)	Carrying Value	Gross Unrecognized Holding Gains	Gross Unrecognized Holding Losses	Estimated Fair Value
Debentures						
U.S. government-guaranteed obligations	$ 5,862	$ —	$ 5,862	$ 12	$ —	$ 5,874
State housing agency obligations	109,478	—	109,478	—	908	108,570
	115,340	—	115,340	12	908	114,444
Mortgage-backed securities						
GSE residential MBS	1,036,585	—	1,036,585	2,581	3,435	1,035,731
Non-agency residential MBS	62,885	8,640	54,245	11,641	481	65,405
	1,099,470	8,640	1,090,830	14,222	3,916	1,101,136
Total	$ 1,214,810	$ 8,640	$ 1,206,170	$ 14,234	$ 4,824	$ 1,215,580

In the tables above, amortized cost includes premiums, discounts and the credit portion of other-than-temporary impairments ("OTTI") recorded prior to January 1, 2020. Amortized cost excludes accrued interest of $632,000 and $1,005,000 at March 31, 2020 and December 31, 2019, respectively.

Redemption Terms. The amortized cost, carrying value and estimated fair value of held-to-maturity securities by contractual maturity at March 31, 2020 and December 31, 2019 are presented below (in thousands). The expected maturities of some debentures could differ from the contractual maturities presented because issuers may have the right to call such debentures prior to their final stated maturities.

	March 31, 2020			December 31, 2019		
Maturity	Amortized Cost	Carrying Value	Estimated Fair Value	Amortized Cost	Carrying Value	Estimated Fair Value
Debentures						
Due after one year through five years	$ 5,365	$ 5,365	$ 5,375	$ 5,862	$ 5,862	$ 5,874
Due after ten years	109,533	109,533	109,655	109,478	109,478	108,570
	114,898	114,898	115,030	115,340	115,340	114,444
Mortgage-backed securities	1,043,393	1,035,224	1,031,972	1,099,470	1,090,830	1,101,136
Total	$ 1,158,291	$ 1,150,122	$ 1,147,002	$ 1,214,810	$ 1,206,170	$ 1,215,580

The amortized cost of the Bank's mortgage-backed securities classified as held-to-maturity includes net purchase discounts of $1,757,000 and $1,952,000 at March 31, 2020 and December 31, 2019, respectively.

Interest Rate Payment Terms. The following table provides interest rate payment terms for investment securities classified as held-to-maturity at March 31, 2020 and December 31, 2019 (in thousands):

	March 31, 2020	December 31, 2019
Amortized cost of variable-rate held-to-maturity securities other than MBS	$ 114,898	$ 115,340
Amortized cost of held-to-maturity MBS		
Fixed-rate pass-through securities	32	36
Collateralized mortgage obligations		
Fixed-rate	38	57
Variable-rate	1,043,323	1,099,377
	1,043,393	1,099,470
Total	$ 1,158,291	$ 1,214,810

All of the Bank's variable-rate collateralized mortgage obligations classified as held-to-maturity securities have coupon rates that are subject to interest rate caps, none of which were reached during 2019 or the three months ended March 31, 2020.

Sales of Securities. There were no sales of held-to-maturity securities during the three months ended March 31, 2020 or 2019.

Note 6—Advances

Redemption Terms. At March 31, 2020 and December 31, 2019, the Bank had advances outstanding at interest rates ranging from 0.15 percent to 8.27 percent and 0.48 percent to 8.27 percent, respectively, as summarized below (dollars in thousands).

	March 31, 2020		December 31, 2019	
Contractual Maturity	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate
Overdrawn demand deposit accounts	$ 1,713	0.60%	$ 613	1.45%
Due in one year or less	23,499,359	0.82	16,683,401	1.72
Due after one year through two years	1,275,081	2.22	1,491,736	2.35
Due after two years through three years	1,214,341	2.21	1,125,342	2.38
Due after three years through four years	984,441	2.55	742,698	2.67
Due after four years through five years	1,693,273	1.70	1,435,402	2.11
Due after five years	17,529,446	1.32	15,464,698	1.69
Total par value	46,197,654	1.15%	36,943,890	1.79%
Deferred net prepayment fees	(6,150)		(6,657)	
Commitment fees	(97)		(99)	
Hedging adjustments	731,111		180,321	
Total	$ 46,922,518		$ 37,117,455	

Advances presented in the table above exclude accrued interest of $44,230,000 and $49,096,000 at March 31, 2020 and December 31, 2019, respectively.

The Bank offers advances to members that may be prepaid on specified dates without the member incurring prepayment or termination fees (prepayable and callable advances). The prepayment of other advances requires the payment of a fee to the Bank (prepayment fee) if necessary to make the Bank financially indifferent to the prepayment of the advance. At March 31, 2020 and December 31, 2019, the Bank had aggregate prepayable and callable advances totaling $10,191,944,000 and $10,428,894,000, respectively.

The following table summarizes advances outstanding at March 31, 2020 and December 31, 2019, by the earlier of contractual maturity or next call date, or the first date on which prepayable advances can be repaid without a prepayment fee (in thousands):

Contractual Maturity or Next Call Date	March 31, 2020	December 31, 2019
Overdrawn demand deposit accounts	$ 1,713	$ 613
Due in one year or less	33,332,191	26,716,128
Due after one year through two years	1,214,051	1,408,317
Due after two years through three years	1,109,378	1,018,388
Due after three years through four years	871,999	691,905
Due after four years through five years	1,240,466	1,030,243
Due after five years	8,427,856	6,078,296
Total par value	$ 46,197,654	$ 36,943,890

The Bank also offers putable advances. With a putable advance, the Bank purchases a put option from the member that allows the Bank to terminate the fixed-rate advance on specified dates and offer, subject to certain conditions, replacement funding at prevailing market rates. At March 31, 2020 and December 31, 2019, the Bank had putable advances outstanding totaling $8,055,800,000 and $6,796,500,000, respectively.

The following table summarizes advances outstanding at March 31, 2020 and December 31, 2019, by the earlier of contractual maturity or next possible put date (in thousands):

Contractual Maturity or Next Put Date	March 31, 2020	December 31, 2019
Overdrawn demand deposit accounts	$ 1,713	$ 613
Due in one year or less	30,527,159	21,999,901
Due after one year through two years	2,113,081	1,851,736
Due after two years through three years	1,319,341	1,195,342
Due after three years through four years	1,027,241	791,498
Due after four years through five years	1,400,273	1,191,402
Due after five years	9,808,846	9,913,398
Total par value	$ 46,197,654	$ 36,943,890

Interest Rate Payment Terms. The following table provides interest rate payment terms for advances outstanding at March 31, 2020 and December 31, 2019 (in thousands):

	March 31, 2020	December 31, 2019
Fixed-rate		
Due in one year or less	$ 23,130,660	$ 16,054,501
Due after one year	12,557,446	9,911,487
Total fixed-rate	35,688,106	25,965,988
Variable-rate		
Due in one year or less	370,413	629,513
Due after one year	10,139,135	10,348,389
Total variable-rate	10,509,548	10,977,902
Total par value	$ 46,197,654	$ 36,943,890

At March 31, 2020 and December 31, 2019, 42 percent and 39 percent, respectively, of the Bank's fixed-rate advances were swapped to a variable rate.

Prepayment Fees. When a member/borrower prepays an advance, the Bank could suffer lower future income if the principal portion of the prepaid advance is reinvested in lower-yielding assets. To protect against this risk, the Bank generally charges a prepayment fee that makes it financially indifferent to a borrower's decision to prepay an advance. The Bank records prepayment fees received from members/borrowers on prepaid advances net of any associated hedging adjustments on those advances. These fees are reflected as interest income in the statements of income either immediately (as prepayment fees on advances) or over time (as interest income on advances) as further described below. In cases in which the Bank funds a new advance concurrent with or within a short period of time before or after the prepayment of an existing advance and the advance meets the accounting criteria to qualify as a modification of the prepaid advance, the net prepayment fee on the prepaid advance is deferred, recorded in the basis of the modified advance, and amortized into interest income on advances over the life of the modified advance using the level-yield method. During the three months ended March 31, 2020 and 2019, gross advance prepayment fees received from members/borrowers were $1,972,000 and $193,000, respectively, none of which were deferred.

The Bank also offers advances that include a symmetrical prepayment feature which allows a member to prepay an advance at the lower of par value or fair value plus a make-whole amount payable to the Bank. There were no prepayments of symmetrical prepayment advances during the three months ended March 31, 2020. During the three months ended March 31, 2019, a symmetrical prepayment advance with a par value of $5,000,000 was prepaid. The difference by which the par value of the advance exceeded its fair value, less the make-whole amount, totaled $68,000 and was recorded in prepayment fees on advances.

Note 7—Mortgage Loans Held for Portfolio

Mortgage loans held for portfolio represent held-for-investment loans acquired through the Mortgage Partnership Finance® ("MPF"®) program. The following table presents information as of March 31, 2020 and December 31, 2019 for mortgage loans held for portfolio (in thousands):

	March 31, 2020	December 31, 2019
Fixed-rate medium-term* single-family mortgages	$ 44,543	$ 33,954
Fixed-rate long-term single-family mortgages	4,152,931	3,960,393
Premiums	83,502	78,643
Discounts	(1,791)	(1,821)
Deferred net derivative gains associated with mortgage delivery commitments	7,334	5,444
Total mortgage loans held for portfolio	4,286,519	4,076,613
Less: allowance for credit losses on mortgage loans	(4,339)	(1,149)
Total mortgage loans held for portfolio, net of allowance for credit losses	$ 4,282,180	$ 4,075,464

*Medium-term is defined as an original term of 15 years or less.

Mortgage loans presented in the table above exclude accrued interest receivable of $22,736,000 and $21,863,000 at March 31, 2020 and December 31, 2019, respectively.

The unpaid principal balance of mortgage loans held for portfolio at March 31, 2020 and December 31, 2019 was comprised of conventional loans totaling $4,184,627,000 and $3,980,970,000, respectively, and government-guaranteed/ insured loans totaling $12,847,000 and $13,377,000, respectively.

Note 8—Accrued Interest Receivable

The components of accrued interest receivable as of March 31, 2020 and December 31, 2019 were as follows (in thousands):

	March 31, 2020	December 31, 2019
Advances	$ 44,230	$ 49,096
Investment securities		
Trading	21,747	13,742
Available-for-sale	64,682	66,931
Held-to-maturity	632	1,005
Mortgage loans held for portfolio	22,736	21,863
Interest-bearing deposits	448	1,192
Securities purchased under agreements to resell	—	195
Federal funds sold	22	194
Total	$ 154,497	$ 154,218

Note 9—Allowance for Credit Losses

As discussed in Note 2, on January 1, 2020, the Bank adopted new accounting guidance pertaining to the measurement of credit losses on financial instruments. As of the balance sheet date, an allowance for credit losses is separately established, if necessary, for each of the Bank's financial instruments carried at amortized cost, its available-for-sales securities and its off-balance sheet credit exposures. Expected credit losses on these financial instruments are recorded through an allowance for credit losses. The allowance for credit losses is the amount necessary to reduce the amortized cost of financial instruments carried at amortized cost to the net amount expected to be collected and the amortized cost of available-for-sale securities to the higher of the security's fair value or the present value of the cash flows expected to be collected from the security. To the extent necessary, an allowance for credit losses for off-balance sheet credit exposures is recorded as a liability. The accounting treatment for credit losses on financing receivables and impairment on investments in periods prior to January 1, 2020 is discussed in the 2019 10-K.

Short-Term Investments. The Bank invests in overnight interest-bearing deposits, overnight Federal Funds sold and securities sold under agreements to repurchase. These investments provide short-term liquidity and are carried at amortized cost. Accrued interest is recorded separately on the statement of condition (see Note 8). At March 31, 2020, all investments in Federal Funds sold and interest-bearing deposits were repaid according to the contractual terms. Accordingly, no allowance for credit losses was recorded on these assets at March 31, 2020.

Long-Term Investments. The Bank evaluates its available-for-sale securities for impairment by comparing the security's fair value to its amortized cost. Impairment exists when the fair value of the investment is less than its amortized cost (i.e., when the security is in an unrealized loss position).The Bank evaluates each impaired security to determine whether the impairment is due to credit losses. Held-to-maturity securities are evaluated for impairment on a pooled basis, unless an individual assessment is deemed necessary because the securities do not contain similar risk characteristics. Accrued interest is recorded separately on the statement of condition.

At March 31, 2020, the gross unrealized losses on the Bank's available-for-sale securities were $183,893,000, all of which related to securities that are either guaranteed by the U.S. government or issued by GSEs. At March 31, 2020, the gross unrealized losses on the Bank's held-to-maturity securities were $14,021,000, of which $8,319,000 were attributable to MBS that are issued and guaranteed by GSEs and $5,702,000 were attributable to its holdings of non-agency (i.e., private-label) residential MBS.

Government-Guaranteed and GSE Investments. As of March 31, 2020, the U.S. government and the issuers of the Bank's holdings of GSE debentures, GSE commercial MBS ("CMBS") and GSE residential MBS ("RMBS") were rated triple-A by Moody's Investors Service ("Moody's") and AA+ by S&P Global Ratings ("S&P"). The Bank has not experienced any defaults on its government-guaranteed debentures, GSE CMBS or GSE RMBS, nor does it expect to experience any defaults on these securities. Based upon the Bank's assessment of the strength of the government guaranty, the Bank expects that the amounts to be collected on its holdings of U.S. government-guaranteed debentures will not be less than the Bank's amortized cost bases in these investments. Based upon the Bank's assessment of the creditworthiness of the issuers of the GSE debentures that were in an unrealized loss position at March 31, 2020 and the credit ratings assigned by Moody's and S&P, the Bank expects that these debentures would not be settled at an amount less than the Bank's amortized cost bases in the investments. In addition, based upon the Bank's assessment of the strength of the GSEs' guarantees of the Bank's holdings of GSE CMBS and GSE RMBS and the credit ratings assigned by Moody's and S&P, the Bank expects that the amounts to be collected on its holdings of GSE MBS will not be less than the Bank's amortized cost bases in these investments. The Bank does not intend to sell the investments and it is not more likely than not that the Bank will be required to sell the investments before recovery of their amortized cost bases. Because the current market value deficits associated with the Bank's available-for-sale securities are not attributable to credit quality, and because the amount expected to be collected on its held-to-maturity securities is not less than the amortized cost of these investments, the Bank has determined that an allowance for credit losses is not necessary on any of its government-guaranteed or GSE investments at March 31, 2020.

State Housing Agency Debentures. As of March 31, 2020, the Bank's holdings of state housing agency bonds are rated triple-A by both Moody's and S&P. The Bank has not experienced any defaults on its state housing agency debentures, nor does it expect to experience any defaults on these securities. Based upon the Bank's assessment of the creditworthiness of the state housing agency and the credit ratings assigned by Moody's and S&P, the Bank expects that the amounts to be collected on its holdings of state housing agency debentures will not be less than the amortized cost basis of these investments. Because the Bank does not intend to sell the investments and it is not more likely than not that the Bank will be required to sell the investments before recovery of their amortized cost bases, the Bank does not consider an allowance for credit losses on its state housing debentures to be necessary at March 31, 2020.

Non-Agency RMBS. As of March 31, 2020, 5 of the Bank's non-agency RMBS with an aggregate amortized cost of $12,061,000 were rated investment grade (i.e., triple-B or higher by Moody's and/or S&P), 16 non-agency RMBS with an aggregate amortized cost of $47,954,000 were rated below investment grade and 1 non-agency RMBS with an amortized cost of $77,000 was unrated. In periods prior to 2017, 15 of the non-agency RMBS that were rated below investment grade at March 31, 2020 had been determined to be other-than-temporarily impaired. At March 31, 2020 and December 31, 2019, the amortized cost of the Bank's non-agency RMBS included credit losses of $6,627,000 and $6,765,000, respectively, on these previously impaired securities.

Because the ultimate receipt of contractual payments on the Bank’s non-agency RMBS will depend upon the credit and prepayment performance of the underlying loans and the credit enhancements for the senior securities owned by the Bank, the Bank closely monitors these investments in an effort to determine whether the credit enhancement associated with each security is sufficient to protect against potential losses of principal and interest on the underlying mortgage loans. The credit enhancement for each of the Bank’s non-agency RMBS is provided by a senior/subordinate structure, and none of the securities owned by the Bank are insured by third-party bond insurers. More specifically, each of the Bank’s non-agency RMBS represents a single security class within a securitization that has multiple classes of securities. Each security class has a distinct claim on the cash flows from the underlying mortgage loans, with the subordinate securities having a junior claim relative to the more senior securities. The Bank’s non-agency RMBS have a senior claim on the cash flows from the underlying mortgage loans.

To assess whether an allowance for credit losses was needed on its 22 non-agency RMBS holdings, the Bank considered the results of the cash flow analyses that it performed for each security as of December 31, 2019 under both a best estimate scenario and a more stressful housing price scenario. The analyses were performed using two third-party models. The first model considered borrower characteristics and the particular attributes of the loans underlying the Bank’s securities, in conjunction with assumptions about future changes in home prices and interest rates, to project prepayments, defaults and loss severities.

The month-by-month projections of future loan performance derived from the first model, which reflected projected prepayments, defaults and loss severities under each scenario, were then input into a second model that allocated the projected loan level cash flows and losses to the various security classes in the securitization structure in accordance with its prescribed cash flow and loss allocation rules. In a securitization in which the credit enhancement for the senior securities is derived from the presence of subordinate securities, losses are generally allocated first to the subordinate securities until their principal balance is reduced to zero.

At March 31, 2020, the Bank considered the potential impact that recent changes in economic conditions could have on the collectibility of these securities relative to the assumptions that were used in the cash flow projections under the more stressful housing price scenario referred to above to determine whether it expected to incur any additional credit losses on these securities. Based on the results of these cash flow analyses, the payment status of the securities and the considerations regarding the potential impact that the COVID-19 pandemic could have on the securities' cash flows, the Bank determined it is likely that it will fully recover the remaining amortized cost bases of all of its non-agency RMBS. Because the Bank does not intend to sell the investments and it is not more likely than not that the Bank will be required to sell the investments before recovery of their remaining amortized cost bases, no allowance for credit losses on the Bank's non-agency RMBS was deemed to be necessary at March 31, 2020.

Standby Bond Purchase Agreements. The Bank has entered into standby bond purchase agreements with a state housing finance agency within its district whereby, for a fee, the Bank agrees to serve as a standby liquidity provider. If required, the Bank will purchase and hold the housing finance agency's bonds until the designated marketing agent can find a suitable investor or the housing finance agency repurchases the bonds according to a schedule established by the agreement. To date, the Bank has never been required to purchase a bond under its standby bond purchase agreements. In addition, the agreements contain provisions that allow the Bank to terminate the agreement if the housing finance agency's credit rating, or the rating of the bonds underlying the agreements, decline to a level below investment grade. Based on these provisions, the high credit quality of the housing finance agency and the unlikelihood that the Bank will be required to repurchase the bonds, a reserve for credit losses on standby bond purchase agreements was not considered necessary at March 31, 2020.

Financing Receivables. A portfolio segment is defined as the level at which an entity develops and documents a systematic method for determining its allowance for credit losses on financing receivables which, for the Bank, includes off-balance sheet credit exposures to members. The Bank has developed and documented a systematic methodology for determining an allowance for credit losses for the following portfolio segments: (1) advances and other extensions of credit to members/borrowers, collectively referred to as “extensions of credit to members”; (2) government-guaranteed/insured mortgage loans held for portfolio; and (3) conventional mortgage loans held for portfolio.

Classes of financing receivables are generally a disaggregation of a portfolio segment and are determined on the basis of their initial measurement attribute, the risk characteristics of the financing receivable and an entity’s method for monitoring and

assessing credit risk. Because the credit risk arising from the Bank's financing receivables is assessed and measured at the portfolio segment level, the Bank does not have separate classes of financing receivables within each of its portfolio segments.

During the three months ended March 31, 2020 and 2019, there were no significant purchases or sales of financing receivables, nor were any financing receivables reclassified to held for sale.

Advances and Other Extensions of Credit to Members. In accordance with federal statutes, including the Federal Home Loan Bank Act of 1932, as amended (the "FHLB Act"), the Bank lends to financial institutions within its five-state district that are involved in housing finance. The FHLB Act requires the Bank to obtain and maintain sufficient collateral for advances and other extensions of credit to protect against losses. The Bank makes advances and otherwise extends credit only against eligible collateral, as defined by regulation. To ensure the value of collateral pledged to the Bank is sufficient to secure its advances and other extensions of credit, the Bank applies various haircuts, or discounts, to the collateral to determine the value against which borrowers may borrow. As additional security, the Bank has a statutory lien on each borrower's capital stock in the Bank. The Bank has procedures in place for validating the reasonableness of its collateral valuations. In addition, collateral verifications and on-site reviews are performed based on the risk profile of the borrower.

On at least a quarterly basis, the Bank evaluates all outstanding extensions of credit to members/borrowers for potential credit losses. These evaluations include a review of: (1) the amount, type and performance of collateral available to secure the outstanding obligations; (2) metrics that may be indicative of changes in the financial condition and general creditworthiness of the member/borrower; and (3) the payment status of the obligations. Any outstanding extensions of credit that exhibit a potential credit weakness that could jeopardize the full collection of the outstanding obligations would be classified as substandard, doubtful or loss. The Bank did not have any advances or other extensions of credit to members/borrowers that were classified as substandard, doubtful or loss at March 31, 2020 or December 31, 2019.

The Bank considers the amount, type and performance of collateral to be the primary indicator of credit quality with respect to its extensions of credit to members/borrowers. At March 31, 2020 and December 31, 2019, the Bank had rights to collateral on a borrower-by-borrower basis with an estimated value in excess of each borrower's outstanding extensions of credit.

The Bank continues to evaluate and, as necessary, modify its credit extension and collateral policies based on market conditions. At March 31, 2020 and December 31, 2019, the Bank did not have any advances that were past due, on nonaccrual status, or considered impaired. There have been no troubled debt restructurings related to advances.

The Bank has never experienced a credit loss on an advance or any other extension of credit to a member/borrower and, based on its credit extension and collateral policies, management currently does not anticipate any credit losses on its extensions of credit to members/borrowers. Accordingly, the Bank has not provided any allowance for credit losses on advances, nor has it recorded any liabilities to reflect an allowance for credit losses related to its off-balance sheet credit exposures to members.

Mortgage Loans — Government-guaranteed or government-insured. The Bank's government-guaranteed or government-insured fixed-rate mortgage loans are guaranteed or insured by the Federal Housing Administration or the Department of Veterans Affairs and were acquired through the MPF program (as more fully described in the Bank's 2019 10-K) in periods prior to 2004. Any losses from these loans are expected to be recovered from those entities. Any losses from these loans that are not recovered from those entities are absorbed by the servicers. Therefore, the Bank has not established an allowance for credit losses on government-guaranteed or government-insured mortgage loans. Government-guaranteed or government-insured loans are not placed on nonaccrual status.

Mortgage Loans — Conventional Mortgage Loans. The Bank's conventional mortgage loans have also been acquired through the MPF program. The allowance for credit losses on conventional mortgage loans is determined by an analysis that includes consideration of various data such as past performance, current performance, projected performance, loan portfolio characteristics, collateral-related characteristics, prevailing economic conditions and reasonable and supportable forecasts of expected economic conditions. The allowance for credit losses on conventional mortgage loans also factors in the credit enhancement under the MPF program. Any credit losses that are expected to be recovered from the credit enhancements are not reserved as part of the Bank's allowance for credit losses.

The Bank places a conventional mortgage loan on nonaccrual status when the collection of the contractual principal or interest is 90 days or more past due. When a mortgage loan is placed on nonaccrual status, accrued but uncollected interest is reversed against interest income. The Bank records cash payments received on nonaccrual loans as a reduction of principal. A loan on nonaccrual status is restored to accrual status when none of its contractual principal and interest is due and unpaid, and the Bank expects repayment of the remaining contractual interest and principal.

Collateral-dependent loans that are on nonaccrual status are measured for impairment based on the fair value of the underlying mortgaged property less estimated selling costs. Loans are considered collateral-dependent if repayment is expected to be provided solely by the sale of the underlying property; that is, there is no other available and reliable source of repayment. A collateral-dependent loan is impaired if the fair value of the underlying collateral less estimated selling costs is less than the

amortized cost of the loan. Interest income on impaired loans is recognized in the same manner as it is for nonaccrual loans noted above.

The Bank evaluates whether to record a charge-off on a conventional mortgage loan when the loan becomes 180 days or more past due or upon the occurrence of a confirming event, whichever occurs first. Confirming events include, but are not limited to, the occurrence of foreclosure or notification of a claim against any of the credit enhancements. A charge-off is recorded if the amount expected to be collected on the loan is less than its amortized cost.

The Bank considers the key credit quality indicator for conventional mortgage loans to be the payment status of each loan. The table below summarizes the amortized cost (excluding accrued interest receivable) by payment status for mortgage loans at March 31, 2020 and the recorded investment (which includes accrued interest receivable) by payment status for mortgage loans at December 31, 2019 (dollars in thousands).

