

**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 **June 30, 2019**

OR

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

For the transition period from _____ to _____

Commission File No. **000-51401**



Federal Home Loan Bank of Chicago

(Exact name of registrant as specified in its charter)

Federally chartered corporation

(State or other jurisdiction of incorporation or organization)

200 East Randolph Drive

Chicago, IL

(Address of principal executive offices)

36-6001019

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

60601

(Zip Code)

Registrant's telephone number, including area code: **(312) 565-5700**

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 (§232.405 of this chapter) 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

Non-accelerated filer

Accelerated filer

Smaller reporting company

Emerging growth company

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

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

As of June 30, 2019, including mandatorily redeemable capital stock, registrant had 20,013,871 total outstanding shares of Class B Capital Stock.

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PART I - FINANCIAL INFORMATION

Item 1. Financial Statements.

Statements of Condition (unaudited)

(U.S. Dollars in millions, except capital stock par value)

| | June 30, 2019 | December 31, 2018 |
|---|------------------|----------------------|
| Assets | | |
| Cash and due from banks | \$ 27 | \$ 28 |
| Interest bearing deposits | 1,155 | 775 |
| Federal Funds sold | 10,515 | 7,704 |
| Securities purchased under agreements to resell | 2,550 | 2,900 |
| Investment debt securities - | | |
| Trading, 373 and 269 pledged | 3,981 | 3,478 |
| Available-for-sale | 15,742 | 14,614 |
| Held-to-maturity, 3,071 and 3,492 fair value | 2,796 | 3,213 |
| Investment debt securities | 22,519 | 21,305 |
| Advances, 2,867 and 1,025 carried at fair value | 51,141 | 52,628 |
| MPF Loans held in portfolio, net of (1) and (1) allowance for credit losses | 8,265 | 7,103 |
| Derivative assets | 10 | 6 |
| Other assets, 58 and 108 carried at fair value | 377 | 408 |
| Assets | \$ 96,559 | \$ 92,857 |
| Liabilities | | |
| Deposits - | | |
| Noninterest bearing | \$ 107 | \$ 54 |
| Interest bearing, 14 and 29 from other FHLBs | 550 | 497 |
| Deposits | 657 | 551 |
| Consolidated obligations, net - | | |
| Discount notes, 0 and 992 carried at fair value | 44,893 | 43,166 |
| Bonds, 3,233 and 2,352 carried at fair value | 43,941 | 42,250 |
| Consolidated obligations, net | 88,834 | 85,416 |
| Derivative liabilities | 14 | 16 |
| Affordable Housing Program assessment payable | 88 | 84 |
| Mandatorily redeemable capital stock | 323 | 313 |
| Other liabilities | 1,261 | 1,188 |
| Liabilities | 91,177 | 87,568 |
| Commitments and contingencies - see notes to the financial statements | | |
| Capital | | |
| Class B1 activity stock, 14 and 15 million shares issued and outstanding | 1,394 | 1,476 |
| Class B2 membership stock, 3 and 2 million shares issued and outstanding | 284 | 222 |
| Capital stock - putable, \$100 and \$100 par value per share | 1,678 | 1,698 |
| Retained earnings - unrestricted | 3,120 | 3,023 |
| Retained earnings - restricted | 543 | 513 |
| Retained earnings | 3,663 | 3,536 |
| Accumulated other comprehensive income (loss) (AOCI) | 41 | 55 |
| Capital | 5,382 | 5,289 |
| Liabilities and capital | \$ 96,559 | \$ 92,857 |

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

Statements of Income (unaudited)
 (U.S. Dollars in millions)

| | Three months ended June 30, | | Six months ended June 30, | |
|--|--------------------------------|--------------|------------------------------|---------------|
| | 2019 | 2018 | 2019 | 2018 |
| Interest income | \$ 703 | \$ 577 | \$ 1,389 | \$ 1,057 |
| Interest expense | 587 | 445 | 1,155 | 801 |
| Net interest income | 116 | 132 | 234 | 256 |
| Noninterest income - | | | | |
| Trading securities | 15 | 4 | 23 | 3 |
| Derivatives and hedging activities | (24) | 3 | (26) | — |
| Instruments held under fair value option | 17 | (10) | 19 | (17) |
| MPF fees, 6 , 6 , 13 and 12 from other FHLBs | 9 | 7 | 17 | 15 |
| Other, net | 4 | 5 | 6 | 8 |
| Noninterest income | 21 | 9 | 39 | 9 |
| Noninterest expense - | | | | |
| Compensation and benefits | 27 | 28 | 55 | 52 |
| Operating expenses | 23 | 17 | 43 | 32 |
| Other | 2 | 1 | 4 | 4 |
| Noninterest expense | 52 | 46 | 102 | 88 |
| Income before assessments | 85 | 95 | 171 | 177 |
| Affordable Housing Program | 9 | 10 | 18 | 18 |
| Net income | \$ 76 | \$ 85 | \$ 153 | \$ 159 |

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

Statements of Comprehensive Income (unaudited)
(U.S. Dollars in millions)

| | Three months ended June 30, | | Six months ended June 30, | |
|---|--------------------------------|--------------|------------------------------|---------------|
| | 2019 | 2018 | 2019 | 2018 |
| Net income | \$ 76 | \$ 85 | \$ 153 | \$ 159 |
| Other comprehensive income (loss) - | | | | |
| Net unrealized gain (loss) available-for-sale debt securities | (17) | (43) | (19) | (92) |
| Noncredit OTTI held-to-maturity debt securities | 7 | 8 | 13 | 15 |
| Net unrealized gain (loss) cash flow hedges | (11) | 32 | (13) | 90 |
| Postretirement plans | 1 | (1) | 5 | (3) |
| Other comprehensive income (loss) | (20) | (4) | (14) | 10 |
| Comprehensive income | \$ 56 | \$ 81 | \$ 139 | \$ 169 |

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

Statements of Capital (unaudited)
 (U.S. Dollars and shares in millions)

| | Capital Stock - Putable - B1 Activity | | Capital Stock - Putable - B2 Membership | | Retained Earnings | | | AOCI | Total |
|--|---------------------------------------|-----------------|---|---------------|-------------------|---------------|----------------|--------------|-----------------|
| | Shares | Value | Shares | Value | Unrestricted | Restricted | Total | | |
| March 31, 2019 | 14 | \$ 1,366 | 3 | \$ 294 | \$ 3,080 | \$ 528 | \$3,608 | \$ 61 | \$ 5,329 |
| Comprehensive income | | | | | 61 | 15 | 76 | (20) | 56 |
| Proceeds from issuance of capital stock | 8 | 842 | — | 12 | | | | | 854 |
| Repurchases of capital stock | — | — | (8) | (827) | | | | | (827) |
| Capital stock reclassified to mandatorily redeemable capital stock liability | — | (9) | — | — | | | | | (9) |
| Transfers between classes of capital stock | (8) | (805) | 8 | 805 | | | | | |
| Cash dividends - class B1 | | | | | (20) | | (20) | | (20) |
| Class B1 annualized rate | | 5.00% | | | | | | | 5.00% |
| Cash dividends - class B2 | | | | | (1) | | (1) | | (1) |
| Class B2 annualized rate | | | | 2.25% | | | | | 2.25% |
| Total change in period | — | 28 | — | (10) | 40 | 15 | 55 | (20) | 53 |
| June 30, 2019 | 14 | \$ 1,394 | 3 | \$ 284 | \$ 3,120 | \$ 543 | \$3,663 | \$ 41 | \$ 5,382 |
| December 31, 2018 | 15 | \$ 1,476 | 2 | \$ 222 | \$ 3,023 | \$ 513 | \$3,536 | \$ 55 | \$ 5,289 |
| Cumulative effect adjustment - see Note 2 | | | | | 16 | — | 16 | | 16 |
| Comprehensive income | | | | | 123 | 30 | 153 | (14) | 139 |
| Proceeds from issuance of capital stock | 14 | 1,454 | — | 12 | | | | | 1,466 |
| Repurchases of capital stock | — | — | (14) | (1,476) | | | | | (1,476) |
| Capital stock reclassified to mandatorily redeemable capital stock liability | — | (9) | — | (1) | | | | | (10) |
| Transfers between classes of capital stock | (15) | (1,527) | 15 | 1,527 | | | | | |
| Cash dividends - class B1 | | | | | (40) | | (40) | | (40) |
| Class B1 annualized rate | | 5.00% | | | | | | | 5.00% |
| Cash dividends - class B2 | | | | | (2) | | (2) | | (2) |
| Class B2 annualized rate | | | | 2.13% | | | | | 2.13% |
| Total change in period | (1) | (82) | 1 | 62 | 97 | 30 | 127 | (14) | 93 |
| June 30, 2019 | 14 | \$ 1,394 | 3 | \$ 284 | \$ 3,120 | \$ 543 | \$3,663 | \$ 41 | \$ 5,382 |