	March 31, 2020					December 31, 2019		
	Conventional Loans Originated Prior to 2004	Conventional Loans Originated in 2016-2020	Total Conventional Loans	Government-Guaranteed/ Insured Loans [1]	Total	Conventional Loans	Government-Guaranteed/ Insured Loans	Total
Mortgage loans:								
30-59 days delinquent	$ 262	$ 25,415	$ 25,677	$ 543	$ 26,220	$ 37,632	$ 464	$ 38,096
60-89 days delinquent	77	3,376	3,453	86	3,539	2,728	189	2,917
90 days or more delinquent	222	4,451	4,673	184	4,857	6,106	80	6,186
Total past due	561	33,242	33,803	813	34,616	46,466	733	47,199
Total current loans	8,993	4,230,818	4,239,811	12,092	4,251,903	4,038,455	12,822	4,051,277
Total mortgage loans	$ 9,554	$ 4,264,060	$ 4,273,614	$ 12,905	$ 4,286,519	$ 4,084,921	$ 13,555	$ 4,098,476
Other delinquency statistics:								
In process of foreclosure [2]			$ 1,783	$ 36	$ 1,819	$ 1,752	$ 36	$ 1,788
Serious delinquency rate [3]			0.1%	1.4%	0.1%	0.2%	0.6%	0.2%
Past due 90 days or more and still accruing interest [4]			$ —	$ 184	$ 184	$ —	$ 80	$ 80
Nonaccrual loans [5]			$ 6,744	$ —	$ 6,744	$ 7,304	$ —	$ 7,304
Troubled debt restructurings			$ —	$ —	$ —	$ —	$ —	$ —

(1) All of the Bank's government-guaranteed/insured loans were originated in years prior to 2004.

(2) Includes loans where the decision of foreclosure or similar alternative such as pursuit of deed-in-lieu has been made.

(3) Loans that are 90 days or more past due or in the process of foreclosure expressed as a percentage of the loan portfolio.

(4) Only government-guaranteed/insured mortgage loans continue to accrue interest after they become 90 days or more past due.

(5) The Bank did not have any specific allowance for credit losses on nonaccrual loans at March 31, 2020.

At March 31, 2020 and December 31, 2019, the Bank’s other assets included $300,000 and $15,000, respectively, of real estate owned.

Mortgage loans are considered impaired when, based upon current information and events, it is probable that the Bank will be unable to collect all principal and interest amounts due according to the contractual terms of the mortgage loan agreement. Each seriously delinquent mortgage loan and each troubled debt restructuring is specifically reviewed for impairment. At March 31, 2020 and December 31, 2019, the Bank did not have any troubled debt restructurings related to mortgage loans. At these dates, the estimated value of the collateral securing each seriously delinquent loan, plus the estimated amount that can be recovered through credit enhancements and mortgage insurance, if any, exceeded the outstanding loan amount. Therefore, no specific reserve for credit losses was established for any of the seriously delinquent mortgage loans. The remaining conventional mortgage loans were evaluated for impairment on a pool basis. Based upon the current and past performance of these loans, current economic conditions, reasonable and supportable forecasts of expected economic conditions (taking into

account the forecasted impact of the COVID-19 pandemic) and expected recoveries from credit enhancements, the Bank determined that an allowance for credit losses of $4,339,000 was adequate to reserve for expected credit losses in its conventional mortgage loan portfolio at March 31, 2020.

The following table presents the activity in the allowance for credit losses on conventional mortgage loans held for portfolio during the three months ended March 31, 2020 and 2019 (in thousands):

	Three Months Ended March 31,	
	2020	2019
Balance, beginning of period	$ 1,149	$ 493
Adjustment to initially apply new credit loss accounting guidance (Note 2)	2,191	—
Provision for credit losses	999	118
Balance, end of period	$ 4,339	$ 611

Note 10—Consolidated Obligations

Consolidated obligations are the joint and several obligations of the FHLBanks and consist of consolidated obligation bonds and discount notes. Consolidated obligations are backed only by the financial resources of the 11 FHLBanks. Consolidated obligations are not obligations of, nor are they guaranteed by, the U.S. government. The FHLBanks issue consolidated obligations through the Office of Finance as their agent. In connection with each debt issuance, one or more of the FHLBanks specifies the amount of debt it wants issued on its behalf; the Bank receives the proceeds of only the debt issued on its behalf and records on its statements of condition only that portion of the consolidated obligations for which it has received the proceeds. Consolidated obligation bonds are issued primarily to raise intermediate- and long-term funds for the FHLBanks and are not subject to any statutory or regulatory limits on maturity. Consolidated obligation discount notes are issued to raise short-term funds and have maturities of one year or less. These notes are issued at a price that is less than their face amount and are redeemed at par value when they mature. For additional information regarding the FHLBanks' joint and several liability on consolidated obligations, see Note 17.

The par amounts of the 11 FHLBanks' outstanding consolidated obligations, including consolidated obligations held as investments by other FHLBanks, were approximately $1.175 trillion and $1.026 trillion at March 31, 2020 and December 31, 2019, respectively. The Bank was the primary obligor on $78.0 billion and $70.1 billion (at par value), respectively, of these consolidated obligations.

Interest Rate Payment Terms. The following table summarizes the Bank's consolidated obligation bonds outstanding by interest rate payment terms at March 31, 2020 and December 31, 2019 (in thousands, at par value).

	March 31, 2020	December 31, 2019
Fixed-rate	$ 20,504,280	$ 21,529,815
Variable-rate	12,782,000	12,642,000
Step-up	625,000	1,337,500
Step-down	75,000	175,000
Total par value	$ 33,986,280	$ 35,684,315

At March 31, 2020 and December 31, 2019, 84 percent and 86 percent, respectively, of the Bank's fixed-rate consolidated obligation bonds were swapped to a variable rate.

Redemption Terms. The following is a summary of the Bank's consolidated obligation bonds outstanding at March 31, 2020 and December 31, 2019, by contractual maturity (dollars in thousands):

	March 31, 2020		December 31, 2019	
Contractual Maturity	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate
Due in one year or less	$ 15,501,415	0.91%	$ 16,900,625	1.75%
Due after one year through two years	6,163,190	1.12	7,849,605	1.76
Due after two years through three years	3,295,850	2.08	2,269,005	2.21
Due after three years through four years	1,702,515	2.39	1,912,490	2.42
Due after four years through five years	5,405,745	2.03	3,811,615	2.16
Due after five years	1,917,565	2.44	2,940,975	2.52
Total par value	33,986,280	1.40%	35,684,315	1.93%
Premiums	912		1,091	
Discounts	(726)		(781)	
Debt issuance costs	(4,013)		(4,479)	
Hedging adjustments	203,940		65,681	
Total	$ 34,186,393		$ 35,745,827	

At March 31, 2020 and December 31, 2019, the Bank's consolidated obligation bonds outstanding included the following (in thousands, at par value):

	March 31, 2020	December 31, 2019
Non-callable bonds	$ 20,866,880	$ 22,188,915
Callable bonds	13,119,400	13,495,400
Total par value	$ 33,986,280	$ 35,684,315

The following table summarizes the Bank's consolidated obligation bonds outstanding at March 31, 2020 and December 31, 2019, by the earlier of contractual maturity or next possible call date (in thousands, at par value):

Contractual Maturity or Next Call Date	March 31, 2020	December 31, 2019
Due in one year or less	$ 25,655,815	$ 25,936,025
Due after one year through two years	5,067,190	6,397,605
Due after two years through three years	1,770,850	1,649,005
Due after three years through four years	1,075,615	1,193,590
Due after four years through five years	393,745	409,615
Due after five years	23,065	98,475
Total par value	$ 33,986,280	$ 35,684,315

Discount Notes. At March 31, 2020 and December 31, 2019, the Bank's consolidated obligation discount notes, all of which are due within one year, were as follows (dollars in thousands):

	Book Value	Par Value	Weighted Average Implied Interest Rate
March 31, 2020	$ 43,953,217	$ 44,000,497	0.80%
December 31, 2019	$ 34,327,886	$ 34,405,724	1.57%

Note 11—Affordable Housing Program ("AHP")

The following table summarizes the changes in the Bank's AHP liability during the three months ended March 31, 2020 and 2019 (in thousands):

	Three Months Ended March 31,	
	2020	2019
Balance, beginning of period	$ 57,247	$ 44,358
AHP assessment	5,734	6,494
Grants funded, net of recaptured amounts	(5,842)	(5,116)
Balance, end of period	$ 57,139	$ 45,736

Note 12—Assets and Liabilities Subject to Offsetting

The Bank has derivatives and, from time to time, securities purchased under agreements to resell that are subject to enforceable master netting agreements or similar arrangements. For purposes of reporting derivative assets and derivative liabilities, the Bank offsets the fair value amounts recognized for derivative instruments (including the right to reclaim cash collateral and the obligation to return cash collateral) where a legally enforceable right of setoff exists. The Bank did not have any liabilities that were eligible to offset its securities purchased under agreements to resell (i.e., securities sold under agreements to repurchase) as of December 31, 2019.

The Bank's derivative transactions are executed either bilaterally or, if required, cleared through a third-party central clearinghouse. The Bank has entered into master agreements with each of its bilateral derivative counterparties that provide for the netting of all transactions with each of these counterparties. Under its master agreements with its non-member bilateral derivative counterparties, collateral is delivered (or returned) daily when certain thresholds (ranging from $50,000 to $500,000) are met. The Bank offsets the fair value amounts recognized for bilaterally traded derivatives executed with the same counterparty, including any cash collateral remitted to or received from the counterparty. When entering into derivative transactions with its members, the Bank requires the member to post eligible collateral in an amount equal to the sum of the net market value of the member's derivative transactions with the Bank (if the value is positive to the Bank) plus a percentage of the notional amount of any interest rate swaps, with market values determined on at least a monthly basis. Eligible collateral for derivative transactions with members consists of collateral that is eligible to secure advances and other obligations under the member's Advances and Security Agreement with the Bank. The Bank is not required to pledge collateral to its members to secure derivative positions.

For cleared derivatives, all transactions with each clearing member of each clearinghouse are netted pursuant to legally enforceable setoff rights. Cleared derivatives are subject to initial and variation margin requirements established by the clearinghouse and its clearing members. Unlike bilateral derivatives, variation margin payments on cleared derivatives are legally characterized as settlements on the contracts. Initial and variation margin is typically delivered/paid (or returned/received) daily and is not subject to any maximum unsecured thresholds. The Bank offsets the fair value amounts recognized for cleared derivatives transacted with each clearing member of each clearinghouse (which fair value amounts include variation margin paid or received) and any cash collateral pledged or received.

The following table presents derivative instruments and securities purchased under agreements to resell with the legal right of offset, including the related collateral received from or pledged to counterparties as of March 31, 2020 and December 31, 2019 (in thousands). For daily settled derivative contracts, the variation margin payments/receipts are included in the gross amounts of derivative assets and liabilities.

	Gross Amounts of Recognized Financial Instruments	Gross Amounts Offset in the Statement of Condition	Net Amounts Presented in the Statement of Condition	Collateral Not Offset in the Statement of Condition (1)	Net Unsecured Amount
March 31, 2020					
Assets					
Derivatives					
Bilateral derivatives	$ 91,835	$ 7,949	$ 99,784	$ (8,599) (2)	$ 91,185
Cleared derivatives	54,519	(9,051)	45,468	—	45,468
Total assets	$ 146,354	$ (1,102)	$ 145,252	$ (8,599)	$ 136,653
Liabilities					
Derivatives					
Bilateral derivatives	$ 623,700	$ (621,630)	$ 2,070	$ —	$ 2,070
Cleared derivatives	9,385	(9,385)	—	— (3)	—
Total liabilities	$ 633,085	$ (631,015)	$ 2,070	$ —	$ 2,070
December 31, 2019					
Assets					
Derivatives					
Bilateral derivatives	$ 22,721	$ (10,978)	$ 11,743	$ (5,313) (2)	$ 6,430
Cleared derivatives	33,618	(4,090)	29,528	—	29,528
Total derivatives	56,339	(15,068)	41,271	(5,313)	35,958
Securities purchased under agreements to resell	4,310,000	—	4,310,000	(4,310,000)	—
Total assets	$ 4,366,339	$ (15,068)	$ 4,351,271	$ (4,315,313)	$ 35,958
Liabilities					
Derivatives					
Bilateral derivatives	$ 168,297	$ (164,442)	$ 3,855	$ —	$ 3,855
Cleared derivatives	4,138	(4,138)	—	— (3)	—
Total liabilities	$ 172,435	$ (168,580)	$ 3,855	$ —	$ 3,855

(1) Any overcollateralization or any excess variation margin associated with daily settled contracts at an individual clearinghouse/clearing member or bilateral counterparty level is not included in the determination of the net unsecured amount.

(2) Consists of collateral pledged by member counterparties.

(3) The Bank had pledged securities with aggregate fair values of $888,729,000 and $842,256,000 at March 31, 2020 and December 31, 2019, respectively, to further secure its cleared derivatives, which is a result of the initial margin requirements imposed upon the Bank.

Note 13—Derivatives and Hedging Activities

Hedging Activities. As a financial intermediary, the Bank is exposed to interest rate risk. This risk arises from a variety of financial instruments that the Bank enters into on a regular basis in the normal course of its business. The Bank enters into interest rate swap, swaption, cap and forward rate agreements (collectively, interest rate exchange agreements) to manage its exposure to changes in interest rates. The Bank may use these instruments to adjust the effective maturity, repricing frequency, or option characteristics of financial instruments to achieve risk management objectives. In addition, the Bank may use these instruments to hedge the variable cash flows associated with forecasted transactions. The Bank has not entered into any credit default swaps or foreign exchange-related derivatives and, as of March 31, 2020, it was not a party to any forward rate agreements.

The Bank uses interest rate exchange agreements in three ways: (1) by designating the agreement as a fair value hedge of a specific financial instrument or firm commitment; (2) by designating the agreement as a cash flow hedge of a forecasted transaction; or (3) by designating the agreement as a hedge of some other defined risk (referred to as an "economic hedge"). For example, the Bank uses interest rate exchange agreements in its overall interest rate risk management activities to adjust the interest rate sensitivity of consolidated obligations to approximate more closely the interest rate sensitivity of its assets (both advances and investments), and/or to adjust the interest rate sensitivity of advances or investments to approximate more closely the interest rate sensitivity of its liabilities. In addition to using interest rate exchange agreements to manage mismatches between the coupon features of its assets and liabilities, the Bank also uses interest rate exchange agreements to, among other things, manage embedded options in assets and liabilities, to preserve the market value of existing assets and liabilities, to hedge the duration risk of prepayable instruments, to hedge the variable cash flows associated with forecasted transactions, to offset interest rate exchange agreements entered into with members (the Bank serves as an intermediary in these transactions), and to reduce funding costs.

The Bank, consistent with Finance Agency regulations, enters into interest rate exchange agreements only to reduce potential market risk exposures inherent in otherwise unhedged assets and liabilities or anticipated transactions, or to act as an intermediary between its members and the Bank's non-member derivative counterparties. The Bank is not a derivatives dealer and it does not trade derivatives for short-term profit.

At inception, the Bank formally documents the relationships between derivatives designated as hedging instruments and their hedged items, its risk management objectives and strategies for undertaking the hedge transactions, and its method for assessing the effectiveness of the hedging relationships. For fair value hedges, this process includes linking the derivatives to: (1) specific assets and liabilities on the statements of condition or (2) firm commitments. For cash flow hedges, this process includes linking the derivatives to forecasted transactions. The Bank also formally assesses (both at the inception of the hedging relationship and on a monthly basis thereafter) whether the derivatives that are used in hedging transactions have been effective in offsetting changes in the fair value of hedged items or the cash flows associated with forecasted transactions and whether those derivatives may be expected to remain effective in future periods. The Bank uses regression analyses to assess the effectiveness of its hedges.

Investment Securities and Mortgage Loans Held for Portfolio — The Bank has invested in agency and non-agency MBS and residential mortgage loans. The interest rate and prepayment risk associated with these investments is managed through consolidated obligations and/or derivatives. The Bank may manage prepayment and duration risk presented by some of these investments with either callable and/or non-callable consolidated obligations and/or interest rate exchange agreements, including interest rate swaps, swaptions and caps.

A substantial portion of the Bank's held-to-maturity securities are variable-rate MBS that include caps that would limit the variable-rate coupons if short-term interest rates rise dramatically. To hedge a portion of the potential cap risk embedded in these securities, the Bank entered into interest rate cap agreements, only one of which remained outstanding at March 31, 2020. These derivatives are treated as economic hedges.

All of the Bank's available-for-sale securities are fixed-rate agency and other highly rated debentures and agency CMBS. To hedge the interest rate risk associated with these fixed-rate investment securities, the Bank has entered into fixed-for-floating interest rate exchange agreements, which are designated as fair value hedges.

The majority of the Bank's trading securities are fixed-rate U.S. Treasury Notes. To convert most of these fixed-rate investment securities to a short-term floating rate, the Bank entered into fixed-for-floating interest rate exchange agreements that are primarily indexed to the overnight index swap ("OIS") rate. These derivatives are treated as economic hedges.

The interest rate swaps and swaptions that are used by the Bank to hedge the risks associated with its mortgage loan portfolio are treated as economic hedges.

Advances — The Bank issues both fixed-rate and variable-rate advances. When appropriate, the Bank uses interest rate exchange agreements to adjust the interest rate sensitivity of its fixed-rate advances to approximate more closely the interest rate sensitivity of its liabilities. With issuances of putable advances, the Bank purchases from the member a put option that enables

the Bank to terminate a fixed-rate advance on specified future dates. This embedded option is clearly and closely related to the host advance contract. The Bank typically hedges a putable advance by entering into a cancelable interest rate exchange agreement where the Bank pays a fixed-rate coupon and receives a variable-rate coupon, and sells an option to cancel the swap to the swap counterparty. This type of hedge is treated as a fair value hedge. The swap counterparty can cancel the interest rate exchange agreement on the call date and the Bank can cancel the putable advance and offer, subject to certain conditions, replacement funding at prevailing market rates.

From time to time, a small portion of the Bank's variable-rate advances are subject to interest rate caps that would limit the variable-rate coupons if short-term interest rates rise above a predetermined level. To hedge the cap risk embedded in these advances, the Bank will generally enter into interest rate cap agreements. This type of hedge is treated as a fair value hedge.

The Bank may hedge a firm commitment for a forward-starting advance through the use of an interest rate swap. In this case, the swap will function as the hedging instrument for both the firm commitment and the subsequent advance. The carrying value of the firm commitment will be included in the basis of the advance at the time the commitment is terminated and the advance is issued. The basis adjustment will then be amortized into interest income over the life of the advance.

The Bank enters into optional advance commitments with its members. In an optional advance commitment, the Bank sells an option to the member that provides the member with the right to increase the amount of an existing advance at a specified fixed rate and term on a specified future date, provided the member has satisfied all of the customary requirements for such advance. This embedded option is clearly and closely related to the host contract. The Bank may hedge an optional advance commitment through the use of an interest rate swaption. In this case, the swaption will function as the hedging instrument for both the commitment and, if the option is exercised by the member, the subsequent advance. These swaptions are treated as fair value hedges.

Consolidated Obligations — While consolidated obligations are the joint and several obligations of the FHLBanks, each FHLBank is the primary obligor for the consolidated obligations it has issued or assumed from another FHLBank. The Bank generally enters into derivative contracts to hedge the interest rate risk associated with its specific debt issuances.

To manage the interest rate risk of certain of its consolidated obligations, the Bank will match the cash outflow on a consolidated obligation with the cash inflow of an interest rate exchange agreement. With issuances of fixed-rate consolidated obligation bonds, the Bank typically enters into a matching interest rate exchange agreement in which the counterparty pays fixed cash flows to the Bank that are designed to mirror in timing and amount the cash outflows the Bank pays on the consolidated obligation. In this transaction, the Bank pays a variable cash flow that closely matches the interest payments it receives on short-term or variable-rate assets, typically one-month or three-month LIBOR. These transactions are treated as fair value hedges. On occasion, the Bank may enter into fixed-for-floating interest rate exchange agreements to hedge the interest rate risk associated with certain of its consolidated obligation discount notes. The derivatives associated with the Bank's fair value discount note hedging are indexed to the OIS rate and are treated as economic hedges. The Bank may also use interest rate exchange agreements to convert variable-rate consolidated obligation bonds from one index rate (e.g., the daily effective federal funds rate) to another index rate (e.g., one-month or three-month LIBOR). These transactions are treated as economic hedges.

The Bank has not issued consolidated obligations denominated in currencies other than U.S. dollars.

Forecasted Issuances of Consolidated Obligations — The Bank uses derivatives to hedge the variability of cash flows over a specified period of time as a result of the forecasted issuances and maturities of short-term, fixed-rate instruments, such as three-month consolidated obligation discount notes. Although each short-term consolidated obligation discount note has a fixed rate of interest, a portfolio of rolling consolidated obligation discount notes effectively has a variable interest rate. The variable cash flows associated with these liabilities are converted to fixed-rate cash flows by entering into receive-variable, pay-fixed interest rate swaps. The maturity dates of the cash flow streams are closely matched to the interest rate reset dates of the derivatives. These derivatives are treated as cash flow hedges.

Balance Sheet Management — From time to time, the Bank may enter into interest rate basis swaps to reduce its exposure to changing spreads between one-month and three-month LIBOR. In addition, to reduce its exposure to reset risk, the Bank may occasionally enter into forward rate agreements. These derivatives are treated as economic hedges.

Intermediation — The Bank offers interest rate swaps, caps and floors to its members to assist them in meeting their hedging needs. In these transactions, the Bank acts as an intermediary for its members by entering into an interest rate exchange agreement with a member and then entering into an offsetting interest rate exchange agreement with one of the Bank's approved derivative counterparties. All interest rate exchange agreements related to the Bank's intermediary activities with its members are accounted for as economic hedges.

Other — From time to time, the Bank may enter into derivatives to hedge risks to its earnings that are not directly linked to specific assets, liabilities or forecasted transactions. These derivatives are treated as economic hedges.

Accounting for Derivatives and Hedging Activities. The Bank accounts for derivatives and hedging activities in accordance with the guidance in Topic 815 of the FASB's Accounting Standards Codification ("ASC") entitled "*Derivatives and Hedging"* ("ASC 815"). All derivatives are recognized on the statements of condition at their fair values, including accrued interest receivable and payable. For purposes of reporting derivative assets and derivative liabilities, the Bank offsets the fair value amounts recognized for derivative instruments (including the right to reclaim cash collateral and the obligation to return cash collateral) where a legally enforceable right of setoff exists.

Changes in the fair value of a derivative that is effective as — and that is designated and qualifies as — a fair value hedge, along with changes in the fair value of the hedged asset or liability that are attributable to the hedged risk (including changes that reflect gains or losses on firm commitments), are recorded in current period earnings. The application of hedge accounting generally requires the Bank to evaluate the effectiveness of the fair value hedging relationships on an ongoing basis and to calculate the changes in fair value of the derivatives and related hedged items independently. This is commonly known as the "long-haul" method of hedge accounting. Transactions that meet more stringent criteria qualify for the "shortcut" method of hedge accounting in which an assumption can be made that the change in fair value of a hedged item exactly offsets the change in value of the related derivative. The Bank considers hedges of committed advances to be eligible for the shortcut method of accounting as long as the settlement of the committed advance occurs within the shortest period possible for that type of instrument based on market settlement conventions, the fair value of the swap is zero at the inception of the hedging relationship, and the transaction meets all of the other criteria for shortcut accounting specified in ASC 815. The Bank has defined the market settlement convention to be five business days or less for advances.

Fair value hedge ineffectiveness (which represents the amount by which the change in the fair value of the derivative differs from the change in the fair value of the hedged item attributable to the hedged risk) and the net interest income/expense associated with that derivative are recorded in the same line item as the earnings effect of the hedged item (that is, interest income on advances, interest income on available-for-sale securities or interest expense on consolidated obligation bonds, as appropriate).

Changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge are recorded in accumulated other comprehensive income ("AOCI") until earnings are affected by the variability of the cash flows of the hedged transaction, at which time these amounts are reclassified from AOCI to the income statement line where the earnings effect of the hedged item is reported (e.g., interest expense on consolidated obligation discount notes).

An economic hedge is defined as a derivative hedging specific or non-specific assets or liabilities that does not qualify or was not designated for hedge accounting under ASC 815, but is an acceptable hedging strategy under the Bank's Enterprise Market Risk Management Policy. These hedging strategies also comply with Finance Agency regulatory requirements prohibiting speculative derivative transactions. An economic hedge by definition introduces the potential for earnings variability as changes in the fair value of a derivative designated as an economic hedge are recorded in current period earnings with no offsetting fair value adjustment to an asset or liability. Both the net interest income/expense and the fair value changes associated with derivatives in economic hedging relationships are recorded in other income (loss) as "net gains (losses) on derivatives and hedging activities."

The Bank records the changes in fair value of all derivatives (and, in the case of fair value hedges, the hedged items) beginning on the trade date.

Cash flows associated with all derivatives are reported as cash flows from operating activities in the statements of cash flows, unless the derivative contains an other-than-insignificant financing element, in which case its cash flows are reported as cash flows from financing activities.