| | Capital Stock - Putable - B1 Activity | | Capital Stock - Putable - B2 Membership | | Retained Earnings | | | AOCI | Total |
|--|---------------------------------------|----------|---|---------|-------------------|------------|---------|--------|----------|
| | Shares | Value | Shares | Value | Unrestricted | Restricted | Total | | |
| March 31, 2018 | 14 | \$ 1,368 | 2 | \$ 211 | \$ 2,891 | \$ 467 | \$3,358 | \$ 126 | \$ 5,063 |
| Comprehensive income | | | | | 68 | 17 | 85 | (4) | 81 |
| Proceeds from issuance of capital stock | 8 | 877 | — | 11 | | | | | 888 |
| Repurchases of capital stock | — | — | (6) | (660) | | | | | (660) |
| Capital stock reclassified to mandatorily redeemable capital stock liability | — | (1) | — | (1) | | | | | (2) |
| Transfers between classes of capital stock | (7) | (746) | 7 | 746 | | | | | |
| Cash dividends - class B1 | | | | | (15) | | (15) | | (15) |
| Class B1 annualized rate | | 4.00% | | | | | | | 4.00% |
| Cash dividends - class B2 | | | | | — | | — | | — |
| Class B2 annualized rate | | | | 1.60% | | | | | 1.60% |
| Total change in period | 1 | 130 | 1 | 96 | 53 | 17 | 70 | (4) | 292 |
| June 30, 2018 | 15 | \$ 1,498 | 3 | \$ 307 | \$ 2,944 | \$ 484 | \$3,428 | \$ 122 | \$ 5,355 |
| December 31, 2017 | 12 | \$ 1,241 | 2 | \$ 202 | \$ 2,845 | \$ 452 | \$3,297 | \$ 112 | \$ 4,852 |
| Comprehensive income | | | | | 127 | 32 | 159 | 10 | 169 |
| Proceeds from issuance of capital stock | 17 | 1,698 | — | 11 | | | | | 1,709 |
| Repurchases of capital stock | — | — | (13) | (1,345) | | | | | (1,345) |
| Capital stock reclassified to mandatorily redeemable capital stock liability | — | (1) | — | (1) | | | | | (2) |
| Transfers between classes of capital stock | (14) | (1,440) | 14 | 1,440 | | | | | |
| Cash dividends - class B1 | | | | | (27) | | (27) | | (27) |
| Class B1 annualized rate | | 3.75% | | | | | | | 3.75% |
| Cash dividends - class B2 | | | | | (1) | | (1) | | (1) |
| Class B2 annualized rate | | | | 1.55% | | | | | 1.55% |
| Total change in period | 3 | 257 | 1 | 105 | 99 | 32 | 131 | 10 | 503 |
| June 30, 2018 | 15 | \$ 1,498 | 3 | \$ 307 | \$ 2,944 | \$ 484 | \$3,428 | \$ 122 | \$ 5,355 |

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

Condensed Statements of Cash Flows (unaudited)
(U.S. Dollars in millions)

| Six months ended June 30, | | 2019 | 2018 |
|---------------------------|--|-----------------|-----------------|
| Operating | Net cash provided by (used in) operating activities | \$ (291) | \$ 235 |
| Investing | Net change interest bearing deposits | (380) | — |
| | Net change Federal Funds sold | (2,811) | (2,609) |
| | Net change securities purchased under agreements to resell | 350 | (2,000) |
| | Trading debt securities - | | |
| | Sales | — | 200 |
| | Proceeds from maturities and paydowns | 1,502 | 4 |
| | Purchases | (1,993) | (2,559) |
| | Available-for-sale debt securities - | | |
| | Proceeds from maturities and paydowns | 2,348 | 1,420 |
| | Purchases | (2,979) | (129) |
| | Held-to-maturity debt securities - ^a | | |
| | Proceeds from maturities and paydowns | 1,387 | 1,475 |
| | Purchases | (930) | (1,036) |
| | Advances - | | |
| | Principal collected | 752,725 | 674,825 |
| | Issued | (750,899) | (681,320) |
| | MPF Loans held in portfolio - | | |
| | Principal collected | 468 | 396 |
| | Purchases | (1,634) | (988) |
| | Other investing activities | 7 | 8 |
| | Net cash provided by (used in) investing activities | (2,839) | (12,313) |
| Financing | Net change deposits, incl. (14) and (20) from other FHLBs | 106 | 66 |
| | Discount notes - | | |
| | Net proceeds from issuance | 775,088 | 1,011,104 |
| | Payments for maturing and retiring | (773,405) | (1,009,303) |
| | Consolidated obligation bonds - | | |
| | Net proceeds from issuance | 17,351 | 23,685 |
| | Payments for maturing and retiring | (15,961) | (13,812) |
| | Capital stock - | | |
| | Proceeds from issuance | 1,466 | 1,709 |
| | Repurchases | (1,476) | (1,345) |
| | Cash dividends paid | (42) | (28) |
| | Other financing activities | 2 | (11) |
| | Net cash provided by (used in) financing activities | 3,129 | 12,065 |
| | Net increase (decrease) in cash and due from banks | (1) | (13) |
| | Cash and due from banks at beginning of period | 28 | 42 |
| | Cash and due from banks at end of period | \$ 27 | \$ 29 |

^a Presentation of cash flow amounts in prior periods have been reclassified to reflect short-term held-to-maturity purchases and proceeds on a gross, rather than net, basis. Certain reclassifications made to prior periods to properly present gross cash flows were not material.

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

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 1 – Background and Basis of Presentation

The Federal Home Loan Bank of Chicago is a federally chartered corporation and one of 11 Federal Home Loan Banks (the FHLBs) that, with the Office of Finance, comprise the Federal Home Loan Bank System (the System). The FHLBs are government-sponsored enterprises (GSE) of the United States of America and were organized under the Federal Home Loan Bank Act of 1932, as amended (FHLB Act), in order to improve the availability of funds to support home ownership. We are supervised and regulated by the Federal Housing Finance Agency (FHFA), an independent federal agency in the executive branch of the United States (U.S.) government.

Each FHLB is a member-owned cooperative with members from a specifically defined geographic district. Our defined geographic district is Illinois and Wisconsin. All federally-insured depository institutions, insurance companies engaged in residential housing finance, credit unions and community development financial institutions located in our district are eligible to apply for membership with us. All our members are required to purchase our capital stock as a condition of membership. Our capital stock is not publicly traded, and is issued, repurchased or redeemed at par value, \$100 per share, subject to certain statutory and regulatory limits. As a cooperative, we do business with our members, and former members (under limited circumstances). Specifically, we provide credit principally in the form of secured loans called advances. We also provide liquidity for home mortgage loans to members approved as Participating Financial Institutions (PFIs) through the Mortgage Partnership Finance[®] (MPF[®]) Program.

Our accounting and financial reporting policies conform to generally accepted accounting principles in the United States of America (GAAP). Amounts in prior periods may be reclassified to conform to the current presentation and, if material, are detailed in the following notes.

In the opinion of management, all normal recurring adjustments have been included for a fair statement of this interim financial information. These unaudited financial statements and the following footnotes should be read in conjunction with the audited financial statements and footnotes for the year ended December 31, 2018, included in our Annual Report on Form 10-K (2018 Form 10-K) starting on page F-1, as filed with the Securities and Exchange Commission (SEC).

Unless otherwise specified, references to we, us, our, and the Bank are to the Federal Home Loan Bank of Chicago.

"Mortgage Partnership Finance", "MPF", "MPF Xtra", and "Community First" are registered trademarks of the Federal Home Loan Bank of Chicago.

See the **Glossary of Terms** starting on page 59 for the definitions of certain terms used herein.

Use of Estimates and Assumptions

We are required to make estimates and assumptions when preparing our financial statements in accordance with GAAP. The most significant of these estimates and assumptions applies to fair value measurements and allowance for credit losses. Our actual results may differ from the results reported in our financial statements due to such estimates and assumptions. This includes the reported amounts of assets and liabilities, the reported amounts of income and expense, and the disclosure of contingent assets and liabilities.

Basis of Presentation

The basis of presentation pertaining to the consolidation of our variable interest entities has not changed since we filed our 2018 Form 10-K. The basis of presentation pertaining to our gross versus net presentation of derivative financial instruments also has not changed since we filed our 2018 Form 10-K.

Refer to **Note 1- Background and Basis of Presentation** to the financial statements in our 2018 Form 10-K with respect to our basis of presentation for consolidation of variable interest entities and our gross versus net presentation of financial instruments for further details.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 2 – Summary of Significant Accounting Policies

Our **Summary of Significant Accounting Policies** through December 31, 2018, can be found in **Note 2 – Summary of Significant Accounting Policies** to the financial statements in our 2018 Form 10-K. We adopted the following policies effective January 1, 2019:

The Inclusion of the Overnight Index Swap (OIS) Rate based on the Secured Overnight Financing Rate (SOFR) as a Benchmark Interest Rate for Hedge Accounting Purposes (FASB ASU 2018-16)

In October of 2018, the FASB issued an amendment that adds the OIS rate based on the SOFR as a U.S. benchmark interest rate for hedge accounting purposes, in light of the plan for a phase out of the oversight of LIBOR. The SOFR OIS rate is the fixed rate on a U.S. dollar, constant-notional interest rate swap that has its variable-rate leg referenced to SOFR (an overnight rate) with no additional spread over SOFR on that variable-rate leg. That fixed rate is the derived rate that would result in the swap having a zero fair value at inception because the present value of fixed cash flows, based on that rate, equates to the present value of the variable cash flows. Including the OIS rate based on SOFR as an eligible benchmark interest rate during the early stages of the marketplace transition should facilitate the LIBOR to SOFR transition and provide sufficient lead time for us to prepare for changes to interest rate risk hedging strategies for both risk management and hedge accounting purposes. We adopted this amendment on a prospective basis for qualifying new hedging relationships entered on or after January 1, 2019. The new guidance did not have an effect on our financial condition, results of operations, and cash flows at the time of adoption but we continue to evaluate potential future impacts.

Targeted Improvements to Accounting for Hedging Activities (ASU 2017-12)

In August of 2017, the FASB issued targeted improvements to existing derivatives and hedging guidance. Upon adoption, we modified the risk of certain fair value hedges from contractual coupon interest rate to benchmark rate component improving hedge effectiveness. The opening cumulative adjustment related to modifying the risk being hedged was an increase to retained earnings of \$16 million and a corresponding increase to the cumulative basis adjustment (carrying value) of the hedged items. The opening adjustment to retained earnings related to ineffectiveness recognized in prior reporting periods attributable to open cash flow hedges was not material. Prior reporting periods were not restated.

Significant changes to existing GAAP guidance were as follows:

Hedging Strategies Newly Permitted:

- Permits entering into a cash flow hedge of the variability in cash flows in a financial instrument that has a contractually specified interest rate.
- Permits hedging the benchmark risk component of cash flows in a fair value hedge.
- Permits entering into a partial-term fair value hedge of the hedged item.
- Permits entering into last-of-layer fair value hedges.

Assessment of Hedge Effectiveness:

- Permits qualitatively assessing hedge effectiveness.
- Enabled applying the long-haul method of assessing hedge effectiveness in cases where the shortcut method was initially applied but subsequently is not or is no longer appropriate.

Financial Statement Presentation:

- Required the entire change in fair value of the hedging instrument in a cash flow hedge to be recorded and deferred in AOCI until reclassification to our statements of income would be required.
- Required hedge ineffectiveness to be presented in either interest income or interest expense, whichever is appropriate, rather than into noninterest income on derivatives and hedging activities in our statements of income. This means that changes in fair value on AFS debt securities in a fair value hedging relationship are immediately recognized into interest income in our statement of income.
- The above presentation guidance was prospectively adopted. Prior to January 1, 2019, hedge ineffectiveness was classified in noninterest income on derivatives and hedging activities in our statements of income.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Leases (ASU 2016-02)

In February of 2016, the FASB issued lease accounting guidance that became effective January 1, 2019. Upon adoption, we applied the guidance to the beginning of January 1, 2019, using the modified retrospective approach. Prior financial statements were not restated. There was no cumulative effect adjustment to the opening balance of retained earnings as of January 1, 2019. The guidance required us to recognize and measure our operating leases as right-of-use assets, with terms that exceed 12 months, in our statements of condition - that amount, which was \$11 million, was recognized in other assets and other liabilities as of January 1, 2019. Expenses attributable to our leases are included in noninterest expense - operating expenses in our statements of income. Payments related to our operating leases are classified within operating activities in our statements of cash flows.

Note 3 – Recently Issued but Not Yet Adopted Accounting Standards

The following table provides a summary of recently issued but not yet adopted accounting standards which may have an effect on our financial statements.

| Accounting Standards Update (ASU) | Description | Effective Date | Effect on the Financial Statements or Other Significant Matters |
|--|--|---|--|
| Measurement of Credit Losses on Financial Instruments (ASU 2016-13) | In June of 2016, the FASB amended existing GAAP guidance applicable to measuring credit losses on financial instruments. Specifically, the amendment replaces the “incurred loss” impairment methodology applied under current GAAP with a “currently expected credit losses” or CECL methodology. The measurement of CECL is based on relevant information about past events, including historical experience, current conditions, and reasonable and supportable forecasts that affect the collectability of the financial instrument’s reported amount. Upon adoption, any difference between our existing and CECL allowance for credit losses will be recognized as a cumulative-effect adjustment to the opening balance of our retained earnings as of January 1, 2020. | This guidance becomes effective for the interim and annual periods beginning on January 1, 2020. Early adoption is permitted. | We do not expect this guidance to have a material effect on our financial condition, results of operations, and cash flows. |
| Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement (ASU 2018-15) | In August of 2018, the FASB issued amendments to align 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). The accounting for the service element of a hosting arrangement that is a service contract is not affected by these amendments. The amendments should be applied either retrospectively or prospectively to all implementation costs incurred after the date of adoption. | This guidance becomes effective for the interim and annual periods beginning on January 1, 2020. Early adoption is permitted. | The guidance is not expected to have a significant effect on our financial condition, results of operations, and cash flows. |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

| Accounting Standards Update (ASU) | Description | Effective Date | Effect on the Financial Statements or Other Significant Matters |
|--|--|---|---|
| Codification Improvements to Topic 326, Financial Instruments - Credit Losses, Topic 815, Derivatives and Hedging, and Topic 825, Financial Instruments (ASU 2019-4) | <p>In April of 2019, the FASB issued codification improvements applicable to financial instrument guidance. Codification improvements relevant to the Bank are as follows:</p> <ul style="list-style-type: none"> - Provides various options for determining currently expected credit losses for accrued interest receivable as well as flexibility in presenting accrued interest receivable separately from the financial instrument's amortized cost basis provided certain disclosures are made. - Clarifies that expected recoveries of amounts previously written off and expected to be written off should be included in the valuation account and should not exceed the aggregate of amounts previously written off and expected to be written off by the entity. In addition, for collateral dependent financial assets, the amendments clarify that an allowance for credit losses that is added to the amortized cost basis of the financial asset(s) should not exceed amounts previously written off. - Clarifies consideration of estimated costs to sell when foreclosure is probable should not be discounted. - Clarifies issues related to partial-term fair value hedges of interest rate risk, amortization of fair value hedge basis adjustments and various other derivative and hedging issues. | These amendments take effect January 1, 2020. | We are in the process of evaluating the effect of this new guidance on our financial condition, results of operation, and cash flows. |
| Financial Instruments - Credit Losses Topic 326 - Targeted Transition Relief (ASU 2019-05) | <p>In May of 2019, the FASB issued an amendment providing transition relief to FASB ASU 2016-13 or CECL. Specifically, the amendment permits entities with an option to irrevocably elect the fair value option on an instrument by instrument basis for eligible instruments such as loans carried at amortized cost. This fair value election does not apply to HTM debt securities.</p> <p>The difference between the carrying amount of the instruments and the fair value amount of the instruments in which the fair value option is irrevocably elected upon adoption would be recorded as a cumulative-effect adjustment to the opening balance of retained earnings as of January 1, 2020.</p> | The election would coincide with the adoption of CECL or January 1, 2020. | We are in the process of evaluating whether or not to utilize this transition relief. |

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 4 – Interest Income and Interest Expense

The following table presents interest income and interest expense for the periods indicated:

| | Three months ended June 30, | | Six months ended June 30, | |
|--|--------------------------------|------------|------------------------------|--------------|
| | 2019 | 2018 | 2019 | 2018 |
| Interest income - | | | | |
| Trading | \$ 21 | \$ 9 | \$ 38 | \$ 15 |
| Available-for-sale interest income | 128 | 107 | 252 | 211 |
| Available-for-sale prepayment fees | 1 | 13 | 2 | 20 |
| Available-for-sale | 129 | 120 | 254 | 231 |
| Held-to-maturity | 34 | 43 | 72 | 89 |
| Investment debt securities | 184 | 172 | 364 | 335 |
| Advances | 362 | 285 | 720 | 499 |
| MPF Loans held in portfolio | 78 | 60 | 154 | 115 |
| Federal funds sold and securities purchased under agreements to resell | 70 | 54 | 137 | 98 |
| Other | 9 | 6 | 14 | 10 |
| Interest income | 703 | 577 | 1,389 | 1,057 |
| Interest expense - | | | | |
| Consolidated obligations - | | | | |
| Discount notes | 280 | 205 | 561 | 388 |
| Bonds | 300 | 233 | 579 | 402 |
| Other | 7 | 7 | 15 | 11 |
| Interest expense | 587 | 445 | 1,155 | 801 |
| Net interest income | 116 | 132 | 234 | 256 |

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 5 – Investment Debt Securities

We classify debt securities as either trading, held-to-maturity (HTM), or available-for-sale (AFS). Our security disclosures within these classifications are disaggregated by major security types as shown below. Our major security types are based on the nature and risks of the security:

- U.S. Government & other government related - may consist of the sovereign debt of the United States; debt issued by government sponsored enterprises (GSE); debt issued by the Tennessee Valley Authority; and securities guaranteed by the Small Business Administration.
- Federal Family Education Loan Program - asset-backed securities (FFELP ABS).
- GSE residential mortgage-backed securities (MBS) - issued by Fannie Mae and Freddie Mac.
- Government guaranteed residential MBS.
- Private label residential MBS.
- State or local housing agency obligations.

Pledged Collateral

We disclose the amount of investment securities pledged as collateral pertaining to our derivatives activity on our statements of condition. See **Note 9 - Derivatives and Hedging Activities** for further details.