The Bank may issue debt, make advances, or purchase financial instruments in which a derivative instrument is "embedded" and the financial instrument that embodies the embedded derivative instrument is not remeasured at fair value with changes in fair value reported in earnings as they occur. Upon execution of these transactions, the Bank assesses whether the economic characteristics of the embedded derivative are clearly and closely related to the economic characteristics of the remaining component of the financial instrument (i.e., the host contract) and whether a separate, non-embedded instrument with the same terms as the embedded instrument would meet the definition of a derivative instrument. When it is determined that (1) the embedded derivative possesses economic characteristics that are not clearly and closely related to the economic characteristics of the host contract and (2) a separate, stand-alone instrument with the same terms would qualify as a derivative instrument, the embedded derivative is separated from the host contract, carried at fair value, and designated as either (1) a hedging instrument in a fair value hedge or (2) a stand-alone derivative instrument pursuant to an economic hedge. However, if the entire contract were to be measured at fair value, with changes in fair value reported in current earnings, or if the Bank could not reliably identify and measure the embedded derivative for purposes of separating that derivative from its host contract, the entire contract would be carried on the statement of condition at fair value and no portion of the contract would be separately accounted for as a derivative.

The Bank discontinues hedge accounting prospectively when: (1) management determines that the derivative is no longer effective in offsetting changes in the fair value or cash flows of a hedged item; (2) the derivative and/or the hedged item expires or is sold, terminated, or exercised; (3) it is no longer probable that a forecasted transaction will occur within the originally specified time frame; (4) a hedged firm commitment no longer meets the definition of a firm commitment; or (5) management determines that designating the derivative as a hedging instrument in accordance with ASC 815 is no longer appropriate.

In all cases in which hedge accounting is discontinued and the derivative remains outstanding, the Bank will carry the derivative at its fair value on the statement of condition, recognizing any additional changes in the fair value of the derivative in current period earnings as a component of "net gains (losses) on derivatives and hedging activities."

When fair value hedge accounting for a specific derivative is discontinued due to the Bank's determination that such derivative no longer qualifies for hedge accounting treatment or because the derivative is terminated, the Bank will cease to adjust the hedged asset or liability for changes in fair value and amortize the cumulative basis adjustment on the formerly hedged item into earnings over its remaining term using the level-yield method. The amortization is recorded in the same line item as the earnings effect of the formerly hedged item.

When hedge accounting is discontinued because the hedged item no longer meets the definition of a firm commitment, the Bank continues to carry the derivative on the statement of condition at its fair value, removing from the statement of condition any asset or liability that was recorded to recognize the firm commitment and recording it as a gain or loss in current period earnings.

When cash flow hedge accounting for a specific derivative is discontinued due to the Bank's determination that such derivative no longer qualifies for hedge accounting treatment or because the derivative is terminated, the Bank will reclassify the cumulative fair value gains or losses recorded in AOCI as of the discontinuance date from AOCI into earnings when earnings are affected by the original forecasted transaction. If the Bank expects at any time that continued reporting of a net loss in AOCI would lead to recognizing a net loss on the combination of the hedging instrument and hedged transaction in one or more future periods, the amount that is not expected to be recovered is immediately reclassified to earnings. These items are recorded in the same income statement line where the earnings effect of the hedged item is reported.

In cases where the cash flow hedge is discontinued because the forecasted transaction is no longer probable (i.e., the forecasted transaction will not occur in the originally expected period or within an additional two-month period of time thereafter), any fair value gains or losses recorded in AOCI as of the determination date are immediately reclassified to earnings as a component of "net gains (losses) on derivatives and hedging activities."

Impact of Derivatives and Hedging Activities. The following table summarizes the notional balances and estimated fair values of the Bank's outstanding derivatives (inclusive of variation margin on daily settled contracts) and the amounts offset against those values in the statement of condition at March 31, 2020 and December 31, 2019 (in thousands).

	March 31, 2020			December 31, 2019		
		Estimated Fair Value			Estimated Fair Value	
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as hedging instruments under ASC 815						
Interest rate swaps						
Advances [1]	$ 15,042,449	$ 9,175	$ 579,107	$ 10,102,510	$ 5,117	$ 134,520
Available-for-sale securities [1]	16,040,335	43,763	37,568	16,114,507	28,049	19,718
Consolidated obligation bonds [1]	17,801,530	71,142	1,585	19,861,615	14,000	13,619
Consolidated obligation discount notes [2]	1,066,000	4,094	—	1,043,000	2,503	—
Total derivatives designated as hedging instruments under ASC 815	49,950,314	128,174	618,260	47,121,632	49,669	167,857
Derivatives not designated as hedging instruments under ASC 815						
Interest rate swaps						
Advances	255,000	—	7,806	255,000	25	16
Available-for-sale securities	3,140	6	—	3,144	4	—
Mortgage loans held for portfolio	328,350	1,160	1,200	339,600	343	1,118
Consolidated obligation discount notes	—	—	—	1,000,000	—	—
Trading securities	3,700,000	45	343	3,700,000	171	8
Intermediary transactions	426,868	8,371	4,078	842,036	5,312	2,355
Other	925,000	341	1,384	925,000	328	1,069
Interest rate swaptions related to mortgage loans held for portfolio	205,000	8,000	—	145,000	381	—
Mortgage delivery commitments	56,094	241	—	31,765	94	—
Interest rate caps						
Held-to-maturity securities	500,000	2	—	500,000	—	—
Intermediary transactions	80,000	14	14	80,000	12	12
Total derivatives not designated as hedging instruments under ASC 815	6,479,452	18,180	14,825	7,821,545	6,670	4,578
Total derivatives before collateral and netting adjustments	$ 56,429,766	146,354	633,085	$ 54,943,177	56,339	172,435
Cash collateral and related accrued interest		65,821	(563,758)		(3,440)	(156,903)
Cash received or remitted in excess of variation margin requirements		334	—		(5)	(54)
Netting adjustments		(67,257)	(67,257)		(11,623)	(11,623)
Total collateral and netting adjustments [3]		(1,102)	(631,015)		(15,068)	(168,580)
Net derivative balances reported in statements of condition		$ 145,252	$ 2,070		$ 41,271	$ 3,855

(1) Derivatives designated as fair hedges.

(2) Derivatives designated as cash flow hedges.

(3) Amounts represent the effect of legally enforceable master netting agreements or other legally enforceable arrangements between the Bank and its derivative counterparties that allow the Bank to offset positive and negative positions as well as any cash collateral held or placed with those same counterparties.

The following table presents the components of net gains (losses) on qualifying fair value and cash flow hedging relationships for the three months ended March 31, 2020 and 2019 (in thousands).

	Interest Income (Expense)				
	Advances	Available-for-Sale Securities	Consolidated Obligation Bonds	Consolidated Obligation Discount Notes	Other Comprehensive Income (Loss)
Three Months Ended March, 2020					
Total amount of the financial statement line item	$ 160,913	$ 64,965	$ (153,944)	$ (114,782)	$ (350,009)
Gains (losses) on fair value hedging relationships included in the financial statement line item					
Interest rate contracts					
Derivatives	$ (543,767)	$ (1,125,969)	$ 150,663	$ —	$ —
Hedged items	550,765	1,081,351	(138,260)	—	—
Net gains (losses) on fair value hedging relationships	$ 6,998	$ (44,618)	$ 12,403	$ —	$ —
Gains (losses) on cash flow hedging relationships included in the financial statement line item					
Interest rate contracts					
Reclassified from AOCI into interest expense	$ —	$ —	$ —	$ (1,016)	$ 1,016
Recognized in OCI	—	—	—	—	(95,733)
Net gains (losses) on cash flow hedging relationships	$ —	$ —	$ —	$ (1,016)	$ (94,717)
Three Months Ended March 31, 2019					
Total amount of the financial statement line item	$ 237,864	$ 119,008	$ (190,768)	$ (196,251)	$ 31,201
Gains (losses) on fair value hedging relationships included in the financial statement line item					
Interest rate contracts					
Derivatives	$ (35,083)	$ (283,861)	$ 93,225	$ —	$ —
Hedged items	48,096	298,786	(112,240)	—	—
Net gains (losses) on fair value hedging relationships	$ 13,013	$ 14,925	$ (19,015)	$ —	$ —
Gains (losses) on cash flow hedging relationships included in the financial statement line item					
Interest rate contracts					
Reclassified from AOCI into interest expense	$ —	$ —	$ —	$ 807	$ (807)
Recognized in OCI	—	—	—	—	(20,390)
Net gains (losses) on cash flow hedging relationships	$ —	$ —	$ —	$ 807	$ (21,197)

For the three months ended March 31, 2020 and 2019, there were no amounts reclassified from AOCI into earnings as a result of the discontinuance of cash flow hedges because the original forecasted transactions occurred by the end of the originally specified time periods or within two-month periods thereafter. At March 31, 2020, $17,470,000 of deferred net losses on derivative instruments in AOCI are expected to be reclassified to earnings during the next 12 months. At March 31, 2020, the maximum length of time over which the Bank is hedging its exposure to the variability in future cash flows for forecasted transactions is 10 years.

The following table presents the cumulative basis adjustments on hedged items either designated or previously designated as fair value hedges and the related amortized cost of those items as of March 31, 2020 (in thousands).

Line Item in Statement of Condition of Hedged Item	Amortized Cost of Hedged Asset/ (Liability) [(1)]	Basis Adjustments for Active Hedging Relationships Included in Amortized Cost	Basis Adjustments for Discontinued Hedging Relationships Included in Amortized Cost	Total Fair Value Hedging Basis Adjustments [(2)]
March 31, 2020				
Advances	$ 15,734,270	$ 726,433	$ 4,679	$ 731,112
Available-for-sale securities	17,620,511	1,428,161	(1,056)	1,427,105
Consolidated obligation bonds	(18,543,411)	(202,380)	(1,560)	(203,940)
December 31, 2019				
Advances	$ 10,283,221	$ 175,343	$ 4,978	$ 180,321
Available-for-sale securities	16,621,667	346,741	(985)	345,756
Consolidated obligation bonds	(20,310,223)	(64,027)	(1,654)	(65,681)

(1) Reflects the amortized cost of hedged items in active or discontinued fair value hedging relationships, which includes fair value hedging basis adjustments.

(2) Reflects the cumulative life-to-date unamortized hedging gains (losses) on the hedged items.

The following table presents the components of net gains (losses) on derivatives and hedging activities that are reported in other income (loss) for the three months ended March 31, 2020 and 2019 (in thousands).

	Gain (Loss) Recognized in Other Income (Loss) for the Three Months Ended March 31,	
	2020	2019
Derivatives not designated as hedging instruments under ASC 815		
Interest rate swaps	$ (7,066)	$ 8,565
Net interest expense on interest rate swaps	(2,884)	(1,023)
Interest rate swaptions	6,826	(229)
Interest rate caps and floors	2	85
Mortgage delivery commitments	2,385	1,261
Total net gain (loss) related to derivatives not designated as hedging instruments under ASC 815	(737)	8,659
Price alignment amount on variation margin for daily settled derivative contracts[(1)]	20	107
Net gains (losses) on derivatives and hedging activities reported in other income (loss)	$ (717)	$ 8,766

(1) Reflects the price alignment amounts on variation margin for daily settled derivative contracts that are not designated as hedging instruments under ASC 815. The price alignment amounts on variation margin for daily settled derivative contracts that are designated as hedging instruments under ASC 815 are recorded in the same line item as the earnings effect of the hedged item.

Credit Risk Related to Derivatives. The Bank is subject to credit risk due to the risk of nonperformance by counterparties to its derivative agreements. The Bank manages derivative counterparty credit risk through the use of master netting agreements or other similar collateral exchange arrangements, credit analysis, and adherence to the requirements set forth in the Bank's Enterprise Market Risk Management Policy, Enterprise Credit Risk Management Policy, and Finance Agency regulations. The majority of the Bank's derivative contracts have been cleared through third-party central clearinghouses (as of March 31, 2020, the notional balance of cleared transactions outstanding totaled $33.9 billion). With cleared transactions, the Bank is exposed to credit risk in the event that the clearinghouse or the clearing member fails to meet its obligations to the Bank. The remainder of the Bank's derivative contracts have been transacted bilaterally with large financial institutions under master netting agreements or, to a much lesser extent, with member institutions (as of March 31, 2020, the notional balance of outstanding transactions with non-member bilateral counterparties and member counterparties totaled $22.2 billion and $0.3 billion, respectively). Some of these institutions (or their affiliates) buy, sell, and distribute consolidated obligations.

The notional amount of the Bank's interest rate exchange agreements does not reflect its credit risk exposure, which is much less than the notional amount. The Bank's net credit risk exposure is based on the current estimated cost, on a present value basis, of replacing at current market rates all interest rate exchange agreements with individual counterparties, if those counterparties

were to default, after taking into account the value of any cash and/or securities collateral held or remitted by the Bank. For counterparties with which the Bank is in a net gain position, the Bank has credit exposure when the collateral it is holding (if any) has a value less than the amount of the gain. For counterparties with which the Bank is in a net loss position, the Bank has credit exposure when it has delivered collateral with a value greater than the amount of the loss position. The net exposure on derivative agreements is presented in Note 12. Based on the netting provisions and collateral requirements associated with its derivative agreements and the creditworthiness of its derivative counterparties, Bank management does not currently anticipate any credit losses on its derivative agreements.

Note 14—Capital

At all times during the three months ended March 31, 2020, the Bank was in compliance with all applicable statutory and regulatory capital requirements. The following table summarizes the Bank's compliance with those capital requirements as of March 31, 2020 and December 31, 2019 (dollars in thousands):

	March 31, 2020		December 31, 2019	
	Required	Actual	Required	Actual
Regulatory capital requirements:				
Risk-based capital	$ 924,610	$ 3,973,994	$ 881,970	$ 3,706,059
Total capital	$ 3,352,298	$ 3,973,994	$ 3,015,264	$ 3,706,059
Total capital-to-assets ratio	4.00%	4.74%	4.00%	4.92%
Leverage capital	$ 4,190,373	$ 5,960,991	$ 3,769,080	$ 5,559,088
Leverage capital-to-assets ratio	5.00%	7.11%	5.00%	7.37%

Beginning in February 2020, the Bank must also maintain a minimum capital stock-to-assets ratio of 2.0 percent, as measured on a daily average basis at each month end. The Bank was in compliance with this requirement at each of the applicable month ends in 2020.

Members are required to maintain an investment in Class B Capital Stock equal to the sum of a membership investment requirement and an activity-based investment requirement. The membership investment requirement is currently 0.04 percent of each member's total assets as of December 31, 2019, subject to a minimum of $1,000 and a maximum of $7,000,000. Through March 31, 2020, the activity-based investment requirement was 4.1 percent of outstanding advances, except as described below.

On September 21, 2015, the Bank announced a Board-authorized reduction in the activity-based stock investment requirement from 4.1 percent to 2.0 percent for certain advances that were funded during the period from October 21, 2015 through December 31, 2015. To be eligible for the reduced activity-based investment requirement, advances funded during this period had to have a minimum maturity of one year or greater, among other things. The standard activity-based stock investment requirement of 4.1 percent continued to apply to all other advances that were funded during the period from October 21, 2015 through December 31, 2015.

The Bank generally repurchases surplus stock quarterly. For the repurchase that occurred during the three months ended March 31, 2020, surplus stock was defined as the amount of stock held by a member shareholder in excess of 125 percent of the shareholder's minimum investment requirement. For that repurchase, which occurred on March 27, 2020, a member shareholder's surplus stock was not repurchased if: (1) the amount of that shareholder's surplus stock was $2,500,000 or less, (2) the shareholder elected to opt-out of the repurchase, or (3) the shareholder was on restricted collateral status (subject to certain exceptions). On March 27, 2020, the Bank repurchased surplus stock totaling $139,080,000, none of which was classified as mandatorily redeemable capital stock at that date. From time to time, the Bank may modify the definition of surplus stock or the timing and/or frequency of surplus stock repurchases.

On March 27, 2020, the Bank also repurchased all excess stock held by non-member shareholders as of that date. This excess stock, all of which was classified as mandatorily redeemable capital stock at that date, totaled $2,600.

Note 15—Employee Retirement Plans

The Bank sponsors a retirement benefits program that includes health care and life insurance benefits for eligible retirees. Components of net periodic benefit cost (credit) related to this program for the three months ended March 31, 2020 and 2019 were as follows (in thousands):

	Three Months Ended March 31,	
	2020	**2019**
Service cost	$ 9	$ 7
Interest cost	5	5
Amortization of prior service cost	5	5
Amortization of net actuarial gain	(20)	(23)
Net periodic benefit credit	$ (1)	$ (6)

The Bank reports the service cost component of its net periodic postretirement benefit cost (credit) in compensation and benefits expense and the other components of net periodic postretirement benefit cost (credit) in "other, net" in the other income (loss) section of the statement of income.

Note 16—Estimated Fair Values

Fair value is defined under U.S. GAAP 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. A fair value measurement assumes that the transaction to sell the asset or transfer the liability occurs in the principal market for the asset or liability or, in the absence of a principal market, the most advantageous market for the asset or liability. U.S. 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. U.S. GAAP also requires an entity to disclose the level within the fair value hierarchy in which each measurement is classified. The fair value hierarchy prioritizes the inputs used to measure fair value into three broad levels:

Level 1 Inputs — Quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity can access at the measurement date.

Level 2 Inputs — Inputs other than quoted prices included within Level 1 that are observable 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 or in which little information is released publicly; (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 (e.g., implied spreads).

Level 3 Inputs — Unobservable inputs for the asset or liability that are supported by little or no market activity. None of the Bank's assets or liabilities that are recorded at fair value on a recurring basis were measured using significant Level 3 inputs.

For financial instruments carried at fair value, the Bank 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 assets or liabilities. For the three months ended March 31, 2020 and 2019, the Bank did not reclassify any fair value measurements.

The following estimated fair value amounts have been determined by the Bank using available market information and management's best judgment of appropriate valuation methods. These estimates are based on pertinent information available to the Bank as of March 31, 2020 and December 31, 2019. Although management uses its best judgment in estimating the fair value of these financial instruments, there are inherent limitations in any estimation technique or valuation methodology. For example, because an active secondary market does not exist for many of the Bank's financial instruments (e.g., advances, non-agency RMBS and mortgage loans held for portfolio), in certain cases their fair values are not subject to precise quantification or verification. Therefore, the estimated fair values presented below in the Fair Value Summary Tables may not be indicative of the amounts that would have been realized in market transactions at the reporting dates. Further, the fair values do not represent an estimate of the overall market value of the Bank as a going concern, which would take into account future business opportunities.

The valuation techniques used to measure the fair values of the Bank's financial instruments that are measured at fair value on the statement of condition are described below.

Trading and available-for-sale securities. To value its U.S. Treasury Notes and U.S. Treasury Bills classified as trading securities and all of its available-for-sale securities, the Bank obtains prices from three designated third-party pricing vendors when available.

The pricing vendors use various proprietary models to price these securities. The inputs to those models are derived from various sources including, but not limited to, benchmark yields, reported trades, dealer estimates, issuer spreads, benchmark securities, bids, offers and other market-related data. Because many securities do not trade on a daily basis, the pricing vendors use available information as applicable such as benchmark curves, benchmarking of like securities, sector groupings and matrix pricing to determine the prices for individual securities. Each pricing vendor has an established challenge process in place for all security valuations, which facilitates resolution of potentially erroneous prices identified by the Bank.

A "median" price is first established for each security using a formula that is based upon the number of prices received. If three prices are received, the middle price is the median price; if two prices are received, the average of the two prices is the median price; and if one price is received, it is the median price (and also the final price) subject to some type of validation similar to the evaluation of outliers described below. All prices that are within a specified tolerance threshold of the median price are included in the “cluster” of prices that are averaged to compute a “default” price. All prices that are outside the threshold (“outliers”) are subject to further analysis (including, but not limited to, comparison to prices provided by an additional third-party valuation service, prices for similar securities, and/or non-binding dealer estimates) to determine if an outlier is a better estimate of fair value. If an outlier (or some other price identified in the analysis) is determined to be a better estimate of fair value, then the outlier (or the other price, as appropriate) is used as the final price rather than the default price. If, on the other hand, the analysis confirms that an outlier (or outliers) is (are) in fact not representative of fair value and the default price is the best estimate, then the default price is used as the final price. In all cases, the final price is used to determine the fair value of the security.

If all prices received for a security are outside the tolerance threshold level of the median price, then there is no default price, and the final price is determined by an evaluation of all outlier prices as described above.

As of March 31, 2020 and December 31, 2019, three vendor prices were received for substantially all of the Bank’s trading and available-for-sale securities and the final prices for substantially all of those securities were computed by averaging the three prices. Based on the Bank's understanding of the pricing methods employed by the third-party pricing vendors and the relative lack of dispersion among the vendor prices (or, in those instances in which there were outliers, the Bank's additional analyses), the Bank believes its final prices result in reasonable estimates of the fair values and that the fair value measurements are classified appropriately in the fair value hierarchy.

Derivative assets/liabilities. The fair values of the Bank’s interest rate swap and swaption agreements are estimated using a pricing model with inputs that are observable in the market (e.g., the relevant interest rate curves (that is, the relevant LIBOR swap curve or the OIS curve and, for purposes of discounting, the OIS curve) and, for agreements containing options, swaption volatility). The fair values of the Bank’s interest rate caps and floors are also estimated using a pricing model with inputs that are observable in the market (that is, cap/floor volatility, the relevant LIBOR swap curve and, for purposes of discounting, the OIS curve).

As the collateral (or variation margin in the case of daily settled contracts) and netting provisions of the Bank’s arrangements with its derivative counterparties significantly reduce the risk from nonperformance (see Note 12), the Bank does not consider its own nonperformance risk or the nonperformance risk associated with each of its counterparties to be a significant factor in the valuation of its derivative assets and liabilities. The Bank compares the fair values obtained from its pricing model to clearinghouse valuations (in the case of cleared derivatives) and non-binding dealer estimates (in the case of bilateral derivatives) and may also compare its fair values to those of similar instruments to ensure that the fair values are reasonable.

The fair values of the Bank’s derivative assets and liabilities include accrued interest receivable/payable and cash collateral remitted to/received from counterparties; the estimated fair values of the accrued interest receivable/payable and cash collateral approximate their carrying values due to their short-term nature. The fair values of the Bank's bilateral derivatives are netted by counterparty pursuant to the provisions of the credit support annexes to the Bank’s master netting agreements with its non-member bilateral derivative counterparties. The Bank's cleared derivative transactions with each clearing member of each clearinghouse are netted pursuant to the Bank's arrangements with those parties. In each case, if the netted amounts are positive, they are classified as an asset and, if negative, as a liability.

The Bank estimates the fair values of mortgage delivery commitments based upon the prices for to-be-announced ("TBA") securities, which represent quoted market prices for forward-settling agency MBS. The prices are adjusted for differences in coupon, cost to carry, vintage, remittance type and product type between the Bank's mortgage loan commitments and the referenced TBA MBS.

Other assets held at fair value. To value its mutual fund investments included in other assets, the Bank obtains quoted prices for the mutual funds.

The following table presents the carrying values and estimated fair values of the Bank's financial instruments at March 31, 2020 (in thousands), as well as the level within the fair value hierarchy in which the measurements are classified. Financial assets and liabilities are classified in their entirety based on the lowest level input that is significant to the fair value estimate.

FAIR VALUE SUMMARY TABLE

		Estimated Fair Value				
Financial Instruments	**Carrying Value**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Netting Adjustment[4]**
Assets:						
Cash and due from banks	$ 1,217,250	$ 1,217,250	$ 1,217,250	$ —	$ —	$ —
Interest-bearing deposits	1,769,990	1,769,990	—	1,769,990	—	—
Federal funds sold	6,035,000	6,035,000	—	6,035,000	—	—
Trading securities [1]	4,570,279	4,570,279	—	4,570,279	—	—
Available-for-sale securities [1]	17,509,595	17,509,595	—	17,509,595	—	—
Held-to-maturity securities	1,150,122	1,147,002	—	1,091,723 [2]	55,279 [3]	—
Advances	46,922,518	46,760,088	—	46,760,088	—	—
Mortgage loans held for portfolio, net	4,282,180	4,407,320	—	4,407,320	—	—
Accrued interest receivable	154,497	154,497	—	154,497	—	—
Derivative assets [1]	145,252	145,252	—	146,354	—	(1,102)
Other assets held at fair value [1]	11,735	11,735	11,735	—	—	—
Liabilities:						
Deposits	1,729,064	1,729,253	—	1,729,253	—	—
Consolidated obligations						
Discount notes	43,953,217	43,991,414	—	43,991,414	—	—
Bonds	34,186,393	34,249,461	—	34,249,461	—	—
Mandatorily redeemable capital stock	6,779	6,779	6,779	—	—	—
Accrued interest payable	122,425	122,425	—	122,425	—	—
Derivative liabilities [1]	2,070	2,070	—	633,085	—	(631,015)

(1) Financial instruments measured at fair value on a recurring basis as of March 31, 2020.

(2) Consists of the Bank's holdings of U.S. government-guaranteed debentures, state housing agency debentures and GSE RMBS.

(3) Consists of the Bank's holdings of non-agency RMBS.