Trading Debt Securities

The following table presents the fair value of our trading debt securities.

| As of | June 30, 2019 | December 31, 2018 |
|--|-----------------|-------------------|
| U.S. Government & other government related | \$ 3,966 | \$ 3,460 |
| Residential MBS | | |
| GSE | 14 | 17 |
| Government guaranteed | 1 | 1 |
| Trading debt securities | \$ 3,981 | \$ 3,478 |

The following table presents our gains and losses on trading debt securities recorded in Noninterest Income Other.

| | Three months ended June 30, | | Six months ended June 30, | |
|--|-----------------------------|-------------|---------------------------|-------------|
| | 2019 | 2018 | 2019 | 2018 |
| Net unrealized gains (losses) on securities held at period end | \$ 15 | \$ 4 | \$ 12 | \$ 4 |
| Net realized gains (losses) on securities sold/matured during the period | — | — | 11 | (1) |
| Net gains (losses) on trading debt securities | \$ 15 | \$ 4 | \$ 23 | \$ 3 |

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Amortized Cost Basis and Fair Value – Available-for-Sale Debt Securities (AFS)

| | Amortized Cost Basis | Gross Unrealized Gains in AOCI | Gross Unrealized (Losses) in AOCI | Carrying Amount and Fair Value |
|--|-------------------------|---|--|--------------------------------------|
| As of June 30, 2019 | | | | |
| U.S. Government & other government related | \$ 734 | \$ 37 | \$ — | \$ 771 |
| State or local housing agency | 14 | 1 | — | 15 |
| FFELP ABS | 3,394 | 169 | (2) | 3,561 |
| Residential MBS | | | | |
| GSE | 10,888 | 15 | (46) | 10,857 |
| Government guaranteed | 489 | 11 | — | 500 |
| Private label | 31 | 7 | — | 38 |
| Available-for-sale debt securities | \$ 15,550 | \$ 240 | \$ (48) | \$ 15,742 |
| As of December 31, 2018 | | | | |
| U.S. Government & other government related | \$ 528 | \$ 15 | \$ — | \$ 543 |
| State or local housing agency | 17 | — | — | 17 |
| FFELP ABS | 3,578 | 203 | — | 3,781 |
| Residential MBS | | | | |
| GSE | 9,602 | 20 | (48) | 9,574 |
| Government guaranteed | 645 | 13 | — | 658 |
| Private label | 33 | 8 | — | 41 |
| Available-for-sale debt securities | \$ 14,403 | \$ 259 | \$ (48) | \$ 14,614 |

We had no sales of AFS securities for the periods presented.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Amortized Cost Basis, Carrying Amount, and Fair Value - Held-to-Maturity Debt Securities (HTM)

| | Amortized Cost Basis | Non-credit OTTI Recognized in AOCI (Loss) | Carrying Amount | Gross Unrecognized Holding Gains | Gross Unrecognized Holding (Losses) | Fair Value |
|--|----------------------|---|-----------------|----------------------------------|-------------------------------------|-----------------|
| As of June 30, 2019 | | | | | | |
| U.S. Government & other government related | \$ 1,179 | \$ — | \$ 1,179 | \$ 21 | \$ — | \$ 1,200 |
| State or local housing agency | 5 | — | 5 | — | — | 5 |
| Residential MBS | | | | | | |
| GSE | 1,011 | — | 1,011 | 37 | — | 1,048 |
| Government guaranteed | 262 | — | 262 | 3 | — | 265 |
| Private label | 440 | (101) | 339 | 214 | — | 553 |
| Held-to-maturity debt securities | \$ 2,897 | \$ (101) | \$ 2,796 | \$ 275 | \$ — | \$ 3,071 |
| As of December 31, 2018 | | | | | | |
| U.S. Government & other government related | \$ 1,305 | \$ — | \$ 1,305 | \$ 18 | \$ (1) | \$ 1,322 |
| State or local housing agency | 6 | — | 6 | — | — | 6 |
| Residential MBS | | | | | | |
| GSE | 1,141 | — | 1,141 | 30 | — | 1,171 |
| Government guaranteed | 369 | — | 369 | 2 | — | 371 |
| Private label | 506 | (114) | 392 | 230 | — | 622 |
| Held-to-maturity debt securities | \$ 3,327 | \$ (114) | \$ 3,213 | \$ 280 | \$ (1) | \$ 3,492 |

We had no sales of HTM securities for the periods presented.

Contractual Maturity Terms

The maturity of our AFS and HTM investments is detailed in the following table.

| | Available-for-Sale | Held-to-Maturity | |
|--|--------------------------------|------------------|-----------------|
| | Carrying Amount and Fair Value | Carrying Amount | Fair Value |
| As of June 30, 2019 | | | |
| Year of Maturity - | | | |
| Due in one year or less | \$ — | \$ 578 | \$ 579 |
| Due after one year through five years | 3 | 81 | 83 |
| Due after five years through ten years | 266 | 79 | 79 |
| Due after ten years | 517 | 446 | 464 |
| ABS and MBS without a single maturity date | 14,956 | 1,612 | 1,866 |
| Total debt securities | \$ 15,742 | \$ 2,796 | \$ 3,071 |

Notes to Financial Statements - (Unaudited)

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Aging of Unrealized Temporary Losses

The following table presents unrealized temporary losses on our AFS and HTM portfolio for periods less than 12 months and for 12 months or more. We recognized no OTTI charges on these unrealized loss positions. Refer to the **Other-Than-Temporary Impairment Analysis** in the following section for further discussion. In the tables below, in cases where the gross unrealized losses for an investment category are less than \$1 million, the losses are not reported.

| | Less than 12 Months | | 12 Months or More | | Total | |
|--|---------------------|---------------------------|-------------------|---------------------------|-----------------|---------------------------|
| | Fair Value | Gross Unrealized (Losses) | Fair Value | Gross Unrealized (Losses) | Fair Value | Gross Unrealized (Losses) |
| Available-for-sale debt securities | | | | | | |
| As of June 30, 2019 | | | | | | |
| U.S. Government & other government related | \$ — | \$ — | \$ 3 | \$ — | \$ 3 | \$ — |
| State or local housing agency | — | — | 1 | — | 1 | — |
| FFELP ABS | 546 | (2) | — | — | 546 | (2) |
| Residential MBS | | | | | | |
| GSE | 6,791 | (46) | 87 | — | 6,878 | (46) |
| Private label | — | — | 5 | — | 5 | — |
| Available-for-sale debt securities | \$ 7,337 | \$ (48) | \$ 96 | \$ — | \$ 7,433 | \$ (48) |
| As of December 31, 2018 | | | | | | |
| U.S. Government & other government related | \$ — | \$ — | \$ 3 | \$ — | \$ 3 | \$ — |
| State or local housing agency | 1 | — | 3 | — | 4 | — |
| Residential MBS | | | | | | |
| GSE | 5,573 | (46) | 48 | (2) | 5,621 | (48) |
| Government guaranteed | 31 | — | — | — | 31 | — |
| Private label | — | — | 5 | — | 5 | — |
| Available-for-sale debt securities | \$ 5,605 | \$ (46) | \$ 59 | \$ (2) | \$ 5,664 | \$ (48) |
| Held-to-maturity debt securities | | | | | | |
| As of June 30, 2019 | | | | | | |
| U.S. Government & other government related | \$ 45 | \$ — | \$ 3 | \$ — | \$ 48 | \$ — |
| State or local housing agency | 2 | — | — | — | 2 | — |
| Residential MBS | | | | | | |
| Government-guaranteed | 60 | — | 43 | — | 103 | — |
| Private label | — | — | 526 | (101) | 526 | (101) |
| Held-to-maturity debt securities | \$ 107 | \$ — | \$ 572 | \$ (101) | \$ 679 | \$ (101) |
| As of December 31, 2018 | | | | | | |
| U.S. Government & other government related | \$ 459 | \$ — | \$ 23 | \$ (1) | \$ 482 | \$ (1) |
| State or local housing agency | — | — | 2 | — | 2 | — |
| Residential MBS | | | | | | |
| Government guaranteed | 170 | — | — | — | 170 | — |
| Private label | — | — | 592 | (114) | 592 | (114) |
| Held-to-maturity debt securities | \$ 629 | \$ — | \$ 617 | \$ (115) | \$ 1,246 | \$ (115) |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Other-Than-Temporary Impairment Analysis

We recognized no OTTI charges on HTM or AFS debt securities for the periods presented. We do not intend to sell these securities and we believe it is more likely than not that we will not be required to sell them prior to recovering their amortized cost basis. We expect to recover the entire amortized cost basis.

The following table presents the changes in the cumulative amount of previously recorded OTTI credit losses on investment debt securities recognized into earnings for the reporting periods indicated.

| | Three months ended June 30, | | Six months ended June 30, | |
|--|--------------------------------|---------------|------------------------------|---------------|
| | 2019 | 2018 | 2019 | 2018 |
| Beginning Balance | \$ 435 | \$ 468 | \$ 442 | \$ 477 |
| Reductions: | | | | |
| Securities sold, matured, or fully prepaid over the period | (1) | — | (1) | — |
| Increases in cash flows expected to be collected and recognized into interest income | (7) | (9) | (14) | (18) |
| Ending Balance | \$ 427 | \$ 459 | \$ 427 | \$ 459 |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 6 – Advances

We offer a wide range of fixed- and variable-rate advance products with different maturities, interest rates, payment characteristics and optionality.

The following table presents our advances by terms of contractual maturity and the related weighted average contractual interest rate. For amortizing advances, contractual maturity is determined based on the advance’s amortization schedule. Actual maturities may differ from contractual maturities because some borrowers have the right to call or prepay advances with or without penalties.

| As of June 30, 2019 | Amount | Weighted Average Contractual Interest Rate |
|----------------------------|------------------|---|
| Due in one year or less | \$ 19,046 | 2.40% |
| One to two years | 2,530 | 2.19% |
| Two to three years | 3,321 | 2.45% |
| Three to four years | 3,481 | 2.73% |
| Four to five years | 10,257 | 2.51% |
| More than five years | 12,144 | 2.51% |
| Par value | \$ 50,779 | 2.46% |

We have no allowance for credit losses on our advances. See **Note 8 - Allowance for Credit Losses** to the financial statements for further information related to our credit risk on advances.