(4) Amounts represent the effect of legally enforceable master netting agreements or other legally enforceable arrangements between the Bank and its derivative counterparties that allow the Bank to offset positive and negative positions (inclusive of variation margin for daily settled contracts) as well as any cash collateral held or placed with those same counterparties.

The following table presents the carrying values and estimated fair values of the Bank's financial instruments at December 31, 2019 (in thousands), as well as the level within the fair value hierarchy in which the measurements are classified. Financial assets and liabilities are classified in their entirety based on the lowest level input that is significant to the fair value estimate.

FAIR VALUE SUMMARY TABLE

		Estimated Fair Value				
Financial Instruments	**Carrying Value**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Netting Adjustment[4]**
Assets:						
Cash and due from banks	$ 20,551	$ 20,551	$ 20,551	$ —	$ —	$ —
Interest-bearing deposits	1,670,249	1,670,249	—	1,670,249	—	—
Securities purchased under agreements to resell	4,310,000	4,310,000	—	4,310,000	—	—
Federal funds sold	4,505,000	4,505,000	—	4,505,000	—	—
Trading securities [1]	5,460,136	5,460,136	—	5,460,136	—	—
Available-for-sale securities [1]	16,766,500	16,766,500	—	16,766,500	—	—
Held-to-maturity securities	1,206,170	1,215,580	—	1,150,175 [2]	65,405 [3]	—
Advances	37,117,455	37,092,230	—	37,092,230	—	—
Mortgage loans held for portfolio, net	4,075,464	4,109,758	—	4,109,758	—	—
Accrued interest receivable	154,218	154,218	—	154,218	—	—
Derivative assets [1]	41,271	41,271	—	56,339	—	(15,068)
Other assets held at fair value [1]	14,222	14,222	14,222	—	—	—
Liabilities:						
Deposits	1,286,219	1,286,258	—	1,286,258	—	—
Consolidated obligations						
Discount notes	34,327,886	34,325,476	—	34,325,476	—	—
Bonds	35,745,827	35,757,691	—	35,757,691	—	—
Mandatorily redeemable capital stock	7,140	7,140	7,140	—	—	—
Accrued interest payable	115,350	115,350	—	115,350	—	—
Derivative liabilities [1]	3,855	3,855	—	172,435	—	(168,580)

(1) Financial instruments measured at fair value on a recurring basis as of December 31, 2019.

(2) Consists of the Bank's holdings of U.S. government-guaranteed debentures, state housing agency debentures and GSE RMBS.

(3) Consists of the Bank's holdings of non-agency RMBS.

(4) Amounts represent the effect of legally enforceable master netting agreements or other legally enforceable arrangements between the Bank and its derivative counterparties that allow the Bank to offset positive and negative positions (inclusive of variation margin for daily settled contracts) as well as any cash collateral held or placed with those same counterparties.

Note 17—Commitments and Contingencies

Joint and several liability. The Bank is jointly and severally liable with the other 10 FHLBanks for the payment of principal and interest on all of the consolidated obligations issued by the FHLBanks. At March 31, 2020, the par amount of the other 10 FHLBanks' outstanding consolidated obligations was approximately $1.097 trillion. The Finance Agency, in its discretion, may require any FHLBank to make principal or interest payments due on any consolidated obligation, regardless of whether there has been a default by a FHLBank having primary liability. To the extent that a FHLBank makes any consolidated obligation payment on behalf of another FHLBank, the paying FHLBank is entitled to reimbursement from the FHLBank with primary liability. However, if the Finance Agency determines that the primary obligor is unable to satisfy its obligations, then the Finance Agency may allocate the outstanding liability among the remaining FHLBanks on a pro rata basis in proportion to each FHLBank's participation in all consolidated obligations outstanding, or on any other basis that the Finance Agency may determine. No FHLBank has ever failed to make any payment on a consolidated obligation for which it was the primary

obligor; as a result, the regulatory provisions for directing other FHLBanks to make payments on behalf of another FHLBank or allocating the liability among other FHLBanks have never been invoked. If the Bank expected that it would be required to pay any amounts on behalf of its co-obligors under its joint and several liability, the Bank would charge to income the amount of the expected payment. Based upon the creditworthiness of the other FHLBanks, the Bank currently believes that the likelihood that it would have to pay any amounts beyond those for which it is primarily liable is remote.

Other commitments and contingencies. At March 31, 2020 and December 31, 2019, the Bank had commitments to make additional advances totaling approximately $108,246,000 and $19,397,000, respectively. In addition, outstanding standby letters of credit totaled $22,371,324,000 and $21,781,829,000 at March 31, 2020 and December 31, 2019, respectively. Based on management's credit analyses and collateral requirements, the Bank does not deem it necessary to have any provision for credit losses on these letters of credit (see Note 9).

The Bank has entered into standby bond purchase agreements with a state housing finance agency within its district whereby, for a fee, the Bank agrees to serve as a standby liquidity provider. If required, the Bank will purchase and hold the housing finance agency's bonds until the designated marketing agent can find a suitable investor or the housing finance agency repurchases the bonds according to a schedule established by the agreement. Each standby bond purchase agreement includes the provisions under which the Bank would be required to purchase the bonds. At March 31, 2020 and December 31, 2019, the Bank had outstanding standby bond purchase agreements totaling $738,366,000 and $484,872,000, respectively. At March 31, 2020, standby bond purchase agreements totaling $185,882,000, $246,162,000, $52,828,000, and $253,494,000 expire in 2022, 2023, 2024, and 2025, respectively. The Bank was not required to purchase any bonds under these agreements during the three months ended March 31, 2020 or the year ended December 31, 2019.

At March 31, 2020 and December 31, 2019, the Bank had commitments to purchase conventional mortgage loans totaling $56,094,000 and $31,765,000, respectively, from certain of its members that participate in the MPF program.

At March 31, 2020, the Bank had commitments to issue $500,000,000 (par value) of consolidated obligation bonds, none of which were hedged. At December 31, 2019, the Bank had commitments to issue $115,000,000 (par value) of consolidated obligation bonds, all of which were hedged with interest rate swaps. In addition, at March 31, 2020 and December 31, 2019, the Bank had commitments to issue $78,566,000 and $679,510,000 (par value) of consolidated obligation discount notes, none of which were hedged.

The Bank has transacted interest rate exchange agreements with large financial institutions and third-party clearinghouses that are subject to collateral exchange arrangements. As of March 31, 2020 and December 31, 2019, the Bank had pledged cash collateral of $654,829,000 and $156,676,000, respectively, to those parties that had credit risk exposure to the Bank related to interest rate exchange agreements. The pledged cash collateral (i.e., interest-bearing deposit asset) is netted against derivative assets and liabilities in the statements of condition. In addition, as of March 31, 2020 and December 31, 2019, the Bank had pledged securities with carrying values (and fair values) of $888,729,000 and $842,256,000, respectively, to parties that had credit risk exposure to the Bank related to interest rate exchange agreements. The pledged securities may be rehypothecated and are not netted against derivative assets and liabilities in the statements of condition.

In the ordinary course of its business, the Bank is subject to the risk that litigation may arise. Currently, the Bank is not a party to any material pending legal proceedings.

Note 18— Transactions with Shareholders

Affiliates of two of the Bank's derivative counterparties (Citigroup and Wells Fargo) acquired member institutions on March 31, 2005 and October 1, 2006, respectively. Since the acquisitions were completed, the Bank has continued to enter into interest rate exchange agreements with Citigroup and Wells Fargo in the normal course of business and under the same terms and conditions as before. In addition, the Bank maintains interest-bearing deposits with affiliates of Citigroup and Wells Fargo. Effective October 1, 2006, Citigroup terminated the Ninth District charter of the affiliate that acquired the member institution and, as a result, an affiliate of Citigroup became a non-member shareholder of the Bank. The Bank repurchased all of the affiliate's outstanding capital stock during the three months ended June 30, 2019 and, accordingly, the affiliate of Citigroup is no longer a shareholder of the Bank.

Note 19 — Transactions with Other FHLBanks

Occasionally, the Bank loans (or borrows) short-term federal funds to (or from) other FHLBanks. The Bank did not loan any short-term federal funds to other FHLBanks during the three months ended March 31, 2020 or 2019.

During the three months ended March 31, 2020 and 2019, interest expense on borrowings from other FHLBanks totaled $442 and $669, respectively. The following table summarizes the Bank's borrowings from other FHLBanks during the three months ended March 31, 2020 and 2019 (in thousands).

	Three Months Ended March 31,	
	2020	2019
Balance at January 1,	$ —	$ —
Borrowings from FHLBank of Indianapolis	10,000	10,000
Repayments to FHLBank of Indianapolis	(10,000)	(10,000)
Balance at March 31,	$ —	$ —

Note 20 — Accumulated Other Comprehensive Income (Loss)

The following table presents the changes in the components of AOCI for the three months ended March 31, 2020 and 2019 (in thousands).

	Net Unrealized Gains (Losses) on Available-for-Sale Securities [(1)]	Net Unrealized Gains (Losses) on Cash Flow Hedges	Non-Credit Portion of Other-than-Temporary Impairment Losses on Held-to-Maturity Securities	Postretirement Benefits	Total AOCI
Three Months Ended March 31, 2020					
Balance at January 1, 2020	$ 144,833	$ (38,194)	$ (8,640)	$ 1,050	$ 99,049
Reclassifications from AOCI to net income					
Losses on cash flow hedges included in interest expense	—	1,016	—	—	1,016
Amortization of prior service costs and net actuarial gains recognized in other income (loss)	—	—	—	(15)	(15)
Other amounts of other comprehensive income (loss)					
Net unrealized losses on available-for-sale securities	(255,748)	—	—	—	(255,748)
Unrealized losses on cash flow hedges	—	(95,733)	—	—	(95,733)
Accretion of non-credit portion of other-than-temporary impairment losses to the carrying value of held-to-maturity securities	—	—	471	—	471
Total other comprehensive income (loss)	(255,748)	(94,717)	471	(15)	(350,009)
Balance at March 31, 2020	$ (110,915)	$ (132,911)	$ (8,169)	$ 1,035	$ (250,960)
Three Months Ended March 31, 2019					
Balance at January 1, 2019	$ 118,980	$ 18,412	$ (10,667)	$ 1,276	$ 128,001
Reclassifications from AOCI to net income					
Realized gains on sales of available-for-sale securities included in net income	(440)	—	—	—	(440)
Gains on cash flow hedges included in interest expense	—	(807)	—	—	(807)
Amortization of prior service costs and net actuarial gains recognized in other income (loss)	—	—	—	(18)	(18)
Other amounts of other comprehensive income (loss)					
Net unrealized gains on available-for-sale securities	52,263	—	—	—	52,263
Unrealized losses on cash flow hedges	—	(20,390)	—	—	(20,390)
Accretion of non-credit portion of other-than-temporary impairment losses to the carrying value of held-to-maturity securities	—	—	593	—	593
Total other comprehensive income (loss)	51,823	(21,197)	593	(18)	31,201
Balance at March 31, 2019	$ 170,803	$ (2,785)	$ (10,074)	$ 1,258	$ 159,202

[(1)] Net unrealized gains (losses) on available-for-sale securities are net of unrealized gains and losses relating to hedged interest rate risk included in net income.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of financial condition and results of operations should be read in conjunction with the financial statements and notes thereto included in "Item 1. Financial Statements."

Forward-Looking Information

This quarterly report contains forward-looking statements that reflect current beliefs and expectations of the Federal Home Loan Bank of Dallas (the "Bank") about its future results, performance, liquidity, financial condition, prospects and opportunities. These statements are identified by the use of forward-looking terminology, such as "anticipates," "plans," "believes," "could," "estimates," "may," "should," "would," "will," "might," "expects," "intends" or their negatives or other similar terms. The Bank cautions that forward-looking statements involve risks or uncertainties that could cause the Bank's actual results to differ materially from those expressed or implied in these forward-looking statements, or could affect the extent to which a particular objective, projection, estimate or prediction is realized. As a result, undue reliance should not be placed on these statements.

These risks and uncertainties include, without limitation, evolving economic and market conditions, political events, and the impact of competitive business forces. The risks and uncertainties related to evolving economic and market conditions include, but are not limited to, changes in interest rates, changes in the Bank's access to the capital markets, changes in the cost of the Bank's debt, changes in the ratings on the Bank's debt, adverse consequences resulting from a significant regional, national or global economic downturn (including, but not limited to, reduced demand for the Bank's products and services), credit and prepayment risks, changes in the financial health of the Bank's members or non-member borrowers, the effects from the COVID-19 pandemic, and the recent significant drop in oil prices. Among other things, political events could possibly lead to changes in the Bank's regulatory environment or its status as a government-sponsored enterprise ("GSE"), or to changes in the regulatory environment for the Bank's members or non-member borrowers. Risks and uncertainties related to competitive business forces include, but are not limited to, the potential loss of a significant amount of member borrowings through acquisitions or other means (including, but not limited to, the availability of other sources of liquidity resulting from various U.S. government programs that have been established in response to the COVID-19 crisis) or changes in the relative competitiveness of the Bank's products and services for member institutions. For a more detailed discussion of the risk factors applicable to the Bank, see "Item 1A — Risk Factors" in the Bank's Annual Report on Form 10-K for the year ended December 31, 2019, which was filed with the Securities and Exchange Commission ("SEC") on March 25, 2020 (the "2019 10-K"). The Bank undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events, changed circumstances, or any other reason.

Overview

Business

The Bank is one of 11 district Federal Home Loan Banks (each individually a "FHLBank" and collectively the "FHLBanks" and, together with the Federal Home Loan Banks Office of Finance ("Office of Finance"), a joint office of the FHLBanks, the "FHLBank System") that were created by the Federal Home Loan Bank Act of 1932. The FHLBanks serve the public by enhancing the availability of credit for residential mortgages, community lending and targeted community development. As independent, member-owned cooperatives, the FHLBanks seek to maintain a balance between their public purpose and their ability to provide adequate returns on the capital supplied by their members. The Federal Housing Finance Agency ("Finance Agency"), an independent agency in the executive branch of the U.S. government, is responsible for supervising and regulating the FHLBanks and the Office of Finance. The Finance Agency's stated mission is to ensure that the housing GSEs, including the FHLBanks, operate in a safe and sound manner so that they serve as a reliable source of liquidity and funding for housing finance and community investment. Consistent with this mission, the Finance Agency establishes policies and regulations covering the operations of the FHLBanks.

The Bank serves eligible financial institutions in Arkansas, Louisiana, Mississippi, New Mexico and Texas (collectively, the Ninth District of the FHLBank System). The Bank's primary business is lending relatively low cost funds (known as advances) to its member institutions, which include commercial banks, savings institutions, insurance companies, credit unions, and Community Development Financial Institutions that are certified under the Community Development Banking and Financial Institutions Act of 1994. While not members of the Bank, housing associates, including state and local housing authorities, that meet certain statutory criteria may also borrow from the Bank. The Bank also maintains a portfolio of investments, substantially all of which are highly rated, for liquidity purposes and to provide additional earnings. Additionally, the Bank holds interests in a portfolio of predominately conventional mortgage loans that were acquired through the Mortgage Partnership Finance® ("MPF"®) Program administered by the FHLBank of Chicago. Shareholders' return on their investment includes dividends (which are typically paid quarterly in the form of capital stock) and the value derived from access to the Bank's products and services. Historically, the Bank has balanced the financial rewards to shareholders by seeking to pay a dividend that meets or exceeds the return on alternative short-term money market investments available to shareholders, while

lending funds at the lowest rates expected to be compatible with that objective and its objective to build retained earnings over time.

The Bank’s capital stock is not publicly traded and can be held only by members of the Bank, by non-member institutions that acquire stock by virtue of acquiring member institutions, by a federal or state agency or insurer acting as a receiver of a closed institution, or by former members of the Bank that retain capital stock to support advances or other obligations that remain outstanding or until any applicable stock redemption or withdrawal notice period expires. All members must hold stock in the Bank. The Bank’s capital stock has a par value of $100 per share and is purchased, redeemed, repurchased and transferred only at its par value. By regulation, the parties to a transaction involving the Bank's stock can include only the Bank and its member institutions (or non-member institutions or former members, as described above). While a member could transfer stock to another member of the Bank, that transfer could occur only upon approval of the Bank and then only at par value. Members may redeem excess stock, or withdraw from membership and redeem all outstanding capital stock, with five years’ written notice to the Bank.

The FHLBanks’ debt instruments (known as consolidated obligations) are their primary source of funds and are the joint and several obligations of all 11 FHLBanks. Consolidated obligations are issued through the Office of Finance (acting as agent for the FHLBanks) and generally are publicly traded in the over-the-counter market. The Bank records on its statements of condition only those consolidated obligations for which it receives the proceeds. Consolidated obligations are not obligations of the U.S. government and the U.S. government does not guarantee them. Consolidated obligations are currently rated Aaa/P-1 by Moody’s Investors Service (“Moody’s”) and AA+/A-1+ by S&P Global Ratings (“S&P”). These ratings indicate that each of these nationally recognized statistical rating organizations ("NRSROs") has concluded that the FHLBanks have a very strong capacity to meet their commitments to pay principal and interest on consolidated obligations. The ratings also reflect the FHLBank System’s status as a GSE. Historically, the FHLBanks’ GSE status and very high credit ratings on consolidated obligations have provided the FHLBanks with excellent capital markets access. Deposits, other borrowings and the proceeds from capital stock issued to members are also sources of funds for the Bank.

In addition to ratings on the FHLBanks’ consolidated obligations, each FHLBank is rated individually by both S&P and Moody’s. These individual FHLBank ratings apply to the individual obligations of the respective FHLBanks, such as interest rate derivatives, deposits and letters of credit. As of March 31, 2020, Moody’s had assigned a deposit rating of Aaa/P-1 to each of the FHLBanks and S&P had rated each of the FHLBanks AA+/A-1+.

Shareholders, bondholders and prospective shareholders and bondholders should understand that these credit ratings are not a recommendation to buy, hold or sell securities and they may be subject to revision or withdrawal at any time by the NRSRO. The ratings from each of the NRSROs should be evaluated independently.

The Bank conducts its business and fulfills its public purpose primarily by acting as a financial intermediary between its members and the capital markets. The intermediation of the timing, structure and amount of its members’ credit needs with the investment requirements of the Bank’s creditors is made possible by the extensive use of interest rate exchange agreements, including interest rate swaps, swaptions and caps.

The Bank’s profitability objective is to generate sufficient earnings to allow the Bank to continue to increase its retained earnings and pay dividends on capital stock at rates that meet the Bank's dividend targets. Currently, the Bank's target for quarterly dividends on Class B-1 Stock is an annualized rate that approximates the average one-month LIBOR rate for the immediately preceding quarter. The target range for quarterly dividends on Class B-2 Stock is currently an annualized rate that approximates the average one-month LIBOR rate for the preceding quarter plus 0.5 - 1.0 percent. While the Bank has had a long-standing practice of paying quarterly dividends, future dividend payments cannot be assured.

The Bank operates in only one reportable segment. All of the Bank’s revenues are derived from U.S. operations.

The following table summarizes the Bank’s membership, by type of institution, as of March 31, 2020 and December 31, 2019.

MEMBERSHIP SUMMARY

	March 31, 2020	December 31, 2019
Commercial banks	561	565
Savings institutions	54	54
Credit unions	123	122
Insurance companies	50	47
Community Development Financial Institutions	7	7
Total members	795	795
Housing associates	8	8
Non-member borrowers	2	4
Total	805	807
Community Financial Institutions (“CFIs”) [(1)]	546	551

(1) The figures shown reflect the number of institutions that were Community Financial Institutions as of March 31, 2020 and December 31, 2019 based upon the definitions of Community Financial Institutions that applied as of those dates.

For 2020, Community Financial Institutions (“CFIs”) are defined to include all institutions insured by the Federal Deposit Insurance Corporation (“FDIC”) with average total assets as of December 31, 2019, 2018 and 2017 of less than $1.224 billion. For 2019, CFIs were defined as FDIC-insured institutions with average total assets as of December 31, 2018, 2017 and 2016 of less than $1.199 billion.

Financial Market Conditions

During the first quarter of 2020, economic growth in the United States was negatively impacted by the novel coronavirus known as COVID-19, which was declared a global pandemic by the World Health Organization on March 11, 2020. To date, COVID-19 has caused significant economic and financial turmoil both in the U.S. and around the world, and has fueled concerns that it could lead to a prolonged global recession. At this time, it is not possible to estimate how long it will take to halt the spread of the virus or the longer-term effects that COVID-19 could have on the Bank's business. Many businesses in the Bank's district and across the U.S. were forced to shut down operations in an attempt to slow the spread of the virus. Despite signs that the virus is continuing to spread, beginning in late April/early May some of these previously closed businesses have been allowed to reopen in some locations but generally at reduced capacity and with restrictions that are designed to keep people safe.

The gross domestic product decreased at an annual rate of 4.8 percent during the first quarter of 2020, after increasing at annual rates of 2.1 percent during the fourth quarter of 2019 and 2.3 percent during 2019. The nationwide unemployment rate increased from 3.5 percent at December 31, 2019 to 4.4 percent at March 31, 2020. By the end of April 2020, the unemployment rate had surged to 14.7 percent. Unemployment claims have increased dramatically as more employers have laid off workers in response to the significant reduction in economic activity.

At its meeting held on January 28/29, 2020, the Federal Open Market Committee ("FOMC") maintained its target for the federal funds rate at a range between 1.50 percent and 1.75 percent (which it had set in October 2019). In an unscheduled meeting held on March 3, 2020, the FOMC stated that the COVID-19 outbreak posed evolving risks to economic activity and, in support of achieving its maximum employment and price stability goals, it decided to lower the target range for the federal funds rate by 50 basis points, to a range between 1.00 percent and 1.25 percent, noting that it would closely monitor developments and their implications for the economic outlook and would act as appropriate to support the economy. On March 15, 2020, the FOMC again lowered the federal funds rate in another unscheduled meeting, this time to a target range between 0 percent and 0.25 percent, noting that the COVID-19 outbreak had harmed communities and disrupted economic activity in many countries, including the United States, and had significantly affected global financial conditions. At its scheduled meeting on April 28/29, 2020, the FOMC maintained the target for the federal funds rate at a range between 0 percent and 0.25 percent and stated that it expects to maintain this target range until it is confident that the economy has weathered recent events and is on track to achieve its maximum employment and price stability goals.

The FOMC further stated that it will continue to purchase Treasury securities and agency MBS in the amounts needed to support smooth market functioning and effective transmission of monetary policy to broader financial conditions. The FOMC

will include purchases of agency commercial MBS in its agency MBS purchases and will reinvest all principal payments from the Federal Reserve's holdings of agency debt and agency MBS in agency MBS.

Due to the dramatic increase in volatility across the global capital markets, the Federal Reserve has also undertaken a number of other emergency actions. Notably, the Federal Reserve increased substantially its provision of liquidity to the repo and U.S. Treasury markets via open market operations while also providing liquidity to related markets, such as the commercial paper market, via an array of new programs.

In the weeks before and after the FOMC's early March reduction in the federal funds target rate, interest rates declined significantly. The Secured Overnight Financing Rate ("SOFR") declined by 154 basis points during the first three months of 2020, from 1.55 percent to 0.01 percent. One-month and three-month LIBOR also declined during the first three months of 2020, with one-month and three-month LIBOR ending the first quarter at 0.99 percent and 1.45 percent, respectively, as compared to 1.76 percent and 1.91 percent, respectively, at the end of 2019. By the end of April 2020, one-month and three-month LIBOR had further declined to 0.33 percent and 0.56 percent, respectively.

The following table presents information on various market interest rates at March 31, 2020 and December 31, 2019 and various average market interest rates for the three-month periods ended March 31, 2020 and 2019.

	Ending Rate		Average Rate	
	March 31, 2020	December 31, 2019	Three Months Ended March 31, 2020	Three Months Ended March 31, 2019
Federal Funds Target [1]	0.25%	1.75%	1.40%	2.50%
Average Effective Federal Funds Rate [2]	0.08%	1.55%	1.25%	2.40%
SOFR [3]	0.01%	1.55%	1.23%	2.43%
1-month LIBOR [1]	0.99%	1.76%	1.40%	2.50%
3-month LIBOR [1]	1.45%	1.91%	1.53%	2.69%
2-year LIBOR [1]	0.49%	1.70%	1.17%	2.62%
5-year LIBOR [1]	0.52%	1.73%	1.19%	2.54%
10-year LIBOR [1]	0.72%	1.90%	1.34%	2.67%
3-month U.S. Treasury [1]	0.11%	1.55%	1.10%	2.44%
2-year U.S. Treasury [1]	0.23%	1.58%	1.08%	2.49%
5-year U.S. Treasury [1]	0.37%	1.69%	1.14%	2.46%
10-year U.S. Treasury [1]	0.70%	1.92%	1.36%	2.65%

(1) Source: Bloomberg (reflects upper end of target range)

(2) Source: Federal Reserve Statistical Release

(3) Source: Federal Reserve Bank of New York

Year-to-Date 2020 Summary

- The Bank ended the first quarter of 2020 with total assets of $83.8 billion compared with $75.4 billion at the end of 2019. The $8.4 billion increase in total assets for the three months ended March 31, 2020 was attributable primarily to increases in the Bank's advances ($9.8 billion) and mortgage loans held for portfolio ($0.2 billion), as well as an increase in the carrying value of its hedged, fixed-rate long-term investments due to declining interest rates ($0.7 billion), partially offset by a decrease in the Bank's short-term liquidity portfolio ($2.5 billion).
- Total advances increased from $37.1 billion at December 31, 2019 to $46.9 billion at March 31, 2020.
- Mortgage loans held for portfolio increased from $4.1 billion at December 31, 2019 to $4.3 billion at March 31, 2020.
- The Bank’s net income for the three months ended March 31, 2020 was $51.6 million, as compared to $58.4 million during the corresponding period in 2019. For discussion and analysis of the decrease in net income, see the section entitled "Results of Operations" beginning on page 57 of this report.
- At all times during the first three months of 2020, the Bank was in compliance with all of its regulatory capital requirements. In addition, the Bank’s retained earnings increased to $1.267 billion at March 31, 2020 from $1.233 billion at December 31, 2019. Retained earnings was 1.51 percent and 1.64 percent of total assets at March 31, 2020 and December 31, 2019, respectively.

- During the first three months of 2020, the Bank paid dividends totaling $15.0 million. The Bank's first quarter 2020 dividends on Class B-1 Stock and Class B-2 Stock were paid at annualized rates of 1.79 percent (a rate equal to average one-month LIBOR for the fourth quarter of 2019) and 2.79 percent (a rate equal to average one-month LIBOR for the fourth quarter of 2019 plus 1.0 percent), respectively.

Selected Financial Data

SELECTED FINANCIAL DATA
(dollars in thousands)

	First Quarter 2020	2019			
		Fourth Quarter	Third Quarter	Second Quarter	First Quarter
Balance sheet (at quarter end)					
Advances	$ 46,922,518	$ 37,117,455	$ 38,180,593	$ 38,778,599	$ 36,096,595
Investments [1]	31,034,986	33,918,055	31,596,300	32,405,827	30,040,987
Mortgage loans held for portfolio	4,286,519	4,076,613	3,603,907	3,034,998	2,595,023
Allowance for credit losses on mortgage loans	4,339	1,149	795	731	611
Total assets	83,807,453	75,381,605	73,780,868	74,518,243	69,037,492
Consolidated obligations — discount notes	43,953,217	34,327,886	33,878,782	39,656,798	37,369,065
Consolidated obligations — bonds	34,186,393	35,745,827	33,744,493	29,481,562	26,746,361
Total consolidated obligations[2]	78,139,610	70,073,713	67,623,275	69,138,360	64,115,426
Mandatorily redeemable capital stock[3]	6,779	7,140	7,106	7,093	7,753
Capital stock — putable	2,700,176	2,466,242	2,478,206	2,582,594	2,431,577
Unrestricted retained earnings	1,062,579	1,038,533	1,007,453	984,180	960,243
Restricted retained earnings	204,460	194,144	181,808	171,187	160,372
Total retained earnings	1,267,039	1,232,677	1,189,261	1,155,367	1,120,615
Accumulated other comprehensive income (loss)	(250,960)	99,049	42,781	80,104	159,202
Total capital	3,716,255	3,797,968	3,710,248	3,818,065	3,711,394
Dividends paid[3]	15,027	18,264	19,210	19,326	19,123
Income statement (for the quarter)					
Net interest income after provision for mortgage loan losses[4]	$ 45,592	$ 90,811	$ 67,912	$ 62,474	$ 71,978
Other income	35,390	2,299	14,900	22,144	16,977
Other expense	23,668	24,572	23,803	24,525	24,065
AHP assessment	5,734	6,858	5,905	6,015	6,494
Net income	51,580	61,680	53,104	54,078	58,396
Performance ratios					
Net interest margin[4][5]	0.26%	0.50%	0.36%	0.36%	0.42%
Net interest spread [4][6]	0.17	0.39	0.24	0.21	0.26
Return on average assets	0.28	0.34	0.28	0.31	0.35
Return on average equity	5.44	6.50	5.46	5.66	6.22
Return on average capital stock [7]	8.28	9.77	8.05	8.53	9.28
Total average equity to average assets	5.21	5.19	5.17	5.51	5.57
Regulatory capital ratio[8]	4.74	4.92	4.98	5.03	5.16
Dividend payout ratio [3][9]	29.13	29.61	36.17	35.74	32.75

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

(2) The Bank is jointly and severally liable with the other FHLBanks for the payment of principal and interest on the consolidated obligations of all of the FHLBanks. At March 31, 2020, December 31, 2019, September 30, 2019, June 30, 2019 and March 31, 2019, the outstanding consolidated obligations (at par value) of all of the FHLBanks totaled approximately $1.175 trillion, $1.026 trillion, $1.010 trillion, $1.048 trillion and $1.011 trillion, respectively. As of those dates, the Bank's outstanding consolidated obligations (at par value) were $78 billion, $70 billion, $68 billion, $69 billion and $64 billion, respectively.

(3) Mandatorily redeemable capital stock represents capital stock that is classified as a liability under accounting principles generally accepted in the United States of America. Dividends on mandatorily redeemable capital stock are recorded as interest expense and excluded from dividends paid. Dividends paid on mandatorily redeemable capital stock totaled $39 thousand, $46 thousand, $54 thousand, $51 thousand and $50 thousand for the quarters ended March 31, 2020, December 31, 2019, September 30, 2019, June 30, 2019 and March 31, 2019, respectively.

(4) In accordance with ASU 2017-12, *"Targeted Improvements to Accounting for Hedging Activities"* ("ASU 2017-12"), changes in the fair value of a derivative in a qualifying fair value hedge along with changes in the fair value of the hedged asset or liability attributable to the hedged risk (the net amount of which is referred to as fair value hedge ineffectiveness) are recorded in net interest income. Prior to the adoption of ASU 2017-12, these amounts were recorded in other income (loss). Fair value hedge ineffectiveness increased (reduced) net interest income by $(36.9) million, $13.3 million, $(6.3) million, $(15.6) million and $(9.3) million for the quarters ended March 31, 2020, December 31, 2019, September 30, 2019, June 30, 2019 and March 31, 2019, respectively. For additional discussion, see the section entitled "Results of Operations" beginning on page 57 of this report.

(5) Net interest margin is net interest income as a percentage of average earning assets.

(6) Net interest spread is the difference between the yield on interest-earning assets and the cost of interest-bearing liabilities.

(7) Return on average capital stock is derived by dividing net income by average capital stock balances excluding mandatorily redeemable capital stock.

(8) The regulatory capital ratio is computed by dividing regulatory capital (the sum of capital stock — putable, mandatorily redeemable capital stock and retained earnings) by total assets at each quarter-end.

(9) Dividend payout ratio is computed by dividing dividends paid by net income for each quarter.

Legislative and Regulatory Developments

Coronavirus Aid, Relief, and Economic Security ("CARES") Act

The CARES Act was signed into law by the President of the United States on March 27, 2020. The $2.2 trillion package is the largest stimulus bill in U.S. history and was undertaken in response to the COVID-19 crisis impacting the country. The CARES Act followed previous relief legislation that was enacted earlier in the same month. The CARES Act:

- Provides assistance to businesses, states, and municipalities.
- Creates a loan program for small businesses, non-profits and physician practices that can be forgiven through employee retention incentives (known as the Paycheck Protection Program or "PPP").
- Authorizes the U.S. Treasury Secretary to make loans or loan guarantees to states, municipalities, and eligible businesses and loosens some regulations imposed by the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Dodd-Frank Act").
- Provides direct payments to eligible taxpayers and their families.
- Expands eligibility for unemployment insurance and increases benefit amounts.
- Includes mortgage forbearance provisions and a foreclosure moratorium.

Funding for the PPP was increased on April 24, 2020 with the enactment of the Paycheck Protection Program and Healthcare Enhancement Act. Additional phases of the CARES Act or other COVID-19 relief legislation may be enacted. The Bank is evaluating the potential impact of the CARES Act on its business, including its impact to the U.S. economy, which is currently unknown; and it is monitoring the impact that this legislation could have on its mortgage loans held for portfolio as well as the mortgages held by the Bank's members and that the Bank accepts as collateral.

Finance Agency Supervisory Letter Regarding PPP Loans as Collateral for Advances

On April 23, 2020, the Finance Agency issued a Supervisory Letter (the “PPP Supervisory Letter”) permitting the FHLBanks to accept loans made through the PPP as collateral for advances given the Small Business Administration’s 100 percent guarantee of the unpaid principal balance of the loans. On April 20, 2020, the Small Business Administration published its third interim final rule related to PPP loans which, among other things, explicitly waived certain regulatory requirements that must be satisfied before a member could pledge PPP loans to the FHLBanks as collateral. The PPP Supervisory Letter establishes a series of conditions under which the FHLBanks may accept PPP loans as collateral. These conditions focus on the financial condition of members, collateral discounts that must be applied to PPP loans, caps on the percentage of a member’s lendable pledged collateral that PPP loans can constitute, and pledge dollar limits.

On April 27, 2020, the Bank began accepting PPP loans as eligible collateral. The Bank does not expect its acceptance of PPP loans as collateral to materially affect its financial condition or results of operations.

Additional COVID-19 Developments

In response to the COVID-19 pandemic, governmental agencies, including the SEC, Office of the Comptroller of the Currency, Federal Reserve Board, FDIC, National Credit Union Administration, Commodity Futures Trading Commission and the Finance Agency, as well as state governments and agencies, have taken actions to provide various forms of relief from, and guidance regarding, the financial, operational, credit, market and other effects arising from the pandemic, some of which may have a direct or indirect impact on the Bank and/or its members. Many of these actions are temporary in nature. The Bank is monitoring these actions and guidance and evaluating their potential impact on the Bank.

Financial Condition

The following table provides selected period-end balances as of March 31, 2020 and December 31, 2019, as well as selected average balances for the three-month period ended March 31, 2020 and the year ended December 31, 2019. As shown in the table, the Bank’s total assets increased by 11.2 percent between December 31, 2019 and March 31, 2020, due to increases in the Bank's advances ($9.8 billion) and mortgage loans held for portfolio ($0.2 billion), as well as an increase in the carrying value of the Bank's long-term investments ($0.7 billion), partially offset by a decrease in the Bank's short-term liquidity portfolio ($2.5 billion). As the Bank's assets increased, the funding for those assets also increased. During the three months ended March 31, 2020, total consolidated obligations increased by $8.1 billion, as consolidated obligation discount notes increased by $9.6 billion and consolidated obligation bonds decreased by $1.5 billion.

The activity in each of the major balance sheet captions is discussed in the sections following the table.

SUMMARY OF CHANGES IN FINANCIAL CONDITION
(dollars in millions)

	March 31, 2020			
		Increase (Decrease)		Balance at
	Balance	Amount	Percentage	December 31, 2019
Advances	$ 46,923	$ 9,806	26.4 %	$ 37,117
Short-term liquidity holdings				
Non-interest bearing excess cash balances	1,090	1,090	*	—
Interest-bearing deposits	1,770	100	6.0 %	1,670
Securities purchased under agreements to resell	—	(4,310)	(100.0)%	4,310
Federal funds sold	6,035	1,530	34.0 %	4,505
Trading securities				
U.S. Treasury Bills	—	(928)	(100.0)%	928
U.S. Treasury Notes	4,457	31	0.7 %	4,426
Total short-term liquidity holdings	13,352	(2,487)	(15.7)%	15,839
Long-term investments				
Trading securities (U.S. Treasury Note)	113	7	6.6 %	106
Available-for-sale securities	17,510	743	4.4 %	16,767
Held-to-maturity securities	1,150	(56)	(4.6)%	1,206
Total long-term investments	18,773	694	3.8 %	18,079
Mortgage loans held for portfolio, net	4,282	207	5.1 %	4,075
Total assets	83,807	8,425	11.2 %	75,382
Consolidated obligations				
Consolidated obligations — bonds	34,186	(1,560)	(4.4)%	35,746
Consolidated obligations — discount notes	43,953	9,625	28.0 %	34,328
Total consolidated obligations	78,139	8,065	11.5 %	70,074
Mandatorily redeemable capital stock	7	—	— %	7
Capital stock	2,700	234	9.5 %	2,466
Retained earnings	1,267	34	2.8 %	1,233
Average total assets	73,120	1,797	2.5 %	71,323
Average capital stock	2,505	(49)	(1.9)%	2,554
Average mandatorily redeemable capital stock	7	—	— %	7

* The percentage increase is not meaningful.

Advances

The Bank's advances balances (at par value) increased by $9.3 billion (25 percent) during the first three months of 2020. Advances increased broadly across the Bank's membership. After declining during the first two months of 2020, demand for advances increased markedly in March 2020 in response to the COVID-19 outbreak. The Bank believes the unsettled nature of the credit markets led some members to increase their borrowings in order to increase their liquidity. At this time, it is not possible to estimate how long the current credit market conditions will continue. If markets ultimately return to more normal conditions, whether as a result of the various initiatives that have been undertaken by the Federal Reserve or otherwise, demand for advances may fall. The extent to which advances could fall will likely depend upon the severity and duration of the economic downturn that may result from the COVID-19 pandemic. The following table presents advances outstanding, by type of institution, as of March 31, 2020 and December 31, 2019.

ADVANCES OUTSTANDING BY BORROWER TYPE
(par value, dollars in millions)

	March 31, 2020		December 31, 2019	
	Amount	Percent	Amount	Percent
Commercial banks	$ 31,001	67%	$ 23,502	64%
Insurance companies	6,881	15	6,802	18
Savings institutions	4,711	10	4,185	11
Credit unions	3,400	8	2,244	6
Community Development Financial Institutions	22	—	21	—
Total member advances	46,015	100	36,754	99
Housing associates	178	—	172	1
Non-member borrowers	5	—	18	—
Total par value of advances	$ 46,198	100%	$ 36,944	100%
Total par value of advances outstanding to CFIs [(1)]	$ 5,407	12%	$ 4,490	12%

(1) The figures shown reflect the advances outstanding to CFIs as of March 31, 2020 and December 31, 2019 based upon the definitions of CFIs that applied as of those dates.

At March 31, 2020, advances outstanding to the Bank’s five largest borrowers totaled $16.8 billion, representing 36.4 percent of the Bank’s total outstanding advances as of that date. In comparison, advances outstanding to the Bank’s five largest borrowers as of December 31, 2019 totaled $13.5 billion, representing 36.5 percent of the total outstanding advances at that date. The following table presents the Bank’s five largest borrowers as of March 31, 2020.

FIVE LARGEST BORROWERS AS OF MARCH 31, 2020
(par value, dollars in millions)

Name	Par Value of Advances	Percent of Total Par Value of Advances
Texas Capital Bank, N.A.	$ 4,900	10.6%
Comerica Bank	4,550	9.9
American General Life Insurance Company	3,148	6.8
NexBank, SSB	2,175	4.7
Life Insurance Company of the Southwest	2,038	4.4
	$ 16,811	36.4%

On November 4, 2019, Iberiabank and Tennessee-based First Horizon National Corp. announced that they had entered into a definitive merger agreement. The combined company will be headquartered in Memphis, Tennessee. According to the announcement, the transaction is expected to close in the second quarter of 2020, subject to satisfaction of customary closing conditions, including receipt of customary regulatory approvals and approval by the shareholders of each company. With borrowings of $1.35 billion, Iberiabank was the Bank's ninth largest borrower as of March 31, 2020.

The following table presents information regarding the composition of the Bank's advances by product type as of March 31, 2020 and December 31, 2019.

ADVANCES OUTSTANDING BY PRODUCT TYPE
(par value, dollars in millions)

	March 31, 2020		December 31, 2019	
	Balance	Percentage of Total	Balance	Percentage of Total
Fixed-rate	$ 34,416	74.5%	$ 24,766	67.0%
Adjustable/variable-rate indexed	10,510	22.7	10,978	29.7
Amortizing	1,272	2.8	1,200	3.3
Total par value	$ 46,198	100.0%	$ 36,944	100.0%

The Bank is required by statute and regulation to obtain sufficient collateral from members/borrowers to fully secure all advances and other extensions of credit. The Bank's collateral arrangements with its members/borrowers and the types of collateral it accepts to secure advances are described in the 2019 10-K. To ensure the value of collateral pledged to the Bank is sufficient to secure its advances, the Bank applies various haircuts, or discounts, to determine the value of the collateral against which borrowers may borrow. From time to time, the Bank reevaluates the adequacy of its collateral haircuts under a range of stress scenarios to ensure that its collateral haircuts are sufficient to protect the Bank from credit losses on advances.

In addition, as described in the 2019 10-K, the Bank reviews the financial condition of its depository institution borrowers on at least a quarterly basis to identify any borrowers whose financial condition indicates they might pose an increased credit risk and, as needed, takes appropriate action. The Bank has not experienced any credit losses on advances since it was founded in 1932 and, based on its credit extension and collateral policies, management currently does not anticipate any credit losses on advances. Accordingly, the Bank has not provided any allowance for losses on advances.

Short-Term Liquidity Holdings

At March 31, 2020, the Bank's short-term liquidity holdings were comprised of $6.0 billion of overnight federal funds sold, $4.5 billion of U.S. Treasury Notes, $1.8 billion of overnight interest-bearing deposits and $1.1 billion of excess cash held at the Federal Reserve. At December 31, 2019, the Bank's short-term liquidity holdings were comprised of $4.5 billion of overnight federal funds sold, $4.4 billion of U.S. Treasury Notes, $4.3 billion of overnight reverse repurchase agreements, $1.7 billion of overnight interest-bearing deposits and $0.9 billion of U.S. Treasury Bills. All of the Bank's federal funds sold during the three months ended March 31, 2020 were transacted with domestic bank counterparties, U.S. subsidiaries of foreign holding companies or U.S. branches of foreign financial institutions on an overnight basis. All of the Bank's interest-bearing deposits were transacted on an overnight basis with domestic bank counterparties or U.S. subsidiaries of foreign holding companies. As of March 31, 2020, the Bank's overnight federal funds sold consisted of $1.9 billion sold to counterparties rated double-A, $3.7 billion sold to counterparties rated single-A and $0.4 billion sold to counterparties rated triple-B. As of March 31, 2020, substantially all of the Bank's interest-bearing deposits were held in single-A rated banks. The credit ratings presented in the two preceding sentences represent the lowest long-term rating assigned to the counterparty by Moody's or S&P.

The amount of the Bank's short-term liquidity holdings fluctuates in response to several factors, including the anticipated demand for advances, the timing and extent of advance prepayments, changes in the Bank's deposit balances, the Bank's pre-funding activities, prevailing conditions (or anticipated changes in conditions) in the short-term debt markets, changes in the returns provided by short-term investment alternatives relative to the Bank's discount note funding costs, the level of liquidity needed to satisfy Finance Agency requirements and the Finance Agency's expectations with regard to the Bank's core mission achievement. For a discussion of the Finance Agency's liquidity requirements, see the section below entitled "Liquidity and Capital Resources." For a discussion of the Finance Agency's guidance regarding core mission achievement, see Item 1 - Business - Core Mission Achievement in the 2019 10-K. For the three months ended March 31, 2020, the Bank's core mission asset ("CMA") ratio was 66.9 percent. In comparison, the Bank's CMA ratio was 65.7 percent for the year ended December 31, 2019.

Long-Term Investments

The composition of the Bank's long-term investment portfolio at March 31, 2020 and December 31, 2019 is set forth in the table below.

COMPOSITION OF LONG-TERM INVESTMENT PORTFOLIO
(in millions)

	Balance Sheet Classification			Total Long-Term	
March 31, 2020	**Held-to-Maturity (at carrying value)**	**Available-for-Sale (at fair value)**	**Trading (at fair value)**	**Investments (at carrying value)**	**Held-to-Maturity (at fair value)**
Debentures					
U.S. government-guaranteed obligations	$ 5	$ 463	$ 113	$ 581	$ 5
GSE obligations	—	5,768	—	5,768	—
State housing agency obligations	110	—	—	110	110
Other	—	46	—	46	—
Total debentures	115	6,277	113	6,505	115
Mortgage-backed securities ("MBS") portfolio					
GSE residential MBS	983	—	—	983	977
GSE commercial MBS	—	11,233	—	11,233	—
Non-agency residential MBS	52	—	—	52	55
Total MBS	1,035	11,233	—	12,268	1,032
Total long-term investments	$ 1,150	$ 17,510	$ 113	$ 18,773	$ 1,147

	Balance Sheet Classification			Total Long-Term	
December 31, 2019	**Held-to-Maturity (at carrying value)**	**Available-for-Sale (at fair value)**	**Trading (at fair value)**	**Investments (at carrying value)**	**Held-to-Maturity (at fair value)**
Debentures					
U.S. government-guaranteed obligations	$ 6	$ 453	$ 106	$ 565	$ 6
GSE obligations	—	5,584	—	5,584	—
State housing agency obligations	109	—	—	109	109
Other	—	46	—	46	—
Total debentures	115	6,083	106	6,304	115
Mortgage-backed securities portfolio					
GSE residential MBS	1,037	—	—	1,037	1,036
GSE commercial MBS	—	10,684	—	10,684	—
Non-agency residential MBS	54	—	—	54	65
Total MBS	1,091	10,684	—	11,775	1,101
Total long-term investments	$ 1,206	$ 16,767	$ 106	$ 18,079	$ 1,216

The Bank did not acquire or sell any long-term investments during the three months ended March 31, 2020. During the three months ended March 31, 2020, the proceeds from maturities and paydowns of held-to-maturity securities and available-for-sale securities totaled approximately $57 million and $74 million, respectively.

The Bank is precluded by regulation from purchasing additional MBS if such purchase would cause the aggregate amortized cost of its MBS holdings to exceed 300 percent of the Bank's total regulatory capital (the sum of its capital stock, mandatorily redeemable capital stock and retained earnings). However, the Bank is not required to sell any mortgage securities that it purchased at a time when it was in compliance with this ratio. At March 31, 2020, the Bank held $12.4 billion (amortized cost) of MBS, which represented 313 percent of its total regulatory capital as of that date. The Bank intends to continue to purchase additional GSE MBS if securities with adequate returns are available and market conditions are satisfactory when the Bank has the regulatory capacity to increase its MBS portfolio. As discussed in the section entitled "Potential LIBOR Phase-Out" beginning on page 56 of this report, the FHLBanks were directed by the Finance Agency to no longer purchase (after December 31, 2019) LIBOR-indexed investments which mature after December 31, 2021 and (by March 31, 2020) to no longer issue, make, purchase or otherwise enter into financial liabilities, derivatives or other assets that reference LIBOR and which mature after December 31, 2021. In light of the recent market volatility caused by the COVID-19 pandemic, the Finance Agency (on March 16, 2020) extended the date after which the FHLBanks can no longer issue, make, purchase or otherwise enter into

financial liabilities, derivatives or other assets that reference LIBOR and which mature after December 31, 2021 from March 31, 2020 to June 30, 2020, except for option-embedded products. This directive did not in any way modify the previous guidance relating to investments. As a result of this guidance, the Bank's consideration of future fixed rate MBS purchases will also take into account its ability to prudently mitigate interest rate risk through the use of consolidated obligations or derivatives that are indexed to an interest rate other than LIBOR.

In addition to MBS, the Bank is also permitted under applicable policies and regulations to purchase certain other types of highly rated, long-term, non-MBS investments subject to certain limits. These investments include but are not limited to the non-MBS debt obligations of other GSEs. Subject to applicable regulatory limits and the constraints imposed by the Finance Agency's guidance regarding core mission achievement, the Bank may add these types of securities to its long-term investment portfolio if attractive opportunities to do so are available and market conditions are satisfactory. The hedging considerations discussed in the preceding paragraph will also apply to any fixed rate non-MBS investments that are considered for purchase.

The Bank evaluates all outstanding available-for-sale securities in an unrealized loss position and all outstanding held-to-maturity securities as of the end of each calendar quarter to determine whether an allowance is needed to reserve for expected credit losses on the securities. As of March 31, 2020, the Bank determined that an allowance for credit losses was not necessary on any of its held-to-maturity or available-for-sale securities. For a summary of the Bank's evaluation, see “Item 1. Financial Statements” (specifically, Note 9 beginning on page 16 of this report).

As of March 31, 2020, the U.S. government and the issuers of the Bank's holdings of GSE debentures and GSE MBS were rated triple-A by Moody's and AA+ by S&P. At that same date, the Bank's holdings of other debentures, which were comprised of securities issued by the Private Export Funding Corporation ("PEFCO"), were rated triple-A by Moody's. The PEFCO debentures are not currently rated by S&P. The credit ratings associated with the Bank's holdings of non-agency residential MBS ("RMBS") are presented in the table below.

All but one of the Bank’s non-agency RMBS are rated by Moody’s and/or S&P. The following table presents the credit ratings assigned to the Bank’s non-agency RMBS holdings as of March 31, 2020. The credit ratings presented in the table represent the lowest rating assigned to the security by Moody’s or S&P.