The following table reconciles the par value of our advances to the carrying amount on our statements of condition as of the dates indicated.

| As of | June 30, 2019 | December 31, 2018 |
|--------------------------------|----------------------|--------------------------|
| Par value | \$ 50,779 | \$ 52,606 |
| Fair value hedging adjustments | 334 | 30 |
| Other adjustments | 28 | (8) |
| Advances | \$ 51,141 | \$ 52,628 |

The following advance borrowers exceeded 10% of our advances outstanding:

| As of June 30, 2019 | Par Value | % of Total Outstanding |
|---------------------------------------|------------------------|-------------------------------|
| One Mortgage Partners Corp. | \$ 11,000 ^a | 21.7% |
| The Northern Trust Company | 7,700 | 15.2% |
| BMO Harris Bank, National Association | 5,975 | 11.8% |

^a One Mortgage Partners Corp. is a subsidiary of JPMorgan Chase Bank NA.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 7 – MPF Loans Held in Portfolio

We acquire MPF Loans from PFIs to hold in our portfolio and historically purchased participations in pools of eligible mortgage loans from other FHLBs (MPF Banks). MPF Loans that are held in portfolio are fixed-rate conventional and Government Loans secured by one-to-four family residential properties with maturities ranging from 5 years to 30 years or participations in pools of similar eligible mortgage loans from other MPF Banks.

The following table presents information on MPF Loans held in portfolio by contractual maturity at the time of purchase.

| As of | June 30, 2019 | December 31, 2018 |
|--|-----------------|-------------------|
| Medium term (15 years or less) | \$ 414 | \$ 334 |
| Long term (greater than 15 years) | 7,712 | 6,662 |
| Unpaid principal balance | 8,126 | 6,996 |
| Net premiums, credit enhancement, and/or deferred loan fees | 130 | 100 |
| Fair value and economic hedging adjustments | 10 | 8 |
| MPF Loans held in portfolio, before allowance for credit losses | 8,266 | 7,104 |
| Allowance for credit losses on MPF Loans | (1) | (1) |
| MPF Loans held in portfolio, net | \$ 8,265 | \$ 7,103 |
| Conventional mortgage loans | \$ 7,212 | \$ 6,062 |
| Government Loans | 914 | 934 |
| Unpaid principal balance | \$ 8,126 | \$ 6,996 |

The above table excludes MPF Loans acquired under the MPF Xtra, MPF Direct, and MPF Government MBS products. See **Note 2 - Summary of Significant Accounting Policies** in our 2018 Form 10-K for information related to the accounting treatment of these off balance sheet MPF Loan products.

See **Note 8 - Allowance for Credit Losses** to the financial statements for information related to our credit losses on MPF Loans held in portfolio.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 8 – Allowance for Credit Losses

See **Note 2 - Summary of Significant Accounting Policies** to the financial statements in our 2018 Form 10-K for further details regarding our allowance for credit losses methodology for each of the following portfolio segments:

- Member credit products (advances, letters of credit and other extensions of credit to borrowers);
- Conventional MPF Loans held in portfolio;
- Government Loans held in portfolio; and
- Federal Funds Sold and Securities Purchased Under Agreements to Resell.

We only have recorded an allowance for credit losses on conventional MPF Loans held in portfolio as further discussed below. For further detail of our **MPF Risk Sharing Structure** see page F-15 in our 2018 Form 10-K. There has been no material activity in our allowance for credit losses since December 31, 2018. The following table presents the recorded investment and the allowance for credit losses in conventional MPF Loans by impairment methodology.

| As of | June 30, 2019 | | December 31, 2018 | |
|--|---------------|--------------|-------------------|--------------|
| Conventional mortgage loans - | | | | |
| Individually evaluated for impairment | \$ | 30 | \$ | 33 |
| Collectively evaluated for impairment | | 7,348 | | 6,155 |
| Recorded investment | \$ | 7,378 | \$ | 6,188 |
| Allowance for credit losses - Collectively evaluated for impairment | \$ | 1 | \$ | 1 |

The following table summarizes our recorded investment in MPF Loans by our key credit quality indicators, which include:

- "Serious delinquency rate" consists of MPF Loans that are 90 days or more past due or in the process of foreclosure, as a percentage of the total recorded investment. MPF Loans that are both 90 days or more past due and in the process of foreclosure are only included once in our serious delinquency rate calculation.
- "Past due 90 days or more still accruing interest" consists of MPF Loans that are either insured or guaranteed by the government or conventional mortgage loans that are well secured (by collateral that have a realizable value sufficient to discharge the debt or by the guarantee or insurance, such as primary mortgage insurance, of a financially responsible party) and in the process of collection.
- Conventional MPF Loans are individually evaluated for impairment when they are adversely classified. There is no allowance for credit losses attributable to conventional MPF Loans that are individually evaluated for impairment, since the related allowance for credit losses has been charged off. We do not recognize interest income on impaired conventional MPF Loans.

| As of | June 30, 2019 | | | December 31, 2018 | | |
|---|-----------------|---------------|-----------------|-------------------|---------------|-----------------|
| | Conventional | Government | Total | Conventional | Government | Total |
| Past due 30-59 days | \$ 64 | \$ 35 | \$ 99 | \$ 59 | \$ 42 | \$ 101 |
| Past due 60-89 days | 16 | 11 | 27 | 17 | 14 | 31 |
| Past due 90 days or more | 29 | 14 | 43 | 31 | 19 | 50 |
| Past due | 109 | 60 | 169 | 107 | 75 | 182 |
| Current | 7,269 | 873 | 8,142 | 6,081 | 879 | 6,960 |
| Recorded investment | \$ 7,378 | \$ 933 | \$ 8,311 | \$ 6,188 | \$ 954 | \$ 7,142 |
| In process of foreclosure | \$ 10 | \$ 4 | \$ 14 | \$ 13 | \$ 6 | \$ 19 |
| Serious delinquency rate | 0.38% | 1.57% | 0.52% | 0.51% | 1.95% | 0.70% |
| Past due 90 days or more and still accruing interest | \$ 4 | \$ 15 | \$ 19 | \$ 5 | \$ 19 | \$ 24 |
| Impaired loans without an allowance for credit losses and on nonaccrual status | 30 | | 30 | 33 | | 33 |
| Unpaid principal balance of impaired loans without an allowance for credit losses | 32 | | 32 | 36 | | 36 |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 9 – Derivatives and Hedging Activities

Refer to **Note 2 - Summary of Significant Accounting Policies** in our 2018 Form 10-K for our accounting policies for derivatives.

We transact most of our derivatives with large banks and major broker-dealers. Some of these banks and broker-dealers or their affiliates buy, sell, and distribute consolidated obligations. We are not a derivatives dealer and do not trade derivatives for speculative purposes. We enter into derivative transactions through either of the following:

- A bilateral agreement with an individual counterparty for over-the-counter derivative transactions.
- Clearinghouses classified as Derivatives Clearing Organizations (DCOs) through Futures Commission Merchants (FCMs), which are clearing members of the DCOs, for cleared derivative transactions.

Managing Interest Rate Risk

We use fair value hedges to offset changes in the fair value of a benchmark interest rate, for example the London Interbank Offering Rate (LIBOR), related to (1) a recognized asset or liability or (2) an unrecognized firm commitment. Our hedge strategy for cash flow hedges is to hedge the total proceeds received from rolling forecasted zero-coupon discount note issuances attributable to changes in the benchmark interest rate or LIBOR by entering into interest rate swaps to mitigate such risk. We use economic hedges in cases where hedge accounting treatment is not permitted or achievable; for example, hedges of portfolio interest rate risk or financial instruments carried at fair value under the fair value option.

Managing Credit Risk on Derivative Agreements

Over-the-counter (bilateral) Derivative Transactions: We are subject to credit risk due to the risk of nonperformance by counterparties to our derivative agreements. For bilateral derivative agreements, the degree of counterparty risk depends on the extent to which master netting arrangements, collateral requirements and other credit enhancements are included in such contracts to mitigate the risk. We manage counterparty credit risk through credit analysis, collateral requirements and adherence to the requirements set forth in our policies and FHFA regulations. We require collateral agreements on all over-the-counter derivatives. Additionally, collateral related to over-the-counter derivatives with member institutions includes collateral assigned to us, as evidenced by a written security agreement, and which may be held by the member institution for our benefit. As of June 30, 2019, based on credit analyses and collateral requirements, we have not recorded an allowance for credit losses on our over-the-counter derivative agreements. See **Note 16 - Fair Value** in our 2018 Form 10-K for discussion regarding our fair value methodology for over-the-counter derivative assets and liabilities, including an evaluation of the potential for the fair value of these instruments to be affected by counterparty credit risk.

For nearly all of our bilateral derivative transactions executed prior to March 1, 2017, and for all transactions entered into after March 1, 2017, our bilateral derivative agreements are fully collateralized with a zero unsecured threshold in accordance with variation margin requirements issued by the U.S. federal bank regulatory agencies and the Commodity Futures Trading Commission (CFTC). For certain transactions executed prior to March 1, 2017, we may be required to post net additional collateral with our counterparties if there is deterioration in our credit rating. If our credit rating had been lowered from its current rating to the next lower rating by a major credit rating agency, such as Standard and Poor's or Moody's, the amount of collateral we would have been required to deliver would have been \$6 million at June 30, 2019.