NON-AGENCY RMBS CREDIT RATINGS

(dollars in thousands)

Credit Rating	Number of Securities	Unpaid Principal Balance	Amortized Cost	Carrying Value	Estimated Fair Value	Unrealized Losses
Double-A	1	$ 1,096	$ 1,096	$ 1,096	$ 946	$ 150
Single-A	2	8,150	8,150	8,150	7,061	1,089
Triple-B	2	2,815	2,815	2,815	2,521	294
Single-B	4	11,552	11,403	10,117	9,675	1,727
Triple-C	12	43,027	36,551	29,668	35,010	2,431
Not Rated	1	77	77	77	66	11
Total	22	$ 66,717	$ 60,092	$ 51,923	$ 55,279	$ 5,702

At March 31, 2020, the Bank’s portfolio of non-agency RMBS was comprised of 3 securities with an aggregate unpaid principal balance of $8 million that are backed by first lien fixed-rate loans and 19 securities with an aggregate unpaid principal balance of $59 million that are backed by first lien option adjustable-rate mortgage (“option ARM”) loans. In comparison, as of December 31, 2019, the Bank’s portfolio of non-agency RMBS was comprised of 3 securities backed by fixed-rate loans that had an aggregate unpaid principal balance of $8 million and 19 securities backed by option ARM loans that had an aggregate unpaid principal balance of $62 million. A summary of the Bank’s non-agency RMBS as of December 31, 2019 by classification by the originator at the time of issuance and collateral type is presented in the 2019 10-K; there were no material changes to this information during the three months ended March 31, 2020.

While substantially all of the Bank's RMBS portfolio is comprised of collateralized mortgage obligations ("CMOs") with variable-rate coupons ($1.1 billion par value at March 31, 2020) that do not expose it to interest rate risk if interest rates rise moderately, these securities include caps that would limit increases in the variable-rate coupons if short-term interest rates rise above the caps. In addition, if interest rates rise, prepayments on the mortgage loans underlying the securities would likely decline, thus lengthening the time that the securities would remain outstanding with their coupon rates capped. As of March 31, 2020, one-month LIBOR was 0.99 percent and the effective interest rate caps on one-month LIBOR (the interest cap rate minus the stated spread on the coupon) embedded in the CMO floaters ranged from 5.95 percent to 10.73 percent. The largest concentration of embedded effective caps ($0.8 billion) was between 6.00 percent and 6.50 percent. As of March 31, 2020, one-month LIBOR rates were 496 basis points below the lowest effective interest rate cap embedded in the CMO floaters. To hedge

a portion of the potential cap risk embedded in these securities, the Bank held one $500 million interest rate cap with a strike rate of 6.50 percent and final maturity in August 2021. The notional balance of this cap declines by $250 million in August 2020 to $250 million. If three-month LIBOR rises above 6.50 percent, the Bank will be entitled to receive interest payments according to the terms and conditions of the interest rate cap agreement. These payments would be based upon the notional amount of the agreement (at that time) and the difference between 6.50 percent and three-month LIBOR.

Mortgage Loans Held For Portfolio

As of March 31, 2020 and December 31, 2019, mortgage loans held for portfolio (net of allowance for credit losses) were $4.3 billion and $4.1 billion, respectively, representing approximately 5.1 percent and 5.4 percent, respectively, of the Bank's total assets at each of those dates. Through the MPF program, the Bank currently invests in only conventional residential mortgage loans originated by its Participating Financial Institutions ("PFIs"). During the period from 1998 to mid-2003, the Bank purchased conventional mortgage loans and government-guaranteed/insured mortgage loans (i.e., those insured or guaranteed by the Federal Housing Administration or the Department of Veterans Affairs). The Bank resumed acquiring conventional mortgage loans under this program in early 2016. Approximately $4.184 billion of the $4.197 billion (unpaid principal balance) of mortgage loans on the Bank's balance sheet at March 31, 2020 were conventional loans, almost all of which were acquired since 2016. The remaining $13 million (unpaid principal balance) of the mortgage loan portfolio is comprised of government-guaranteed or government-insured loans that were acquired during the period from 1998 to mid-2003.

The Bank manages the liquidity, interest rate and prepayment risk of these loans, while the PFIs or their designees retain the servicing activities. The Bank and the PFIs share in the credit risk of the loans with the Bank assuming a limited first loss obligation defined as the First Loss Account ("FLA"), and the PFIs assuming credit losses in excess of the FLA, up to the amount of the required credit enhancement obligation ("CE Obligation") as specified in the master agreement ("Second Loss Credit Enhancement"). The FLA is a memo account that is used to track the Bank's exposure to losses until the CE Obligation is available to cover losses. The CE Obligation is the amount of credit enhancement needed for a master commitment to have an estimated rating that is equivalent to an investment grade rated MBS. Credit enhancement levels are set by the Bank using an NRSRO model and are currently set at a triple-B equivalent. The Bank assumes all losses in excess of the Second Loss Credit Enhancement.

Under the Finance Agency's Acquired Member Asset regulation (12 C.F.R. part 1268), any portion of the CE Obligation that is a PFI's direct liability must be collateralized by the PFI in the same way that advances are collateralized. Accordingly, the PFI Agreement provides that the PFI's obligations under the PFI Agreement are secured along with other obligations of the PFI under its regular advances agreement with the Bank and, further, that the Bank may request additional collateral to secure the PFI's obligations. PFIs are paid credit enhancement fees ("CE fees") as compensation for retaining a portion of the credit risk on the loans sold to the Bank, as an incentive to minimize credit losses on those loans, to share in the risk of loss on MPF loans and, in limited cases related to loans acquired prior to 2016, to pay for supplemental mortgage insurance, rather than paying a guaranty fee to other secondary market purchasers. CE fees are paid monthly and are determined based on the remaining unpaid principal balance of the MPF loans during the applicable month. CE fees are recorded as a reduction to mortgage loan interest income when paid by the Bank. Mortgage loan interest income was reduced by CE fees totaling $642,000 and $452,000 during the three months ended March 31, 2020 and 2019, respectively. The Bank's allowance for loan losses, which factors in the CE obligation, was $4,339,000 and $1,149,000 at March 31, 2020 and December 31, 2019, respectively.

During the three months ended March 31, 2020, the Bank acquired mortgage loans totaling $427 million ($414 million unpaid principal balance). All of the acquired mortgage loans were originated by certain of the Bank's PFIs and the Bank acquired a 100 percent interest in such loans. The Bank's mortgage loan purchases have declined significantly since the onset of the COVID-19 pandemic and are not expected to increase again until market conditions improve. Over time, the Bank expects to increase the balance of its mortgage loan portfolio to an amount that approximates 10 percent to 15 percent of its total assets. Currently, the Bank intends to continue to acquire a 100 percent interest in the mortgage loans that it purchases from its PFIs.

Consolidated Obligations and Deposits

During the three months ended March 31, 2020, the Bank's outstanding consolidated obligation bonds (at par value) decreased by $1.7 billion and its outstanding consolidated obligation discount notes (at par value) increased by $9.6 billion. The following table presents the composition of the Bank's outstanding bonds at March 31, 2020 and December 31, 2019.

COMPOSITION OF CONSOLIDATED OBLIGATION BONDS OUTSTANDING
(par value, dollars in millions)

	March 31, 2020		December 31, 2019	
	Balance	Percentage of Total	Balance	Percentage of Total
Variable-rate non-callable				
SOFR-indexed	$ 9,532	28.0%	$ 9,532	26.7%
LIBOR-indexed	3,250	9.6%	3,110	8.7%
Fixed-rate				
Callable	12,519	36.8	12,083	33.9
Non-callable	7,985	23.5	9,447	26.4
Step-up				
Callable	525	1.6	1,237	3.5
Non-callable	100	0.3	100	0.3
Callable step-down	75	0.2	175	0.5
Total par value	$ 33,986	100.0%	$ 35,684	100.0%

During the first three months of 2020, the Bank issued $9.5 billion of consolidated obligation bonds and approximately $45.3 billion of consolidated obligation discount notes (excluding those with overnight terms), the proceeds of which were used primarily to replace maturing or called consolidated obligation bonds and maturing discount notes and to fund the increase in the Bank's advances. At March 31, 2020 and December 31, 2019, discount notes comprised approximately 56 percent and 49 percent, respectively, of the Bank's total outstanding consolidated obligations. During the three months ended March 31, 2020, the Bank's bond issuance (based on trade date and par value) consisted of approximately $5.2 billion of swapped fixed-rate callable bonds (including step-up bonds), $4.5 billion of variable-rate bonds and one $0.1 billion fixed-rate non-callable bond (which was not swapped).

The weighted average cost of swapped and variable-rate consolidated obligation bonds issued by the Bank approximated LIBOR minus 18 basis points during the three months ended March 31, 2020, compared to LIBOR minus 19 basis points during the three months ended December 31, 2019 and LIBOR minus 16 basis points during the three months ended March 31, 2019. Beginning in March 2020, in response to the COVID-19 outbreak, investor demand for high credit quality, fixed income investments, including the FHLBanks' consolidated obligations, generally increased relative to other investments. However, the spreads on FHLBank consolidated obligations widened relative to U.S. Treasury securities and fixed income market conditions became more challenging, with market participants favoring shorter-term obligations, including FHLBank discount notes.

Demand and term deposits were $1.7 billion and $1.3 billion at March 31, 2020 and December 31, 2019, respectively. The size of the Bank's deposit base varies as market factors change, including the attractiveness of the Bank's deposit pricing relative to the rates available to members on alternative money market investments, members' investment preferences with respect to the maturity of their investments, and member liquidity.

Capital

The Bank's outstanding capital stock (excluding mandatorily redeemable capital stock) was $2.7 billion and $2.5 billion at March 31, 2020 and December 31, 2019, respectively. The Bank's average outstanding capital stock (excluding mandatorily redeemable capital stock) was $2.5 billion and $2.6 billion for the three months ended March 31, 2020 and the year ended December 31, 2019, respectively.

Mandatorily redeemable capital stock outstanding at March 31, 2020 and December 31, 2019 was $6.8 million and $7.1 million, respectively. Although mandatorily redeemable capital stock is excluded from capital (equity) for financial reporting purposes, it is considered capital for regulatory purposes.

At March 31, 2020 and December 31, 2019, the Bank's five largest shareholders collectively held $735 million and $620 million, respectively, of capital stock, which represented 27.1 percent and 25.1 percent, respectively, of the Bank's total outstanding capital stock (including mandatorily redeemable capital stock) as of those dates. The following table presents the Bank's five largest shareholders as of March 31, 2020.

FIVE LARGEST SHAREHOLDERS AS OF MARCH 31, 2020
(par value, dollars in thousands)

Name	Par Value of Capital Stock	Percent of Total Par Value of Capital Stock
Texas Capital Bank, N.A.	$ 208,798	7.7%
Comerica Bank	193,550	7.2
American General Life Insurance Company	144,615	5.3
Hancock Whitney Bank	95,525	3.5
NexBank, SSB	92,514	3.4
	$ 735,002	27.1%

As of March 31, 2020, all of the stock held by the five institutions shown in the table above was classified as capital in the statement of condition.

The following table presents outstanding capital stock, by type of institution, as of March 31, 2020 and December 31, 2019.

CAPITAL STOCK OUTSTANDING BY INSTITUTION TYPE
(par value, dollars in millions)

	March 31, 2020		December 31, 2019	
	Par Value of Capital Stock	Percent of Total Par Value of Capital Stock	Par Value of Capital Stock	Percent of Total Par Value of Capital Stock
Commercial banks	$ 1,805	67%	$ 1,584	64%
Insurance companies	366	14	364	15
Credit unions	273	10	281	11
Savings institutions	255	9	236	10
Community Development Financial Institutions	1	—	1	—
Total capital stock classified as capital	2,700	100	2,466	100
Mandatorily redeemable capital stock	7	—	7	—
Total regulatory capital stock	$ 2,707	100%	$ 2,473	100%

Members are required to maintain an investment in Class B Stock equal to the sum of a membership investment requirement and an activity-based investment requirement. The membership investment requirement is currently 0.04 percent of each member's total assets as of the previous calendar year-end, subject to a minimum of $1,000 and a maximum of $7,000,000. Through March 31, 2020, the activity-based investment requirement was 4.1 percent of outstanding advances, except for advances that were funded under the Bank's special reduced stock advances offering that ran from October 21, 2015 through December 31, 2015. The activity-based investment requirement for those advances was (and continues to be) 2.0 percent of the outstanding advances. At March 31, 2020, these advances totaled approximately $634 million. Class B-1 Stock is used to meet the membership investment requirement and Class B-2 Stock is used to meet the activity-based investment requirement.

On February 28, 2020, the Bank announced a Board-authorized reduction in the activity-based stock investment requirement from 4.1 percent to 2 percent for up to $5 billion of advances that are funded during the period from April 1, 2020 through December 31, 2020. To be eligible for the reduced activity-based investment requirement, the advances must have a maturity of one year or greater. The standard activity-based stock investment requirement of 4.1 percent will continue to apply to all other advances that are funded during this period.

Quarterly, the Bank generally repurchases a portion of members' excess capital stock. Excess capital stock is defined as the amount of stock held by a member (or former member) in excess of that institution's minimum investment requirement. The portion of members' excess capital stock subject to repurchase is known as surplus stock. For the repurchase that occurred

during the three months ended March 31, 2020, surplus stock was defined as the amount of stock held by a member shareholder in excess of 125 percent of the shareholder's minimum investment requirement. For that repurchase, which occurred on March 27, 2020, a shareholder's surplus stock was not repurchased if: (1) the amount of that shareholder's surplus stock was $2,500,000 or less; (2) the shareholder elected to opt-out of the repurchase; or (3) the shareholder was on restricted collateral status (subject to certain exceptions). On March 27, 2020, the Bank repurchased surplus stock totaling $139.1 million, none of which was classified as mandatorily redeemable capital stock at that date.

On March 27, 2020, the Bank also repurchased all excess stock held by non-member shareholders as of that date. This excess stock, all of which was classified as mandatorily redeemable capital stock at that date, totaled $2,600.

At March 31, 2020, the Bank's excess stock totaled $475.8 million, which represented 0.57 percent of the Bank's total assets as of that date.

During the three months ended March 31, 2020, the Bank's retained earnings increased by $34 million, from $1.233 billion to $1.267 billion. During this same period, the Bank paid dividends on capital stock totaling $15.0 million, which represented a weighted average annualized dividend rate of 2.38 percent. The Bank's first quarter dividends on Class B-1 Stock and Class B-2 Stock were paid at annualized rates of 1.79 percent (a rate equal to average one-month LIBOR for the fourth quarter of 2019) and 2.79 percent (a rate equal to average one-month LIBOR for the fourth quarter of 2019 plus 1.0 percent), respectively. The first quarter dividends, which were applied to average Class B-1 Stock and average Class B-2 Stock held during the period from October 1, 2019 through December 31, 2019, were paid on March 30, 2020.

While there can be no assurances, taking into consideration its current earnings expectations, the Bank currently expects to pay quarterly dividends on Class B-1 Stock during the remainder of 2020 at annualized rates equal to average one-month LIBOR for the applicable dividend periods. Further, the Bank currently expects to pay quarterly dividends on Class B-2 Stock during the remainder of 2020 at annualized rates equal to average one-month LIBOR for the applicable dividend periods plus 1.0 percent.

The Bank is required to maintain at all times permanent capital in an amount at least equal to its risk-based capital requirement, which is the sum of its credit risk capital requirement, its market risk capital requirement, and its operations risk capital requirement, as further described in the 2019 10-K. Permanent capital is defined under the Finance Agency's rules as retained earnings and amounts paid in for Class B stock (which for the Bank includes both Class B-1 Stock and Class B-2 Stock), regardless of its classification as equity or liabilities for financial reporting purposes. At March 31, 2020, the Bank's total risk-based capital requirement was $925 million, comprised of credit risk, market risk and operations risk capital requirements of $254 million, $458 million and $213 million, respectively, and its permanent capital was $3.974 billion.

In addition to the risk-based capital requirement, the Bank is subject to three other capital requirements. First, the Bank must, at all times, maintain a minimum total capital-to-assets ratio of 4.0 percent. For this purpose, total capital is defined by Finance Agency rules and regulations as the Bank's permanent capital and the amount of any general allowance for losses (i.e., those reserves that are not held against specific assets). Second, the Bank is required to maintain at all times a minimum leverage capital-to-assets ratio in an amount at least equal to 5.0 percent of its total assets. In applying this requirement to the Bank, leverage capital includes the Bank's permanent capital multiplied by a factor of 1.5 plus the amount of any general allowance for losses. The Bank did not have any general allowance for losses at March 31, 2020 or December 31, 2019. Under the regulatory definitions, total capital and permanent capital exclude accumulated other comprehensive income (loss). Third, beginning in February 2020, the Bank is required to maintain a capital stock-to-assets ratio of at least 2.0 percent, as measured on a daily average basis at each month end. At all times during the three months ended March 31, 2020, the Bank was in compliance with all of its regulatory capital requirements. At March 31, 2020, the Bank's total capital-to-assets and leverage capital-to-assets ratios were 4.74 percent and 7.11 percent, respectively. The Bank's capital stock-to-assets ratio was 3.39 percent for the month ended March 31, 2020. For a summary of the Bank's compliance with the Finance Agency's capital requirements as of March 31, 2020 and December 31, 2019, see "Item 1. Financial Statements" (specifically, Note 14 on page 31 of this report).

Derivatives and Hedging Activities

The Bank enters into interest rate swap, swaption, cap, floor and forward rate agreements (collectively, interest rate exchange agreements) to manage its exposure to changes in interest rates and/or to adjust the effective maturity, repricing index and/or frequency or option characteristics of financial instruments. This use of derivatives is integral to the Bank's financial management strategy, and the impact of these interest rate exchange agreements permeates the Bank's financial statements. For additional discussion, see "Item 1. Financial Statements" (specifically, Note 13 beginning on page 24 of this report).

The following table provides the notional balances of the Bank's derivative instruments, by balance sheet category and accounting designation, as of March 31, 2020 and December 31, 2019.

COMPOSITION OF DERIVATIVES BY BALANCE SHEET CATEGORY AND ACCOUNTING DESIGNATION

(in millions)

	Fair Value Hedges				
	Shortcut Method	Long-Haul Method	Cash Flow Hedges	Economic Hedges	Total
March 31, 2020					
Advances	$ 13,903	$ 1,140	$ —	$ 255	$ 15,298
Investments	—	16,040	—	4,203	20,243
Mortgage loans held for portfolio	—	—	—	589	589
Consolidated obligation bonds	—	17,802	—	—	17,802
Consolidated obligation discount notes	—	—	1,066	—	1,066
Intermediary positions	—	—	—	507	507
Other	—	—	—	925	925
Total notional balance	$ 13,903	$ 34,982	$ 1,066	$ 6,479	$ 56,430
December 31, 2019					
Advances	$ 9,104	$ 998	$ —	$ 255	$ 10,357
Investments	—	16,115	—	4,203	20,318
Mortgage loans held for portfolio	—	—	—	517	517
Consolidated obligation bonds	—	19,861	—	—	19,861
Consolidated obligation discount notes	—	—	1,043	1,000	2,043
Intermediary positions	—	—	—	922	922
Other	—	—	—	925	925
Total notional balance	$ 9,104	$ 36,974	$ 1,043	$ 7,822	$ 54,943

As a result of statutory and regulatory requirements emanating from the Dodd-Frank Act, certain derivative transactions that the Bank enters into are required to be cleared through a third-party central clearinghouse. As of March 31, 2020, the Bank had cleared trades outstanding with notional amounts totaling $33.9 billion. Cleared trades are subject to initial and variation margin requirements established by the clearinghouse and its clearing members. Collateral (or variation margin on daily settled derivative contracts) is typically delivered/paid (or returned/received) daily and, unlike bilateral derivatives, is not subject to any maximum unsecured credit exposure thresholds. The fair values of all interest rate derivatives (including accrued interest receivables and payables) with each clearing member of each clearinghouse are offset for purposes of measuring credit exposure and determining initial and variation margin requirements. With cleared transactions, the Bank is exposed to credit risk in the event that the clearinghouse or the clearing member fails to meet its obligations to the Bank. The Bank has determined that the exercise by a non-defaulting party of the setoff rights incorporated in its cleared derivative transactions should be upheld in the event of a default, including a bankruptcy, insolvency or similar proceeding involving the clearinghouse or any of its clearing members or both.

The Bank has transacted some of its interest rate exchange agreements bilaterally with large financial institutions (with which it has in place master agreements). In doing so, the Bank has generally exchanged a defined market risk for the risk that the counterparty will not be able to fulfill its obligations in the future. The Bank manages this credit risk by spreading its transactions among as many highly rated counterparties as is practicable, by entering into master agreements with each of its non-member bilateral counterparties that include maximum unsecured credit exposure thresholds ranging from $50,000 to $500,000, and by monitoring its exposure to each counterparty on a daily basis. In addition, all of the Bank's master agreements with its bilateral counterparties include netting arrangements whereby the fair values of all interest rate derivatives (including accrued interest receivables and payables) with each counterparty are offset for purposes of measuring credit exposure. As of March 31, 2020, the notional balances of outstanding interest rate exchange agreements transacted with non-member bilateral counterparties totaled $22.2 billion.

Under the Bank's master agreements with its non-member bilateral counterparties, the unsecured credit exposure thresholds must be met before collateral is required to be delivered by one party to the other party. Once the counterparties agree to the valuations of the interest rate exchange agreements, and if it is determined that the unsecured credit exposure exceeds the

threshold, then, upon a request made by the unsecured counterparty, the party that has the unsecured obligation to the counterparty bearing the risk of the unsecured credit exposure generally must deliver sufficient collateral (or return a sufficient amount of previously remitted collateral) to reduce the unsecured credit exposure to zero (or, in the case of pledged securities, to an amount equal to the discount applied to the securities under the terms of the master agreement). Collateral is delivered (or returned) daily when these thresholds are met. The master agreements with the Bank's non-member bilateral counterparties require the delivery of collateral consisting of cash or very liquid, highly rated securities (generally consisting of U.S. government-guaranteed or agency debt securities) if credit risk exposures rise above the thresholds.

The notional amount of interest rate exchange agreements does not reflect the Bank's credit risk exposure, which is much less than the notional amount. The Bank's net credit risk exposure is based on the current estimated cost, on a present value basis, of replacing at current market rates all interest rate exchange agreements with individual counterparties, if those counterparties were to default, after taking into account the value of any cash and/or securities collateral held or remitted by the Bank. For counterparties with which the Bank is in a net gain position, the Bank has credit exposure when the collateral it is holding (if any) has a value less than the amount of the gain. For counterparties with which the Bank is in a net loss position, the Bank has credit exposure when it has delivered collateral with a value greater than the amount of the loss position.

The following table provides information regarding the Bank's derivative counterparty credit exposure as of March 31, 2020.

DERIVATIVES COUNTERPARTY CREDIT EXPOSURE
(dollars in millions)

Credit Rating[1]	Number of Bilateral Counterparties	Notional Principal[2]	Net Derivatives Fair Value Before Collateral	Cash Collateral Pledged To (From) Counterparty	Other Collateral Pledged To Counterparty	Net Credit Exposure
Non-member counterparties						
Asset positions with credit exposure						
Double-A	2	$ 50.0	$ 0.9	$ (0.6)	$ —	$ 0.3
Single-A[3]	5	2,600.5	7.8	(7.2)	—	0.6
Cleared derivatives [4]	—	33,874.1	45.1	0.3	888.7	934.1
Liability positions with credit exposure						
Single-A	6	6,440.0	(98.3)	143.5	—	45.2
Triple-B	3	8,877.1	(465.4)	510.6	—	45.2
Total derivative positions with non-member counterparties to which the Bank had credit exposure	16	51,841.7	(509.9)	646.6	888.7	1,025.4
Asset positions without credit exposure	4	3,650.6	16.7	(17.8)	—	—
Liability positions without credit exposure	1	628.0	(1.1)	1.1	—	—
Total derivative positions with non-member counterparties to which the Bank did not have credit exposure	5	4,278.6	15.6	(16.7)	—	—
Total non-member counterparties	21	56,120.3	(494.3)	$ 629.9	$ 888.7	$ 1,025.4
Member institutions						
Interest rate exchange agreements [5]						
Asset positions	6	63.4	8.4			
Liability positions	2	190.0	(1.0)			
Mortgage delivery commitments	—	56.1	0.2			
Total member institutions	8	309.5	7.6			
Total	29	$ 56,429.8	$ (486.7)			

(1) Credit ratings shown in the table reflect the lowest rating from Moody's or S&P and are as of March 31, 2020.

(2) Includes amounts that had not settled as of March 31, 2020.

(3) The figures for asset positions with credit exposure to counterparties rated single-A included transactions with a counterparty that is affiliated with a member of the Bank. Transactions with that counterparty had an aggregate notional principal of $1.2 billion and a credit exposure of $20.0 million.

(4) Cleared derivatives with an aggregative notional principal balance of $10.0 billion were transacted with a clearinghouse rated double-A and cleared derivatives with an aggregative notional principal balance of $23.9 billion were transacted with a clearinghouse rated single-A.

(5) This product offering and the collateral provisions associated therewith are discussed in the paragraph below.