Cleared Derivative Transactions: Cleared derivative transactions are subject to variation and initial margin requirements established by the DCO and its clearing members. As a result of rule changes adopted by our DCOs, variation margin payments are characterized as settlement of a derivative's mark-to-market exposure and not as collateral against the derivative's mark-to-market exposure. See **Note 1 - Background and Basis of Presentation** and **Note 2 - Summary of Significant Accounting Policies** to the financial statements in our 2018 Form 10-K for further discussion. We post our initial margin collateral payments and make variation margin settlement payments through our FCMs, on behalf of the DCO, which could expose us to institutional credit risk in the event that the FCMs or the DCO fail to meet their obligations. Clearing derivatives through a DCO mitigates counterparty credit risk exposure because the DCO is substituted for individual counterparties and variation margin settlement payments are made daily through the FCMs for changes in the value of cleared derivatives. The DCO determines initial margin requirements for cleared derivatives. In this regard, we pledged \$373 million of investment securities that can be sold or repledged, as part of our initial margin related to cleared derivative transactions at June 30, 2019. Additionally, an FCM may require additional initial margin to be posted based on credit considerations, including but not limited to, if our credit rating downgrades. We had no requirement to post additional initial margin by our FCMs at June 30, 2019.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

The following table presents details on the notional amounts, and derivative assets and liabilities on our statements of condition. The netting adjustment amount includes cash collateral (either received or paid by us) and related accrued interest in cases where we have a legal right, by contract (e.g., master netting agreement) or otherwise, to offset cash flow obligations between us and our counterparty into a single net payable or receivable.

| As of | June 30, 2019 | | | December 31, 2018 | | |
|---|------------------------|-------------------|------------------------|------------------------|-------------------|------------------------|
| | Notional Amount | Derivative Assets | Derivative Liabilities | Notional Amount | Derivative Assets | Derivative Liabilities |
| Derivatives in hedge accounting relationships- | | | | | | |
| Interest rate contracts | \$ 36,164 | \$ 41 | \$ 262 | \$ 35,549 | \$ 39 | \$ 261 |
| Derivatives not in hedge accounting relationships- | | | | | | |
| Interest rate contracts | 21,546 | 164 | 117 | 19,803 | 100 | 59 |
| Other | 1,118 | 4 | 2 | 619 | 1 | 1 |
| Derivatives not in hedge accounting relationships | 22,664 | 168 | 119 | 20,422 | 101 | 60 |
| Gross derivative amount before netting adjustments and cash collateral | \$ 58,828 | 209 | 381 | \$ 55,971 | 140 | 321 |
| Netting adjustments and cash collateral | | (199) | (367) | | (134) | (305) |
| Derivatives on statements of condition | | \$ 10 | \$ 14 | | \$ 6 | \$ 16 |
| | Cash Collateral | | | Cash Collateral | | |
| Cash collateral posted and related accrued interest | \$ 221 | | | \$ 203 | | |
| Cash collateral received and related accrued interest | 53 | | | 32 | | |

The following table presents the Noninterest income - Derivatives and hedging activities as presented in the Statements of Income. For fair value and cash flow hedging relationships, the portion of net gains (losses) representing hedge ineffectiveness are recorded in Noninterest income for periods prior to January 1, 2019.

| For the periods ending | Three months ended June 30, | | Six months ended June 30, | |
|--|-----------------------------|-------------|---------------------------|-------------|
| | 2019 | 2018 | 2019 | 2018 |
| Fair value hedges - interest rate contracts | | \$ (2) | | \$ — |
| Cash flow hedges - interest rate contracts | | — | | 1 |
| Economic hedges - | | | | |
| Interest rate contracts | \$ (30) | 6 | \$ (35) | (1) |
| Other | 3 | (2) | 5 | (1) |
| Economic hedges | (27) | 4 | (30) | (2) |
| Variation margin on daily settled cleared derivatives | 3 | 1 | 4 | 1 |
| Noninterest income - Derivatives and hedging activities | \$ (24) | \$ 3 | \$ (26) | \$ — |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

The following table presents details regarding the offsetting of our derivative assets and liabilities on our statements of condition. The netting adjustment amount includes cash collateral (either received or paid by us) and related accrued interest in cases where we have a legal right, by contract (e.g., master netting agreement) or otherwise, to offset cash flow obligations between us and our counterparty into a single net payable or receivable.

| | Derivative Assets | | | Derivative Liabilities | | |
|--|-------------------|-------------|--------------|------------------------|-------------|--------------|
| | Bilateral | Cleared | Total | Bilateral | Cleared | Total |
| As of June 30, 2019 | | | | | | |
| Derivatives with legal right of offset - | | | | | | |
| Gross recognized amount | \$ 153 | \$ 52 | \$ 205 | \$ 324 | \$ 54 | \$ 378 |
| Netting adjustments and cash collateral | (150) | (49) | (199) | (317) | (50) | (367) |
| Derivatives with legal right of offset - net | 3 | 3 | 6 | 7 | 4 | 11 |
| Derivatives without legal right of offset | 4 | — | 4 | 3 | — | 3 |
| Derivatives on statements of condition | 7 | 3 | 10 | 10 | 4 | 14 |
| Less: | | | | | | |
| Noncash collateral received or pledged and cannot be sold or repledged | — | — | — | — | 4 | 4 |
| Net amount | \$ 7 | \$ 3 | \$ 10 | \$ 10 | \$ — | \$ 10 |
| As of December 31, 2018 | | | | | | |
| Derivatives with legal right of offset - | | | | | | |
| Gross recognized amount | \$ 107 | \$ 32 | \$ 139 | \$ 279 | \$ 41 | \$ 320 |
| Netting adjustments and cash collateral | (102) | (32) | (134) | (273) | (32) | (305) |
| Derivatives with legal right of offset - net | 5 | — | 5 | 6 | 9 | 15 |
| Derivatives without legal right of offset | 1 | — | 1 | 1 | — | 1 |
| Derivatives on statements of condition | 6 | — | 6 | 7 | 9 | 16 |
| Less: | | | | | | |
| Noncash collateral received or pledged and cannot be sold or repledged | — | — | — | — | 9 | 9 |
| Net amount | \$ 6 | \$ — | \$ 6 | \$ 7 | \$ — | \$ 7 |

At June 30, 2019, we had \$369 million of additional credit exposure on cleared derivatives due to pledging of noncash collateral to our DCOs for initial margin, which exceeded our derivative position. We had \$260 million of comparable exposure at December 31, 2018.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Fair Value Hedges

The following table presents our fair value hedging results by the type of hedged item. We had no gain (loss) for hedges that no longer qualified as a fair value hedge. Additionally, the table indicates where fair value hedging results are classified in our statements of income. In this regard, the **Amount Recorded in Net Interest Income** column includes the following:

- The amortization of closed fair value hedging adjustments, which were not material, are included in the interest income/expense line item of the respective hedged item type.
- The effect of net interest settlements attributable to open derivative hedging instruments, which are recorded directly to the interest income/expense line item of the respective hedged item type.
- Beginning January 1, 2019, on a prospective basis, hedge ineffectiveness, which represents the difference between changes in fair value of the derivative hedging instrument and the related change in fair value of the hedged item are recognized into net interest income in the same line item as the earnings effect of the hedged item. Prior to January 1, 2019, hedge ineffectiveness was classified in noninterest income on derivatives and hedging activities.

| | Gain (Loss) on Derivative | Gain (Loss) on Hedged Item | Amount Recorded in Derivatives and Hedging Activities | Amount Recorded in Net Interest Income |
|---|------------------------------|-------------------------------|---|--|
| Three months ended June 30, 2019 | | | | |
| Available-for-sale debt securities | \$ (319) | \$ 311 | | \$ (8) |
| Advances | (179) | 189 | | 10 |
| Consolidated obligation bonds | 128 | (149) | | (21) |
| Total | \$ (370) | \$ 351 | | \$ (19) |
| Three months ended June 30, 2018 | | | | |
| Available-for-sale debt securities | \$ 12 | \$ (14) | (2) | \$ (12) |
| Advances | 23 | (19) | 4 | 5 |
| MPF Loans held for portfolio | — | — | — | (1) |
| Consolidated obligation bonds | (25) | 21 | (4) | (14) |
| Total | \$ 10 | \$ (12) | \$ (2) | \$ (22) |
| Six months ended June 30, 2019 | | | | |
| Available-for-sale debt securities | \$ (523) | \$ 504 | | \$ (19) |
| Advances | (273) | 295 | | 22 |
| Consolidated obligation bonds | 232 | (277) | | (45) |
| Total | \$ (564) | \$ 522 | | \$ (42) |
| Six months ended June 30, 2018 | | | | |
| Available-for-sale debt securities | \$ 49 | \$ (51) | (2) | \$ (30) |
| Advances | 107 | (101) | 6 | 3 |
| MPF Loans held for portfolio | — | — | — | (2) |
| Consolidated obligation bonds | (149) | 145 | (4) | (16) |
| Total | \$ 7 | \$ (7) | \$ — | \$ (45) |

The following table presents the cumulative basis adjustments on hedged items designated as fair value hedges and the related amortized cost basis of the hedged items. As of June 30, 2019 we did not have any active fair value hedges on our MPF Loans. The line for MPF Loans held for portfolio relates to discontinued closed fair value hedges that are being amortized over the remaining life of the loans.

| As of June 30, 2019 | Amortized cost of hedged asset/ (liability) | Basis adjustments active hedges included in amortized cost | Basis adjustments discontinued hedges included in amortized cost | Cumulative amount of fair value hedging basis adjustments |
|-------------------------------|--|---|---|--|
| Advances | \$ 9,603 | \$ 334 | \$ — | \$ 334 |
| Available-for-sale securities | 9,843 | 652 | 1 | 653 |
| MPF Loans held for portfolio | 765 | — | 14 | 14 |
| Consolidated obligation bonds | (20,988) | (83) | 34 | (49) |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Cash Flow Hedges

Beginning January 1, 2019 on a prospective basis, hedge ineffectiveness, which represents the difference between changes in fair value of the derivative hedging instrument and the related change in fair value of the hedged item, are recognized into net interest income in the same line item as the earnings effect of the hedged item. For cash flow hedges, recognition occurs only when amounts are reclassified out of accumulated other comprehensive income. Such recognition occurs when earnings are affected by the hedged item. Prior to January 1, 2019, hedge ineffectiveness was classified in noninterest income on derivatives and hedging activities.

We are exposed to the variability in the total net proceeds received from forecasted zero-coupon discount note issuances, which is attributable to changes in LIBOR. As a result, we enter into cash flow hedge relationships utilizing derivative agreements to hedge the total net proceeds received from our "rolling" forecasted zero-coupon discount note issuances attributable to changes in LIBOR. The maximum length of time over which we are hedging this exposure is 10 years. We reclassify amounts in AOCI into our statements of income in the same periods during which the hedged forecasted transaction affects our earnings. We had no discontinued hedges for the periods presented. The deferred net gains (losses) on derivative instruments in AOCI that are expected to be reclassified to earnings during the next twelve months were \$4 million as of June 30, 2019.

The following table presents our cash flow hedging results by type of hedged item. Additionally, the table indicates where cash flow hedging results are classified in our statements of income. In this regard, the **Amount Reclassified from AOCI into Net Interest Income** column includes the following:

- The amortization of closed cash flow hedging adjustments, which are reclassified from AOCI into the interest income/expense line item of the respective hedged item type.
- The effect of net interest settlements attributable to open derivative hedging instruments, which are initially recorded in AOCI and are reclassified to the interest income/expense line item of the respective hedged item type.

| | Gross Amount Initially Recognized in AOCI | Amount Reclassified from AOCI into Net Interest Income | |
|---|---|--|---|
| Three months ended June 30, 2019 | | | |
| Discount notes | \$ (19) | \$ (7) | |
| Bonds | — | (1) | |
| Total | \$ (19) | \$ (8) | |
| Six months ended June 30, 2019 | | | |
| Discount notes | \$ (32) | \$ (18) | |
| Bonds | — | (1) | |
| Total | \$ (32) | \$ (19) | |
| | Ineffectiveness Recorded in Derivatives and Hedging Activities | Effective Portion Recorded in AOCI | Amount Recorded in Net Interest Income |
| Three months ended June 30, 2018 | | | |
| Advances | \$ — | \$ — | \$ 1 |
| Discount notes | — | 29 | (29) |
| Bonds | — | — | (1) |
| Total | \$ — | \$ 29 | \$ (29) |
| Six months ended June 30, 2018 | | | |
| Advances | \$ — | \$ — | \$ 1 |
| Discount notes | 1 | 88 | (64) |
| Bonds | — | — | (1) |
| Total | \$ 1 | \$ 88 | \$ (64) |

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 10 – Consolidated Obligations

The FHLBs issue consolidated obligations through the Office of Finance as their agent. Consolidated obligations consist of discount notes and consolidated obligation bonds. Consolidated discount notes are issued to raise short-term funds, are issued at less than their face amount and redeemed at par value when they mature. The maturity of consolidated obligation bonds may range from less than one year to over 20 years, but they are not subject to any statutory or regulatory limits on maturity.

The following table presents our consolidated obligation discount notes for which we are the primary obligor. All are due in one year or less.

| As of | June 30, 2019 | December 31, 2018 |
|--------------------------------|---------------|-------------------|
| Carrying Amount | \$ 44,893 | \$ 43,166 |
| Weighted Average Interest Rate | 2.31% | 2.28% |

The following table presents maturities and contractual interest rates on our consolidated obligation bonds, for which we are the primary obligor, including callable bonds that are redeemable in whole, or in part, at our discretion on predetermined call dates.

| As of June 30, 2019 | Contractual Maturity | Weighted Average Interest Rate | By Maturity or Next Call Date |
|-------------------------|----------------------|--------------------------------|-------------------------------|
| Due in one year or less | \$ 18,356 | 2.20% | \$ 32,128 |
| One to two years | 7,082 | 2.23% | 5,303 |
| Two to three years | 6,724 | 2.24% | 2,840 |
| Three to four years | 4,616 | 2.62% | 2,497 |
| Four to five years | 1,778 | 2.81% | 534 |
| Thereafter | 5,322 | 3.22% | 576 |
| Total par value | \$ 43,878 | 2.41% | \$ 43,878 |

The following table presents consolidated obligation bonds outstanding by call feature:

| As of | June 30, 2019 | December 31, 2018 |
|--------------------------------------|------------------|-------------------|
| Noncallable | \$ 26,267 | \$ 27,999 |
| Callable | 17,611 | 14,487 |
| Par value | 43,878 | 42,486 |
| Fair value hedging adjustments | 49 | (227) |
| Other adjustments | 14 | (9) |
| Consolidated obligation bonds | \$ 43,941 | \$ 42,250 |

The following table summarizes the consolidated obligations of the FHLBs and those for which we are the primary obligor. We did not accrue a liability for our joint and several liability related to the other FHLBs' share of the consolidated obligations as of June 30, 2019, and December 31, 2018. See **Note 17 - Commitments and Contingencies** in our 2018 Form 10-K for further details.

| Par values as of | June 30, 2019 | | | December 31, 2018 | | |
|--|---------------|----------------|--------------|-------------------|----------------|--------------|
| | Bonds | Discount Notes | Total | Bonds | Discount Notes | Total |
| FHLB System total consolidated obligations | \$ 620,902 | \$ 427,510 | \$ 1,048,412 | \$ 604,250 | \$ 427,367 | \$ 1,031,617 |
| FHLB Chicago as primary obligor | 43,878 | 45,015 | 88,893 | 42,486 | 43,280 | 85,766 |
| As a percent of the FHLB System | 7% | 11% | 8% | 7% | 10% | 8% |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 11 – Capital and Mandatorily Redeemable Capital Stock (MRCS)

Under our Capital Plan our stock consists of two sub-classes of stock, Class B1 activity stock and Class B2 membership stock (together, Class B stock), both with a par value of \$100 and redeemable on five years' written notice, subject to certain conditions. Under the Capital Plan, each member is required to own capital stock in an amount equal to the greater of a membership stock requirement or an activity stock requirement. Class B1 activity stock is available to support a member's activity stock requirement. Class B2 membership stock is available to support a member's membership stock requirement and any activity stock requirement. See **Note 13 – Capital and Mandatorily Redeemable Capital Stock (MRCS)** to the financial statements in our 2018 Form 10-K for further information on our capital stock and MRCS.

Minimum Capital Requirements

For details on our minimum capital requirements, including how the ratios below were calculated, see **Minimum Capital Requirements** on page F-42 of our 2018 Form 10-K. We complied with our minimum regulatory capital requirements as shown below.

| | June 30, 2019 | | December 31, 2018 | |
|--------------------------------|---------------|----------|-------------------|----------|
| | Requirement | Actual | Requirement | Actual |
| Total regulatory capital | \$ 3,862 | \$ 5,664 | \$ 3,714 | \$ 5,547 |
| Total regulatory capital ratio | 4.00% | 5.87% | 4.00% | 5.97% |
| Leverage capital | \$ 4,828 | \$ 8,497 | \$ 4,643 | \$ 8,321 |
| Leverage capital ratio | 5.00% | 8.80% | 5.00% | 8.96% |
| Risk-based capital | \$ 1,098 | \$ 5,664 | \$ 1,111 | \$ 5,547 |

Total regulatory capital and leverage capital includes mandatorily redeemable capital stock (MRCS) but does not include AOCI. Under the FHFA regulation on capital classifications and critical capital levels for the FHLBs, we are adequately capitalized.

The following members had regulatory capital stock exceeding 10% of our total regulatory capital stock outstanding (which includes MRCS):

| As of June 30, 2019 | Regulatory Capital Stock Outstanding | % of Total Outstanding | Amount of Which is Classified as a Liability (MRCS) |
|---------------------------------------|--------------------------------------|------------------------|---|
| BMO Harris Bank, National Association | \$ 269 | 13.4% | \$ — |
| The Northern Trust Company | 247 | 12.3% | — |
| One Mortgage Partners Corp. | 245 ^a | 12.2% | 245 |

^a One Mortgage Partners Corp. is a subsidiary of JPMorgan Chase Bank NA.

Dividends

Our ability to pay dividends is subject to the FHLB Act and FHFA regulations. On July 25, 2019, our Board of Directors declared a 5.00% dividend (annualized) for Class B1 activity stock and a 2.25% dividend (annualized) for Class B2 membership stock based on our preliminary financial results for the second quarter of 2019. This dividend, including dividends on mandatorily redeemable capital stock, totaled \$25 million and is scheduled for payment on August 15, 2019. Any future dividend determination by our Board will be at our Board's sole discretion and will depend on future operating results, our Retained Earnings and Dividend Policy and any other factors the Board determines to be relevant.