The Bank offers interest rate swaps, caps and floors to its members to assist them in meeting their risk management objectives. In derivative transactions with its members, the Bank acts as an intermediary by entering into an interest rate exchange agreement with the member and then entering into an offsetting interest rate exchange agreement with one of the Bank's non-member derivative counterparties discussed above. When entering into interest rate exchange agreements with its members, the Bank requires the member to post eligible collateral in an amount equal to the sum of the net market value of the member's derivative transactions with the Bank (if the value is positive to the Bank) plus a percentage of the notional amount of any interest rate swaps, with market values determined on at least a monthly basis. Eligible collateral for derivative transactions consists of collateral that is eligible to secure advances and other obligations under the member's Advances and Security Agreement with the Bank.

The Dodd-Frank Act changed the regulatory framework for derivative transactions that are not subject to mandatory clearing requirements (uncleared trades). While the Bank expects to be able in certain instances to continue to enter into uncleared trades on a bilateral basis, those transactions will be subject to new regulatory requirements, including (if certain thresholds are met) minimum initial margin requirements imposed by regulators. For additional discussion, see Item 1 - Business - Legislative and Regulatory Developments in the 2019 10-K.

Potential LIBOR Phase-Out

As discussed in "Item 1A — Risk Factors" in the 2019 10-K, LIBOR may cease to be available after December 31, 2021. Consequently, the Bank has begun preparing for this possibility and the associated transition to an alternative reference rate (e.g., SOFR). Among other things, a permanent discontinuation of LIBOR will necessitate fallback language in derivative contracts extending past 2021 that reference LIBOR, as well as changes in the Bank's risk management practices. In response to the potential cessation of LIBOR, the Bank is no longer offering LIBOR-indexed advances with maturities after December 31, 2021, nor is it issuing LIBOR-indexed consolidated obligations with maturities after that date.

On September 27, 2019, the Finance Agency issued a supervisory letter to the FHLBanks relating to their preparations for the potential phase-out of LIBOR after December 31, 2021. Under the supervisory letter, with limited exceptions, the FHLBanks were directed, by December 31, 2019, to no longer purchase LIBOR-indexed investments which mature after December 31, 2021 and, by March 31, 2020, to no longer issue, make, purchase or otherwise enter into financial liabilities, derivatives or other assets that reference LIBOR and which mature after December 31, 2021. In light of the market volatility caused by the COVID-19 pandemic, the Finance Agency (on March 16, 2020) extended the date after which the FHLBanks can no longer issue, make, purchase or otherwise enter into financial liabilities, derivatives or other assets that reference LIBOR and which mature after December 31, 2021 from March 31, 2020 to June 30, 2020, except for option-embedded products. This directive did not in any way modify the previous guidance relating to investments. As directed by the Finance Agency, the Bank no longer purchases LIBOR-indexed investments which mature after December 31, 2021 (nor does it purchase fixed rate investments which mature after that date that are hedged with LIBOR-indexed derivatives). On and after July 1, 2020 (or, for certain financial instruments with embedded options, April 1, 2020), the Bank will no longer issue, make, purchase or otherwise enter into financial liabilities, other derivatives or other assets that reference LIBOR and which mature after December 31, 2021.

The following table presents the Bank's LIBOR-indexed financial instruments by contractual maturity at March 31, 2020. Some of the Bank's derivatives contain call options which, if exercised, could result in earlier terminations.

LIBOR-INDEXED FINANCIAL INSTRUMENTS
(par/notional value, in millions)

	2020	2021	Thereafter	Total
Instruments with receipts indexed to LIBOR				
Advances (par value)	$ 325	$ 150	$ —	$ 475
Investments (par value)				
Non-MBS	—	—	40	40
MBS	—	—	1,052	1,052
LIBOR-indexed derivatives notional amount (receive leg)				
Cleared	1,229	3,757	18,765	23,751
Uncleared	761	584	8,726	10,071
Total par/notional amount	$ 2,315	$ 4,491	$ 28,583	$ 35,389
Instruments with payments indexed to LIBOR				
Consolidated obligations (par value)	$ 2,250	$ 1,000	$ —	$ 3,250
LIBOR-indexed derivatives notional amount (pay leg)				
Cleared	1,969	1,674	2,880	6,523
Uncleared	3,240	1,093	8,445	12,778
Total par/notional amount	$ 7,459	$ 3,767	$ 11,325	$ 22,551

At March 31, 2020, the Bank had outstanding standby bond purchase agreements totaling $738.4 million which expire in 2022, 2023, 2024 and 2025. Under the terms of these agreements, the Bank could be required to purchase and hold the subject bonds for a period of time. If this were to occur, the Bank would earn interest on the bonds at specified rates indexed to the greater of one-month LIBOR or the Federal Funds rate. For further discussion of these standby bond purchase agreements, see "Item 1. Financial Statements" (specifically, Note 17 on page 35 of this report).

Results of Operations

Net Income

Net income for the three months ended March 31, 2020 and 2019 was $51.6 million and $58.4 million, respectively. The Bank's net income for the three months ended March 31, 2020 represented an annualized return on average capital stock ("ROCS") of 8.28 percent. In comparison, the Bank's ROCS was 9.28 percent for the three months ended March 31, 2019. To derive the Bank's ROCS, net income is divided by average capital stock outstanding excluding stock that is classified as mandatorily redeemable capital stock. The factors contributing to the changes in the Bank's net income are discussed below.

Income Before Assessments

During the three months ended March 31, 2020 and 2019, the Bank's income before assessments was $57.3 million and $64.9 million, respectively. As discussed in more detail below, the $7.6 million decrease in income before assessments from period to period was attributable to a $26.4 million decrease in net interest income after provision for mortgage loan losses (primarily due to a change in fair value hedge ineffectiveness and an increase in the provision for mortgage loan losses), partially offset by a $18.4 million increase in other income and a $0.4 million decrease in other expense.

The components of income before assessments (net interest income, other income/loss and other expense) are discussed in more detail in the following sections.

Net Interest Income After Provision for Mortgage Loan Losses

For the three months ended March 31, 2020, the Bank's net interest income (after provision for mortgage loan losses) was $45.6 million compared to $72.0 million for the comparable period in 2019. The $26.4 million decrease in net interest income for the three-month period ended March 31, 2020, as compared to the corresponding period in 2019, was due primarily to a $27.6 million unfavorable change in fair value hedge ineffectiveness from period to period (which, as further discussed below, is largely offset by mitigation activities undertaken by the Bank, the results of which are recorded in other income/loss) and a $0.9 million increase in the provision for mortgage loan losses, which was primarily due to an increase in expected credit losses as a result of the COVID-19 pandemic. The impact of these factors was offset in part by an increase in the average balances of the Bank's interest-earning assets. The Bank's average balance of interest-earning assets increased from $68.1 billion during the three months ended March 31, 2019 to $73.0 billion during the comparable period in 2020.

For the three months ended March 31, 2020 and 2019, the Bank's net interest margin was 26 basis points and 42 basis points, respectively. Net interest margin, or net interest income as a percentage of average earning assets, is a function of net interest spread and the rates of return on assets funded by the investment of the Bank's capital. Net interest spread is the difference between the yield on interest-earning assets and the cost of interest-bearing liabilities. The Bank's net interest spread was 17 basis points and 26 basis points for the three months ended March 31, 2020 and 2019, respectively. The Bank's net interest margin and net interest spread are impacted positively or negatively, as the case may be, by the amount of fair value hedge ineffectiveness recorded in net interest income.

Accounting Standards Update 2017-12, *"Targeted Improvements to Accounting for Hedging Activities"* ("ASU 2017-12"), requires that, for fair value hedges, the entire change in the fair value of the hedging instrument included in the assessment of hedge effectiveness along with the changes in the fair value of the hedged item attributable to the hedged risk be presented in the same income statement line that is used to present the earnings effect of the hedged item. For the three months ended March 31, 2020 and 2019, the fair value hedge ineffectiveness amounts reported in net interest income reduced interest income on advances by $865,000 and $27,000, respectively, reduced interest income on available-for-sale securities by $33,268,000 and $9,569,000, respectively, and increased (reduced) interest expense on consolidated obligations by $2,757,000 and $(256,000), respectively.

The higher yielding, longer duration fixed-rate GSE commercial MBS ("CMBS") and GSE debentures held in the Bank's available-for-sale securities portfolio (all of which have been hedged with fixed-for-floating interest rate swaps in long-haul hedging relationships) expose the Bank to periodic earnings variability in the form of fair value hedge ineffectiveness. The hedge ineffectiveness gains and losses associated with these particular relationships are attributable in large part to the use of different discount curves to value the interest rate swaps (the overnight index swap curve) and the GSE CMBS/GSE debentures (LIBOR plus a constant spread). Notwithstanding the hedge ineffectiveness gains and losses, these hedging relationships have been, and are expected to continue to be, highly effective in achieving offsetting changes in fair values attributable to the hedged risk. While the ineffectiveness-related gains and losses associated with these hedging relationships can be significant when evaluated in the context of the Bank's net income, they are relatively small when expressed as a percentage of the values of the positions. Because the Bank expects to hold these interest rate swaps to maturity, the unrealized ineffectiveness-related gains (or losses) associated with its holdings of GSE CMBS and GSE debentures are expected to be transitory, meaning that they will reverse in future periods in the form of ineffectiveness-related losses (or gains).

The contribution of earnings from the Bank's invested capital to the net interest margin (the impact of non-interest bearing funds) was 9 basis points during the three months ended March 31, 2020, compared to 16 basis points during the three months ended March 31, 2019. The decrease in the impact of non-interest bearing funds for the three months ended March 31, 2020, as compared to the corresponding period in 2019, is primarily due to the decrease in short-term interest rates between the periods.

The following table presents average balance sheet amounts together with the total dollar amounts of interest income and expense and the weighted average interest rates of major earning asset categories and the funding sources for those earning assets for the three months ended March 31, 2020 and 2019.

YIELD AND SPREAD ANALYSIS
(dollars in millions)

	For the Three Months Ended March 31,					
	2020			2019		
	Average Balance	Interest Income/ Expense	Average Rate[1]	Average Balance	Interest Income/ Expense	Average Rate[1]
Assets						
Interest-bearing deposits [2]	$ 2,026	$ 7	1.35%	$ 1,785	$ 11	2.53%
Securities purchased under agreements to resell	1,852	7	1.59%	4,036	25	2.54%
Federal funds sold	2,857	7	0.99%	3,039	19	2.47%
Investments						
Trading	7,117	30	1.68%	3,462	18	2.08%
Available-for-sale [3]	16,963	65	1.53%	15,662	119	3.04%
Held-to-maturity [3]	1,189	6	2.18%	1,452	11	3.04%
Advances [4]	36,832	163	1.77%	36,325	238	2.62%
Mortgage loans held for portfolio	4,184	34	3.25%	2,320	23	3.98%
Total earning assets	73,020	319	1.75%	68,081	464	2.73%
Cash and due from banks	56			44		
Other assets	265			282		
Derivatives netting adjustment [2]	(338)			(147)		
Fair value adjustment on available-for-sale securities [3]	125			137		
Adjustment for net non-credit portion of other-than-temporary impairments on held-to-maturity securities [3]	(8)			(10)		
Total assets	$ 73,120	319	1.75%	$ 68,387	464	2.71%
Liabilities and Capital						
Interest-bearing deposits [2]	$ 1,404	4	1.16%	$ 826	5	2.42%
Consolidated obligations						
Bonds	36,177	154	1.70%	29,854	191	2.56%
Discount notes	31,503	115	1.46%	32,871	196	2.39%
Mandatorily redeemable capital stock and other borrowings	7	—	1.66%	8	—	2.87%
Total interest-bearing liabilities	69,091	273	1.58%	63,559	392	2.47%
Other liabilities	557			1,168		
Derivatives netting adjustment [2]	(338)			(147)		
Total liabilities	69,310	273	1.57%	64,580	392	2.43%
Total capital	3,810			3,807		
Total liabilities and capital	$ 73,120		1.49%	$ 68,387		2.29%
Net interest income		$ 46			$ 72	
Net interest margin			0.26%			0.42%
Net interest spread			0.17%			0.26%
Impact of non-interest bearing funds			0.09%			0.16%

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

(2) The Bank offsets the fair value amounts recognized for the right to reclaim cash collateral or the obligation to return cash collateral against the fair value amounts recognized for derivative instruments transacted under a master netting agreement or other similar arrangement. The average balances of interest-bearing deposit assets for the three months ended March 31, 2020 and 2019 in the table above include $324 million and $134 million, respectively, which are classified as derivative assets/liabilities on the statements of condition. In addition, the average balances of interest-bearing deposit liabilities for the three months ended March 31, 2020 and 2019 in the table above include $14 million and $12 million, respectively, which are classified as derivative assets/liabilities on the statements of condition.

(3) Average balances for available-for-sale and held-to-maturity securities are calculated based upon amortized cost.

(4) Interest income and average rates include net prepayment fees on advances.

Changes in both volume (i.e., average balances) and interest rates influence changes in net interest income and net interest margin. The following table summarizes changes in interest income and interest expense between the three-month periods ended March 31, 2020 and 2019. Changes in interest income and interest expense that cannot be attributed to either volume or rate have been allocated to the volume and rate categories based upon the proportion of the absolute value of the volume and rate changes.

RATE AND VOLUME ANALYSIS
(in millions)

	For the Three Months Ended March 31, 2020 vs. 2019		
	Volume	**Rate**	**Total**
Interest income			
Interest-bearing deposits	$ 1	$ (5)	$ (4)
Securities purchased under agreements to resell	(11)	(7)	(18)
Federal funds sold	(1)	(11)	(12)
Investments			
Trading	16	(4)	12
Available-for-sale	9	(63)	(54)
Held-to-maturity	(2)	(3)	(5)
Advances	3	(78)	(75)
Mortgage loans held for portfolio	16	(5)	11
Total interest income	31	(176)	(145)
Interest expense			
Interest-bearing deposits	2	(3)	(1)
Consolidated obligations			
Bonds	35	(72)	(37)
Discount notes	(8)	(73)	(81)
Mandatorily redeemable capital stock and other borrowings	—	—	—
Total interest expense	29	(148)	(119)
Changes in net interest income	$ 2	$ (28)	$ (26)

Other Income (Loss)

The following table presents the various components of other income (loss) for the three months ended March 31, 2020 and 2019.

OTHER INCOME (LOSS)
(in thousands)

	Three Months Ended March 31,	
	2020	**2019**
Net interest income (expense) associated with:		
Member/offsetting derivatives	$ 32	$ 62
Economic hedge derivatives related to advances	939	—
Economic hedge derivatives related to trading securities	(3,573)	76
Economic hedge derivatives related to available-for-sale securities	(3)	(147)
Economic hedge derivatives related to consolidated obligation discount notes	(39)	—
Economic hedge derivatives related to mortgage loans held for portfolio	(314)	(165)
Other stand-alone economic hedge derivatives	74	(849)
Total net interest expense associated with economic hedge derivatives	(2,884)	(1,023)
Gains (losses) related to economic hedge derivatives		
Interest rate swaps		
Advances	(7,737)	—
Available-for-sale securities	(233)	90
Trading securities	(23,105)	(604)
Mortgage loans held for portfolio	(8,907)	(296)
Consolidated obligation discount notes	24	—
Other stand-alone economic hedge derivatives	32,899	9,426
Interest rate swaptions related to mortgage loans held for portfolio	6,826	(229)
Mortgage delivery commitments	2,385	1,261
Interest rate caps related to held-to-maturity securities	2	(5)
Member/offsetting swaps, caps and floors	(7)	39
Total fair value gains related to economic hedge derivatives	2,147	9,682
Price alignment amount on daily settled derivative contracts	20	107
Total net gains (losses) on derivatives and hedging activities	(717)	8,766
Net gains on trading securities	33,099	3,227
Net gains (losses) on other assets carried at fair value	(1,633)	913
Gains on sales of available-for-sale securities	—	440
Service fees	533	542
Letter of credit fees	3,592	2,780
Other, net	516	309
Total other	36,107	8,211
Total other income	$ 35,390	$ 16,977

Net Interest Settlements

Net interest income (expense) associated with economic hedge derivatives including, but not limited to, those associated with non-qualifying fair value hedging relationships is recorded in net gains (losses) on derivatives and hedging activities. Net interest income (expense) associated with derivatives in qualifying fair value hedging relationships is recorded in net interest income in the same income statement line that is used to present the earnings effect of the hedged item.

Fair Value Hedge Ineffectiveness

The Bank uses interest rate swaps to hedge the risk of changes in the fair value of some of its advances and consolidated obligation bonds and, currently, all of its available-for-sale securities. These hedging relationships are designated as fair value hedges. To the extent these relationships qualify for hedge accounting, changes in the fair values of both the derivative (the interest rate swap) and the hedged item (limited to changes attributable to the hedged risk) are recorded in net interest income in the same income statement line that is used to present the earnings effect of the hedged item. To the extent that the Bank's fair value hedging relationships do not qualify for hedge accounting, or cease to qualify because they are determined to be

ineffective, only the change in fair value of the derivative is recorded in earnings as net gains (losses) on derivatives and hedging activities (in this case, there is no offsetting change in fair value of the hedged item). For the three months ended March 31, 2020 and 2019, the net gains (losses) on derivatives associated with specific advances, available-for-sale securities and consolidated obligation bonds that did not qualify for hedge accounting, or ceased to qualify because they were determined to be ineffective, totaled $(7,970,000) and $90,000, respectively.

Economic Hedge Derivatives

Notwithstanding the transitory nature of the ineffectiveness-related gains and losses associated with the Bank's available-for-sale securities portfolio (discussed above), the Bank has entered into several derivative transactions in an effort to mitigate a portion of the periodic earnings variability that can result from those fair value hedging relationships. At both March 31, 2020 and December 31, 2019, the notional balance of these derivatives totaled $425 million. For the three months ended March 31, 2020 and 2019, the gains associated with these stand-alone economic hedge derivatives were $32.9 million and $9.4 million, respectively.

The Bank has invested in residential mortgage loans. A portion of the interest rate and prepayment risk associated with the Bank's mortgage loan portfolio is managed through the use of interest rate swaps and swaptions. The net change in the fair values of these interest rate swaps and swaptions were losses of $2.1 million and $0.5 million for the three months ended March 31, 2020 and 2019, respectively. In addition, the Bank enters into delivery commitments associated with the purchase of the mortgage loans. The fair value changes associated with mortgage delivery commitments (representing net unrealized gains from the commitment date to the settlement date) were $2.4 million and $1.3 million for the three months ended March 31, 2020 and 2019, respectively.

As discussed previously in the section entitled “Financial Condition — Derivatives and Hedging Activities," the Bank offers interest rate swaps, caps and floors to its members to assist them in meeting their risk management objectives. In derivative transactions with its members, the Bank acts as an intermediary by entering into an interest rate exchange agreement with the member and then entering into an offsetting interest rate exchange agreement with one of the Bank’s non-member derivative counterparties. The net change in the fair values of derivatives transacted with members and the offsetting derivatives was $(7,000) and $39,000 for the three months ended March 31, 2020 and 2019, respectively.

Price Alignment Amount

Effective January 3, 2017, one of the Bank's two clearinghouse counterparties made certain amendments to its rulebook that changed the legal characterization of variation margin payments on cleared derivatives to settlements on the contracts. Effective January 16, 2018, the Bank's other clearinghouse counterparty made similar amendments to its rulebook. Prior to the dates upon which these amendments became effective, the variation margin payments were in each case characterized as collateral pledged to secure outstanding credit exposure on the derivative contracts. The Bank receives or pays a price alignment amount on the cumulative variation margin payments associated with these contracts. The price alignment amount approximates the amount of interest the Bank would have received or paid had the variation margin payments continued to be characterized as collateral. The price alignment amount associated with derivatives in qualifying fair value hedging relationships is recorded in net interest income in the same income statement line that is used to present the earnings effect of the hedged item. The price alignment amount associated with economic hedge derivatives including, but not limited to, those associated with non-qualifying fair value hedging relationships, is recorded in net gains (losses) on derivatives and hedging activities.

Other

During the three months ended March 31, 2019, the Bank sold approximately $411 million of GSE CMBS classified as available-for-sale securities. The aggregate gains realized on these sales totaled $0.4 million. There were no other sales of long-term investments during the three months ended March 31, 2020 or 2019.

During the three months ended March 31, 2020 and 2019, the Bank held U.S. Treasury Bills and U.S. Treasury Notes, all of which were classified as trading securities. Due to fluctuations in interest rates, the aggregate gains on these investments were $33.1 million and $3.2 million for the three months ended March 31, 2020 and 2019, respectively. The Bank occasionally hedges the risk of changes in the fair value of some of the U.S. Treasury Notes held in its short-term liquidity portfolio. For the three months ended March 31, 2020 and 2019, the losses associated with these stand-alone derivatives were $23.1 million and $0.6 million, respectively.

The Bank has a small balance of marketable equity securities consisting solely of mutual fund investments associated with its non-qualified deferred compensation plans. These securities are carried at fair value and included in other assets on the statements of condition. The fair value gains (losses) on these securities totaled $(1.6) million and $0.9 million for the three months ended March 31, 2020 and 2019, respectively. The gains or losses on the securities are offset by a corresponding increase or decrease in amounts owed to participants in the deferred compensation plans, the expense (or credit) for which is recorded in compensation and benefits expense (in the case of employees) or other operating expenses (in the case of directors).

Letter of credit fees totaled $3.6 million for the three months ended March 31, 2020, compared to $2.8 million for the corresponding period in 2019. The increase in letter of credit fees for the three months ended March 31, 2020, as compared to the corresponding period in 2019, was due to an increase in the amount of letters of credit outstanding. At March 31, 2020 and 2019, outstanding letters of credit totaled $22.4 billion and $18.7 billion, respectively.

Other Expense

Total other expense, which includes the Bank's compensation and benefits, other operating expenses, discretionary grants and donations, derivative clearing fees and its proportionate share of the costs of operating the Finance Agency and the Office of Finance, totaled $23.7 million for the three months ended March 31, 2020 compared to $24.1 million for the corresponding period in 2019.

Compensation and benefits were $11.6 million for the three months ended March 31, 2020 compared to $13.6 million for the corresponding period in 2019. The $2.0 million decrease in compensation and benefits for the three months ended March 31, 2020, as compared to the corresponding period in 2019, was due largely to a decrease in amounts due to employees under the Bank's non-qualified deferred compensation plans, which was due to a decline in the fair value of the assets associated with those plans in 2020 as compared to an increase in 2019. The Bank's average headcount was 201 and 198 employees for the three months ended March 31, 2020 and 2019, respectively. At March 31, 2020, the Bank employed 199 people, a decrease of 4 employees from December 31, 2019.

Other operating expenses for the three months ended March 31, 2020 were $9.2 million compared to $8.0 million for the corresponding period in 2019. The increase in other operating expenses for the three months ended March 31, 2020, as compared to the corresponding period in 2019, resulted primarily from increases in professional services, independent contractor costs and transaction services fees associated with the Bank's mortgage loan program (due to higher mortgage loan balances). The transaction service fees are paid to the FHLBank of Chicago as compensation for administering the MPF Program.

Discretionary grants and donations were $146,000 for the three months ended March 31, 2020 compared to $38,000 for the corresponding period in 2019. Discretionary grants and donations for the three months ended March 31, 2020 and 2019 were comprised of grants made under the Bank's Housing Assistance for Veterans program, which is designed to provide grants to households of veterans or active service members who were disabled as a result of an injury during their active military service since September 11, 2001.

Derivative clearing fees were approximately $0.3 million for both the three months ended March 31, 2020 and 2019.

The Bank, together with the other FHLBanks, is assessed for the costs of operating the Office of Finance and a portion of the costs of operating the Finance Agency. The Bank's allocated share of these expenses totaled approximately $2.4 million for the three months ended March 31, 2020 as compared to $2.1 million for the corresponding period in 2019.

AHP Assessments

While the Bank is exempt from all federal, state and local income taxes, it is obligated to set aside amounts for its Affordable Housing Program ("AHP").

As required by statute, each year the Bank contributes 10 percent of its earnings (as adjusted for interest expense on mandatorily redeemable capital stock) to its AHP. The AHP provides grants that members can use to support affordable housing projects in their communities. Generally, the Bank's AHP assessment is derived by adding interest expense on mandatorily redeemable capital stock to income before assessments; the result of this calculation is then multiplied by 10 percent. The Bank's AHP assessments totaled $5.7 million and $6.5 million for the three months ended March 31, 2020 and 2019, respectively.

Critical Accounting Policies and Estimates

A discussion of the Bank's critical accounting policies and the extent to which management uses judgment and estimates in applying those policies is provided in the 2019 10-K. There were no substantive changes to the Bank's critical accounting policies, or the extent to which management uses judgment and estimates in applying those policies, during the three months ended March 31, 2020.

Liquidity and Capital Resources

In order to meet members' credit needs and the Bank's financial obligations, the Bank maintains a portfolio of money market instruments typically consisting of overnight federal funds, overnight reverse repurchase agreements, overnight interest-bearing deposits, U.S. Treasury Bills and U.S. Treasury Notes. From time to time, the Bank may also invest in short-term commercial paper and GSE discount notes. Beyond those amounts that are required to meet members' credit needs and its own obligations, the Bank typically holds additional balances of short-term investments that fluctuate as the Bank invests the proceeds of debt

issued to replace maturing and called liabilities, as the balance of deposits changes, as the returns provided by short-term investments vary relative to the costs of the Bank's discount notes, and as the level of liquidity needed to satisfy Finance Agency requirements changes. At March 31, 2020, the Bank's short-term liquidity holdings were comprised of $6.0 billion of overnight federal funds sold, $4.5 billion of U.S. Treasury Notes, $1.8 billion of overnight interest-bearing deposits and $1.1 billion of excess cash held at the Federal Reserve.

The Bank's primary source of funds is the proceeds it receives from the issuance of consolidated obligation bonds and discount notes in the capital markets. Historically, the FHLBanks have issued debt throughout the business day in the form of discount notes and bonds with a wide variety of maturities and structures. Generally, the Bank has access to the capital markets as needed during the business day to acquire funds to meet its needs.

In addition to the liquidity provided from the proceeds of the issuance of consolidated obligations, the Bank also maintains access to wholesale funding sources such as federal funds purchased and securities sold under agreements to repurchase (e.g., borrowings secured by its investments in MBS and/or agency debentures). Furthermore, the Bank has access to borrowings (typically short-term) from the other FHLBanks.

The 11 FHLBanks and the Office of Finance are parties to the Federal Home Loan Banks P&I Funding and Contingency Plan Agreement, as amended and restated effective January 1, 2017 (the "Contingency Agreement"). The Contingency Agreement and related procedures are designed to facilitate the timely funding of principal and interest payments on FHLBank System consolidated obligations in the event that a FHLBank is not able to meet its funding obligations in a timely manner. The Contingency Agreement and related procedures provide for the issuance of overnight consolidated obligations ("Plan COs") directly to one or more FHLBanks that provide funds to avoid a shortfall in the timely payment of principal and interest on any consolidated obligations for which another FHLBank is the primary obligor. The direct placement by a FHLBank of consolidated obligations with another FHLBank is permitted only in those instances when direct placement of consolidated obligations is necessary to ensure that sufficient funds are available to timely pay all principal and interest on FHLBank System consolidated obligations due on a particular day. Through the date of this report, no Plan COs have ever been issued pursuant to the terms of the Contingency Agreement.

On occasion, and as an alternative to issuing new debt, the Bank may assume the outstanding consolidated obligations for which other FHLBanks are the original primary obligors. This occurs in cases where the original primary obligor may have participated in a large consolidated obligation issue to an extent that exceeded its immediate funding needs in order to facilitate better market execution for the issue. The original primary obligor might then warehouse the funds until they were needed, or make the funds available to other FHLBanks. Transfers may also occur when the original primary obligor's funding needs change, and that FHLBank offers to transfer debt that is no longer needed to other FHLBanks. Transferred debt is typically fixed-rate, fixed-term, non-callable debt, and may be in the form of discount notes or bonds. The Bank participates in such transfers of funding from other FHLBanks when the transfer represents favorable pricing relative to a new issue of consolidated obligations with similar features. The Bank did not assume any consolidated obligations from other FHLBanks during the three months ended March 31, 2020 or 2019.

Through March 30, 2019, the Bank was required, pursuant to guidance issued by the Finance Agency, to meet two daily liquidity standards, each of which assumed that the Bank was unable to access the market for consolidated obligations during a prescribed period. The first standard required the Bank to maintain sufficient funds to meet its obligations for 15 days under a scenario in which it was assumed that members did not renew any maturing, prepaid or called advances. The second standard required the Bank to maintain sufficient funds to meet its obligations for 5 days under a scenario in which it was assumed that members renewed all maturing and called advances, with certain exceptions for very large, highly rated members.

Beginning on March 31, 2019, the two liquidity standards discussed in the preceding paragraph were replaced by a single, more stringent requirement. On August 23, 2018, the Finance Agency issued an Advisory Bulletin and accompanying supervisory letter that, together, set forth the Finance Agency's expectations with respect to the maintenance of sufficient liquidity to enable the FHLBanks to provide advances and fund letters of credit during a sustained capital markets disruption. More specifically, the Advisory Bulletin (hereinafter referred to as the "Liquidity AB") sets forth the Finance Agency's expectations with respect to base case liquidity and funding gaps, among other things. The Liquidity AB sets forth ranges for the prescribed base case liquidity and funding gap measures and the supervisory letter identified the initial thresholds within those ranges that the Finance Agency believed were appropriate in light of then existing market conditions.

With respect to base case liquidity, the Bank is required to maintain a positive cash balance during a prescribed period of time ranging from 10 to 30 calendar days assuming no access to the market for consolidated obligations or other unsecured funding sources and the renewal of all advances that are scheduled to mature during the measurement period. Initially, the Finance Agency indicated that it would consider a FHLBank to have adequate reserves of liquid assets if, from March 31, 2019 through December 30, 2019, it maintained 10 calendar days or more of positive daily cash balances and if, on and after December 31, 2019, it maintained 20 calendar days or more of positive daily cash balances. The supervisory letter sets forth the cash flow assumptions to be used by the FHLBanks which include, among other things, a reserve for potential draws on standby letters of

credit and the inclusion of uncommitted/unencumbered U.S. Treasury securities with a remaining maturity no greater than 10 years which are classified as trading or available-for-sale securities as a cash inflow one business day after measurement. Effective March 31, 2019, the Liquidity AB rescinded the 5-day and 15-day liquidity standards discussed above.

Funding gaps measure the difference between a FHLBank's assets and liabilities that are scheduled to mature during a specified period, expressed as a percentage of the FHLBank's total assets. Depending on conditions in the financial markets, the Finance Agency believes (as stated in the Liquidity AB) that the FHLBanks should operate so as not to exceed a funding gap ratio between negative 10 percent and negative 20 percent for a three-month time horizon and between negative 25 percent and negative 35 percent for a one-year time horizon. These limits are designed to reduce the liquidity risks associated with a mismatch in a FHLBank's asset and liability maturities, including an undue reliance on short-term debt funding, which may increase a FHLBank's debt rollover risk. Initially, the Finance Agency indicated that it would consider a FHLBank to have adequate liquidity to address funding gap risks if, on and after December 31, 2018, the FHLBank maintained a funding gap ratio of negative 15 percent or better for the three-month time horizon and negative 30 percent or better for the one-year time horizon. For purposes of calculating the funding gap ratios, the FHLBanks may include estimates of expected cash inflows, including anticipated prepayments, for mortgage loans and mortgage-backed securities. In addition, uncommitted/ unencumbered U.S. Treasury securities with a remaining maturity no greater than 10 years which are classified as trading securities are treated as maturing assets in the three-month time horizon regardless of maturity.

As a result of the deterioration in financial market conditions due to the COVID-19 outbreak, the Finance Agency temporarily revised its guidance with respect to base case liquidity and funding gaps. On March 3, 2020, the Finance Agency indicated that the FHLBanks should maintain no less than 10 calendar days of positive daily cash balances through April 30, 2020 and that the FHLBanks should then return to 20 calendar days or more of positive daily cash balances by September 30, 2020. On March 12, 2020, the Finance Agency increased (through July 30, 2020) the funding gap ratios for the three-month and one-year time horizons to negative 25 percent or better and negative 40 percent or better, respectively. By September 30, 2020, the funding gap ratios for the three-month and one-year time horizons should not exceed negative 20 percent and negative 35 percent, respectively. By December 31, 2020, the funding gap ratios should not exceed the limits that were in place prior to the COVID-19 outbreak. The Bank was in compliance with the applicable base case liquidity requirements at all times during the three months ended March 31, 2020. During this same period, the Bank maintained its funding gap ratios within the limits initially established by the Finance Agency (i.e., 15 percent or better for the three-month time horizon and 30 percent or better for the one-year time horizon).

The Bank's access to the capital markets has never been interrupted to an extent that the Bank's ability to meet its obligations was compromised and the Bank does not currently believe that its ability to issue consolidated obligations will be impeded to that extent in the future. If, however, the Bank were unable to issue consolidated obligations for an extended period of time, the Bank would eventually exhaust the availability of purchased federal funds (including borrowings from other FHLBanks) and repurchase agreements as sources of funds. It is also possible that an event (such as a natural disaster or a pandemic like COVID-19) that might impede the Bank's ability to raise funds by issuing consolidated obligations would also limit the Bank's ability to access the markets for federal funds purchased and/or repurchase agreements.

Under those circumstances, to the extent that the balance of principal and interest that came due on the Bank's debt obligations and the funds needed to pay its operating expenses exceeded the cash inflows from its interest-earning assets and proceeds from maturing assets, and if access to the market for consolidated obligations was not again available, the Bank would seek to access funding under the Contingency Agreement to repay any principal and interest due on its consolidated obligations. However, if the Bank were unable to raise funds by issuing consolidated obligations, it is likely that the other FHLBanks would have similar difficulties issuing debt. If funds were not available under the Contingency Agreement, the Bank's ability to conduct its operations would be compromised even earlier than if this funding source was available.

A summary of the Bank's contractual cash obligations and off-balance-sheet lending-related financial commitments by due date or remaining maturity as of December 31, 2019 is provided in the 2019 10-K. There have been no material changes in the Bank's contractual obligations outside the normal course of business during the three months ended March 31, 2020.

Recently Issued Accounting Guidance

For a discussion of recently issued accounting guidance, see "Item 1. Financial Statements" (specifically, Note 2 beginning on page 7 of this report).

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The following quantitative and qualitative disclosures about market risk should be read in conjunction with the quantitative and qualitative disclosures about market risk that are included in the 2019 10-K. The information provided in this item is intended to update the disclosures made in the 2019 10-K.

As a financial intermediary, the Bank is subject to interest rate risk. Changes in the level of interest rates, the slope of the interest rate yield curve, and/or the relationships (or spreads) between interest yields for different instruments have an impact on the Bank's estimated market value of equity and its earnings. This risk arises from a variety of instruments that the Bank enters into on a regular basis in the normal course of its business.

The terms of member advances, investment securities, and consolidated obligations may present interest rate risk and/or embedded option risk. As discussed in Management's Discussion and Analysis of Financial Condition and Results of Operations, the Bank makes extensive use of interest rate derivative instruments, primarily interest rate swaps, swaptions and caps, to manage the risk arising from these sources.

The Bank has investments in residential mortgage-related assets, primarily CMOs and MPF mortgage loans, both of which present prepayment risk. This risk arises from the mortgagors' option to prepay their mortgages, making the effective maturities of these mortgage-based assets relatively more sensitive to changes in interest rates and other factors that affect the mortgagors' decisions to repay their mortgages as compared to other long-term investment securities that do not have prepayment features. A decline in interest rates generally accelerates mortgage refinancing activity, thus increasing prepayments and thereby shortening the effective maturity of the mortgage-related assets. Conversely, rising rates generally slow prepayment activity and lengthen a mortgage-related asset's effective maturity.

The Bank has managed the potential prepayment risk embedded in mortgage assets by purchasing securities that maintain their original principal balance for a fixed number of years, by purchasing highly structured tranches of mortgage securities that substantially limit the effects of prepayment risk, by issuing a combination of callable and non-callable debt with varying maturities, and/or by using interest rate derivative instruments to offset prepayment risk specific both to particular securities and to the overall mortgage portfolio.

The Bank's Enterprise Market Risk Management Policy provides a risk management framework for the financial management of the Bank consistent with the strategic principles outlined in its Strategic Business Plan. The Bank develops its funding and hedging strategies to manage its interest rate risk within the risk limits established in its Enterprise Market Risk Management Policy.

The Enterprise Market Risk Management Policy articulates the Bank's tolerance for the amount of overall interest rate risk the Bank will assume by limiting the maximum estimated loss in market value of equity that the Bank would incur under simulated 200 basis point changes in interest rates to 15 percent of the estimated base case market value. As reflected in the table below, the Bank was in compliance with this limit at March 31, 2020 and December 31, 2019.

As part of its ongoing risk management process, the Bank calculates an estimated market value of equity for a base case interest rate scenario and for interest rate scenarios that reflect parallel interest rate shocks. The base case market value of equity is calculated by determining the estimated fair value of each instrument on the Bank's balance sheet, and subtracting the estimated aggregate fair value of the Bank's liabilities from the estimated aggregate fair value of the Bank's assets. For purposes of these calculations, mandatorily redeemable capital stock is treated as equity rather than as a liability. The fair values of the Bank's financial instruments (both assets and liabilities) are determined using either vendor prices or a pricing model. For those instruments for which a pricing model is used, the calculations are based upon parameters derived from market conditions existing at the time of measurement, and are generally determined by discounting estimated future cash flows at the replacement (or similar) rate for new instruments of the same type with the same or very similar characteristics. The market value of equity calculations include non-financial assets and liabilities, such as premises and equipment, other assets, payables for AHP, and other liabilities at their recorded carrying amounts.

For purposes of compliance with the Bank's Enterprise Market Risk Management Policy limit on estimated losses in market value, market value of equity losses are defined as the estimated net sensitivity of the value of the Bank's equity (the net value of its portfolio of assets, liabilities and interest rate derivatives) to 200 basis point parallel shifts in interest rates.

The following table provides the Bank's estimated base case market value of equity and its estimated market value of equity under up and down 200 basis point interest rate shock scenarios (and, for comparative purposes, its estimated market value of equity under up and down 100 basis point interest rate shock scenarios) as of December 31, 2019 and March 31, 2020. In addition, the table provides the percentage change in estimated market value of equity under each of these shock scenarios as of those dates.

MARKET VALUE OF EQUITY
(dollars in billions)

		Up 200 Basis Points[1][2]		Down 200 Basis Points[1][3]		Up 100 Basis Points[1][2]		Down 100 Basis Points[1][3]	
	Base Case Market Value of Equity [1]	Estimated Market Value of Equity	Percentage Change from Base Case	Estimated Market Value of Equity	Percentage Change from Base Case	Estimated Market Value of Equity	Percentage Change from Base Case	Estimated Market Value of Equity	Percentage Change from Base Case
December 2019	$ 3.817	$ 3.814	(0.08)%	$ 3.792	(0.65)%	$ 3.857	1.05%	$ 3.729	(2.31)%
March 2020	3.584	3.880	8.26 %	4.274	19.25 %	3.778	5.41%	3.732	4.13 %

(1) The market value of equity figures reflected in the table were derived in accordance with Finance Agency guidance. The Bank has on its balance sheet long-term, fixed-rate, putable advances that can be terminated by the Bank on specified future dates pursuant to a put option purchased from the member. These advances are hedged with interest rate swaps where the Bank pays a fixed-rate coupon and receives a variable-rate coupon, and sells a call option to the swap counterparty pursuant to which that counterparty can cancel the swap on specified future dates. The call/put option dates mirror each other throughout the life of the instruments. Given the different discount curves that are used to value the putable advances and the associated cancelable interest rate swaps, the modeled results can produce an outcome where the advance and the corresponding interest rate swap are not terminated on the same date. In practice, if the swap counterparty calls the interest rate swap, the Bank concurrently puts the advance. After adjusting the model to more closely align the put dates of the advances with the projected call dates of the associated interest rate swaps, the Bank's market value of equity figures as of March 31, 2020 were as follows (dollars in billions with the percentage change from the adjusted base case): base case - $3.901; up 200 scenario - $3.879 (-0.56%); down 200 scenario - $4.198 (+7.61%); up 100 scenario - $3.878 (-0.59%); and down 100 scenario - $4.142 (+6.18%). As of December 31, 2019, the comparable figures were as follows: base case - $3.900; up 200 scenario - $3.811 (-2.28%); down 200 scenario - $4.075 (+4.49%); up 100 scenario - $3.862 (-0.97%); and down 100 scenario - $3.935 (+0.90%).

(2) In the up 100 and up 200 scenarios, the estimated market value of equity is calculated under assumed instantaneous +100 and +200 basis point parallel shifts in interest rates.

(3) In the down 100 and down 200 scenarios (including the scenarios presented in footnote 1 to the table), the estimated market value of equity is calculated under assumed instantaneous -100 and -200 basis point parallel shifts in interest rates, subject to a floor of 0.01 percent.

A related measure of interest rate risk is duration of equity. Duration is the weighted average maturity (typically measured in months or years) of an instrument's cash flows, weighted by the present value of those cash flows. As such, duration provides an estimate of an instrument's sensitivity to small changes in market interest rates. The duration of assets is generally expressed as a positive figure, while the duration of liabilities is generally expressed as a negative number. The change in value of a specific instrument for given changes in interest rates will generally vary in inverse proportion to the instrument's duration. As market interest rates decline, instruments with a positive duration are expected to increase in value, while instruments with a negative duration are expected to decrease in value. Conversely, as interest rates rise, instruments with a positive duration are expected to decline in value, while instruments with a negative duration are expected to increase in value.

The values of instruments having relatively longer (or higher) durations are more sensitive to a given interest rate movement than instruments having shorter durations; that is, risk increases as the absolute value of duration lengthens. For instance, the value of an instrument with a duration of three years will theoretically change by three percent for every one percentage point (100 basis point) change in interest rates, while the value of an instrument with a duration of five years will theoretically change by five percent for every one percentage point change in interest rates.

The duration of individual instruments may be easily combined to determine the duration of a portfolio of assets or liabilities by calculating a weighted average duration of the instruments in the portfolio. These combinations provide a single straightforward metric that describes the portfolio's sensitivity to interest rate movements. These additive properties can be applied to the assets and liabilities on the Bank's balance sheet. The difference between the combined durations of the Bank's assets and the combined durations of its liabilities is sometimes referred to as duration gap and provides a measure of the relative interest rate sensitivities of the Bank's assets and liabilities.

Duration gap is a useful measure of interest rate sensitivity but does not account for the effect of leverage, or the effect of the absolute duration of the Bank's assets and liabilities, on the sensitivity of its estimated market value of equity to changes in interest rates. The inclusion of these factors results in a measure of the sensitivity of the value of the Bank's equity to changes in market interest rates referred to as the duration of equity. Duration of equity is the market value weighted duration of assets minus the market value weighted duration of liabilities divided by the market value of equity.

The significance of an entity's duration of equity is that it can be used to describe the sensitivity of the entity's market value of equity to movements in interest rates. A duration of equity equal to zero would mean, within a narrow range of interest rate movements, that the Bank had neutralized the impact of changes in interest rates on the market value of its equity.

A positive duration of equity would mean, within a narrow range of interest rate movements, that for each one year of duration the estimated market value of the Bank's equity would be expected to decline by about 0.01 percent for every positive 0.01 percent change in the level of interest rates. A positive duration generally indicates that the value of the Bank's assets is more sensitive to changes in interest rates than the value of its liabilities (i.e., that the duration of its assets is greater than the duration of its liabilities).

Conversely, a negative duration of equity would mean, within a narrow range of interest rate movements, that for each one year of negative duration the estimated market value of the Bank's equity would be expected to increase by about 0.01 percent for every positive 0.01 percent change in the level of interest rates. A negative duration generally indicates that the value of the Bank's liabilities is more sensitive to changes in interest rates than the value of its assets (i.e., that the duration of its liabilities is greater than the duration of its assets).

The following table provides information regarding the Bank's base case duration of equity as well as its duration of equity in up and down 100 and 200 basis point interest rate shock scenarios as of December 31, 2019 and March 31, 2020.

DURATION ANALYSIS

(expressed in years)

	Base Case Interest Rates				Duration of Equity			
	Asset Duration(1)	Liability Duration(1)	Duration Gap(1)	Duration of Equity(1)	Up 100(1)(2)	Up 200(1)(2)	Down 100(1)(3)	Down 200(1)(3)
December 2019	0.23	(0.35)	(0.12)	(2.06)	0.20	1.43	(2.57)	(3.75)
March 2020	0.05	(0.33)	(0.28)	(5.97)	(4.69)	(0.46)	(13.60)	(17.69)

(1) The duration figures reflected in the table were derived in accordance with Finance Agency guidance. The Bank has on its balance sheet long-term, fixed-rate, putable advances that can be terminated by the Bank on specified future dates pursuant to a put option purchased from the member. These advances are hedged with interest rate swaps where the Bank pays a fixed-rate coupon and receives a variable-rate coupon, and sells a call option to the swap counterparty pursuant to which that counterparty can cancel the swap on specified future dates. The call/put option dates mirror each other throughout the life of the instruments. Given the different discount curves that are used to value the putable advances and the associated cancelable interest rate swaps, the modeled results can produce an outcome where the advance and the corresponding interest rate swap are not terminated on the same date. In practice, if the swap counterparty calls the interest rate swap, the Bank concurrently puts the advance. After adjusting the model to more closely align the put dates of the advances with the projected call dates of the associated interest rate swaps, the Bank's duration figures as of March 31, 2020 were as follows (expressed in years): asset duration - 0.38; liability duration - (0.33); duration gap - 0.05; base case duration of equity ("DOE") - 1.41; up 100 DOE - (0.51); up 200 DOE - 0.90; down 100 DOE - (2.66); and down 200 DOE - (3.53). As of December 31, 2019, the comparable figures were as follows: asset duration - 0.39%; liability duration - (0.35); duration gap - 0.04%; base case DOE - 0.94; up 100 DOE - 1.12; up 200 DOE - 1.45; down 100 DOE - 0.77; and down 200 DOE - (0.25).

(2) In the up 100 and up 200 scenarios, the duration of equity is calculated under assumed instantaneous +100 and +200 basis point parallel shifts in interest rates.

(3) In the down 100 and down 200 scenarios, the duration of equity is calculated under assumed instantaneous -100 and -200 basis point parallel shifts in interest rates.

ITEM 4. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

The Bank's management, under the supervision and with the participation of its Chief Executive Officer and Chief Financial Officer, conducted an evaluation of the effectiveness of the Bank's disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the period covered by this report. Based upon that evaluation, the Bank's Chief Executive Officer and Chief Financial Officer concluded that, as of the end of the period covered by this report, the Bank's disclosure controls and procedures were effective in: (1) recording, processing, summarizing and reporting information required to be disclosed by the Bank in the reports that it files or submits under the Exchange Act within the time periods specified in the SEC's rules and forms and (2) ensuring that information required to be disclosed by the Bank in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Bank's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures.

Changes in Internal Control Over Financial Reporting

There were no changes in the Bank's internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal quarter ended March 31, 2020 that have materially affected, or are reasonably likely to materially affect, the Bank's internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 6. EXHIBITS

31.1	Certification of principal executive officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of principal financial officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of principal executive officer and principal financial officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following materials from the Bank's quarterly report on Form 10-Q for the quarterly period ended March 31, 2020, formatted in eXtensible Business Reporting Language ("XBRL"): (i) Statements of Condition as of March 31, 2020 and December 31, 2019; (ii) Statements of Income for the Three Months Ended March 31, 2020 and 2019; (iii) Statements of Comprehensive Income (Loss) for the Three Months Ended March 31, 2020 and 2019; (iv) Statements of Capital for the Three Months Ended March 31, 2020 and 2019; (v) Statements of Cash Flows for the Three Months Ended March 31, 2020 and 2019; and (vi) Notes to the Financial Statements for the quarter ended March 31, 2020.

SIGNATURES

Pursuant to the requirements 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.

May 13, 2020	By	/s/ Tom Lewis
Date		Tom Lewis
		Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)

EXHIBIT INDEX

31.1	Certification of principal executive officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of principal financial officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of principal executive officer and principal financial officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101	The following materials from the Bank's quarterly report on Form 10-Q for the quarterly period ended March 31, 2020, formatted in eXtensible Business Reporting Language ("XBRL"): (i) Statements of Condition as of March 31, 2020 and December 31, 2019; (ii) Statements of Income for the Three Months Ended March 31, 2020 and 2019; (iii) Statements of Comprehensive Income (Loss) for the Three Months Ended March 31, 2020 and 2019; (iv) Statements of Capital for the Three Months Ended March 31, 2020 and 2019; (v) Statements of Cash Flows for the Three Months Ended March 31, 2020 and 2019; and (vi) Notes to the Financial Statements for the quarter ended March 31, 2020.

Exhibit 31.1

CERTIFICATION

I, Sanjay Bhasin, certify that:

1. I have reviewed this quarterly report on Form 10-Q of the Federal Home Loan Bank of Dallas;
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 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: May 13, 2020

/s/ Sanjay Bhasin

Sanjay Bhasin
President and Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Tom Lewis, certify that:

1. I have reviewed this quarterly report on Form 10-Q of the Federal Home Loan Bank of Dallas;
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 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: May 13, 2020

/s/ Tom Lewis

Tom Lewis

Executive Vice President and Chief Financial Officer

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of the Federal Home Loan Bank of Dallas (the "Bank") for the period ended March 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), Sanjay Bhasin, as President and Chief Executive Officer of the Bank, and Tom Lewis, as Executive Vice President and Chief Financial Officer of the Bank, each hereby certifies, pursuant to 18 U.S.C. Section 1350, that, to the best of his knowledge:

(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 Bank.

/s/ Sanjay Bhasin	/s/ Tom Lewis
Sanjay Bhasin President and Chief Executive Officer	Tom Lewis Executive Vice President and Chief Financial Officer
May 13, 2020	May 13, 2020

A signed original of this written statement required by Section 906 has been provided to the Bank and will be retained by the Bank and furnished to the Securities and Exchange Commission or its staff upon request.