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 12 - Accumulated Other Comprehensive Income (Loss)

The following table summarizes the gains (losses) in AOCI for the reporting periods indicated.

| | Net Unrealized - Available-for- sale Securities | Non-credit OTTI - Held-to- maturity Securities | Net Unrealized - Cash Flow Hedges | Post- Retirement Plans | AOCI |
|--|---|--|--|------------------------------|---------------|
| Three months ended June 30, 2019 | | | | | |
| Beginning balance | \$ 209 | \$ (108) | \$ (33) | \$ (7) | \$ 61 |
| Change in the period recorded to the statements of condition, before reclassifications to statements of income | (17) | 7 | (19) | — | (29) |
| Amounts reclassified in period to statements of income: | | | | | |
| Net interest income | — | — | 8 | | 8 |
| Noninterest expense | | | | 1 | 1 |
| Ending balance | <u>\$ 192</u> | <u>\$ (101)</u> | <u>\$ (44)</u> | <u>\$ (6)</u> | <u>\$ 41</u> |
| Three months ended June 30, 2018 | | | | | |
| Beginning balance | \$ 358 | \$ (136) | \$ (89) | \$ (7) | \$ 126 |
| Change in the period recorded to the statements of condition, before reclassifications to statements of income | (43) | 8 | 29 | (1) | (7) |
| Amounts reclassified in period to statements of income: | | | | | |
| Net interest income | — | — | 3 | | 3 |
| Ending balance | <u>\$ 315</u> | <u>\$ (128)</u> | <u>\$ (57)</u> | <u>\$ (8)</u> | <u>\$ 122</u> |
| Six months ended June 30, 2019 | | | | | |
| Beginning balance | \$ 211 | \$ (114) | \$ (31) | \$ (11) | \$ 55 |
| Change in the period recorded to the statements of condition, before reclassifications to statements of income | (19) | 13 | (32) | 4 | (34) |
| Amounts reclassified in period to statements of income: | | | | | |
| Net interest income | — | — | 19 | — | 19 |
| Noninterest expense | | | | 1 | 1 |
| Ending balance | <u>\$ 192</u> | <u>\$ (101)</u> | <u>\$ (44)</u> | <u>\$ (6)</u> | <u>\$ 41</u> |
| Six months ended June 30, 2018 | | | | | |
| Beginning balance | \$ 407 | \$ (143) | \$ (147) | \$ (5) | \$ 112 |
| Change in the period recorded to the statements of condition, before reclassifications to statements of income | (92) | 15 | 88 | (3) | 8 |
| Amounts reclassified in period to statements of income: | | | | | |
| Net interest income | — | — | 3 | | 3 |
| Noninterest income on derivatives and hedging activities | — | — | (1) | | (1) |
| Ending balance | <u>\$ 315</u> | <u>\$ (128)</u> | <u>\$ (57)</u> | <u>\$ (8)</u> | <u>\$ 122</u> |

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 13 - Fair Value

The following table is a summary of the fair value estimates and related levels in the hierarchy. The carrying amounts are per the statements of condition. Fair value estimates represent the exit prices that we would receive to sell assets or pay to transfer liabilities in an orderly transaction with market participants at the measurement date. They do not represent an estimate of our overall market value as a going concern, as they do not take into account future business opportunities or profitability of assets and liabilities. We measure instrument-specific credit risk attributable to our consolidated obligations based on our nonperformance risk, which includes the credit risk associated with the joint and several liability of other FHLBs. As a result, we did not recognize any instrument-specific credit risk attributable to our consolidated obligations that are carried at fair value. See **Note 2 - Summary of Significant Accounting Policies** in our 2018 Form 10-K for our fair value policies and **Note 16 - Fair Value** in our 2018 Form 10-K for our valuation techniques and significant inputs. See **Note 9 - Derivatives and Hedging Activities** for more information on the Netting and Cash Collateral amounts.

| | Carrying Amount | Fair Value | Level 1 | Level 2 | Level 3 | Netting & Cash Collateral |
|--|--------------------|--------------------|-----------------|--------------------|---------------|---------------------------|
| June 30, 2019 | | | | | | |
| Carried at amortized cost | | | | | | |
| Cash and due from banks | \$ 27 | \$ 27 | \$ 27 | \$ — | \$ — | |
| Interest bearing deposits | 1,155 | 1,155 | 1,155 | — | — | |
| Federal Funds sold and securities purchased under agreements to resell | 13,065 | 13,065 | — | 13,065 | — | |
| Held-to-maturity debt securities | 2,796 | 3,071 | — | 2,518 | 553 | |
| Advances | 48,274 | 48,309 | — | 48,309 | — | |
| MPF Loans held in portfolio, net | 8,261 | 8,430 | — | 8,423 | 7 | |
| Other assets | 176 | 176 | — | 176 | — | |
| Carried at fair value on a recurring basis | | | | | | |
| Trading debt securities | 3,981 | 3,981 | — | 3,981 | — | |
| Government related non-MBS, ABS, and MBS | 15,704 | 15,704 | — | 15,704 | — | |
| Private label residential MBS | 38 | 38 | — | — | 38 | |
| Available-for-sale debt securities | 15,742 | 15,742 | — | 15,704 | 38 | |
| Advances - fair value option election | 2,867 | 2,867 | — | 2,867 | — | |
| Derivative assets | 10 | 10 | — | 209 | — | \$ (199) |
| Other assets - held for sale at fair value | 58 | 58 | — | 58 | — | |
| Carried at fair value on a nonrecurring basis | | | | | | |
| MPF Loans held in portfolio, net | 4 | 4 | — | — | 4 | |
| Other assets | 1 | 1 | — | — | 1 | |
| Financial assets | 96,417 | \$ 96,896 | \$ 1,182 | \$ 95,310 | \$ 603 | \$ (199) |
| Other non financial assets | 142 | | | | | |
| Assets | \$ 96,559 | | | | | |
| Carried at amortized cost | | | | | | |
| Deposits | \$ (657) | \$ (657) | \$ — | \$ (657) | \$ — | |
| Consolidated obligation discount notes | (44,893) | (44,894) | — | (44,894) | — | |
| Consolidated obligation bonds | (40,708) | (40,912) | — | (40,912) | — | |
| Mandatorily redeemable capital stock | (323) | (323) | (323) | — | — | |
| Other liabilities | (176) | (176) | — | (176) | — | |
| Carried at fair value on a recurring basis | | | | | | |
| Consolidated obligation bonds - fair value option | (3,233) | (3,233) | — | (3,233) | — | |
| Derivative liabilities | (14) | (14) | — | (381) | — | \$ 367 |
| Financial liabilities | (90,004) | \$ (90,209) | \$ (323) | \$ (90,253) | \$ — | \$ 367 |
| Other non financial liabilities | (1,173) | | | | | |
| Liabilities | \$ (91,177) | | | | | |

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

| | Carrying Amount | Fair Value | Level 1 | Level 2 | Level 3 | Netting |
|--|--------------------|--------------------|-----------------|--------------------|---------------|-----------------|
| December 31, 2018 | | | | | | |
| Carried at amortized cost | | | | | | |
| Cash and due from banks | \$ 28 | \$ 28 | \$ 28 | \$ — | \$ — | |
| Interest bearing deposits | 775 | 775 | 775 | — | — | |
| Federal Funds sold and securities purchased under agreements to resell | 10,604 | 10,604 | — | 10,604 | — | |
| Held-to-maturity debt securities | 3,213 | 3,492 | — | 2,870 | 622 | |
| Advances | 51,603 | 51,615 | — | 51,615 | — | |
| MPF Loans held in portfolio, net | 7,096 | 7,091 | — | 7,085 | 6 | |
| Other assets | 190 | 190 | — | 190 | — | |
| Carried at fair value on a recurring basis | | | | | | |
| Trading debt securities | 3,478 | 3,478 | — | 3,478 | — | |
| Government related non-MBS, ABS, and MBS | 14,573 | 14,573 | — | 14,573 | — | |
| Private label residential MBS | 41 | 41 | — | — | 41 | |
| Available-for-sale debt securities | 14,614 | 14,614 | — | 14,573 | 41 | |
| Advances - fair value option election | 1,025 | 1,025 | — | 1,025 | — | |
| Derivative assets | 6 | 6 | — | 140 | — | \$ (134) |
| Other assets - held for sale at fair value | 108 | 108 | — | 108 | — | |
| Carried at fair value on a nonrecurring basis | | | | | | |
| MPF Loans held in portfolio, net | 7 | 7 | — | — | 7 | |
| Other assets | 1 | 1 | — | — | 1 | |
| Financial assets | 92,748 | \$ 93,034 | \$ 803 | \$ 91,688 | \$ 677 | \$ (134) |
| Other non financial assets | 109 | | | | | |
| Assets | \$ 92,857 | | | | | |
| Carried at amortized cost | | | | | | |
| Deposits | (551) | (551) | — | (551) | — | |
| Consolidated obligation discount notes | (42,174) | (42,170) | — | (42,170) | — | |
| Consolidated obligation bonds | (39,898) | (39,895) | — | (39,895) | — | |
| Mandatorily redeemable capital stock | (313) | (313) | (313) | — | — | |
| Other liabilities | (153) | (153) | — | (153) | — | |
| Carried at fair value on a recurring basis | | | | | | |
| Consolidated obligation discount notes - fair value option | (992) | (992) | — | (992) | — | |
| Consolidated obligation bonds - fair value option | (2,352) | (2,352) | — | (2,352) | — | |
| Derivative liabilities | (16) | (16) | — | (321) | — | 305 |
| Financial liabilities | (86,449) | \$ (86,442) | \$ (313) | \$ (86,434) | \$ — | \$ 305 |
| Other non financial liabilities | (1,119) | | | | | |
| Liabilities | \$ (87,568) | | | | | |

We had no transfers between levels for the periods shown.

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Fair Value Option

We may elect the fair value option for financial instruments, such as advances, MPF Loans held for sale, and consolidated obligation discount notes and bonds, in cases where hedge accounting treatment may not be achieved due to the inability to meet the hedge effectiveness testing criteria. Financial instruments for which we elected the fair value option along with their related fair value are shown on our **Statements of Condition**. Refer to our **Note 2 – Summary of Significant Accounting Policies** to the financial statements in our 2018 Form 10-K for further details.

The following table presents the changes in fair values of financial assets and liabilities carried at fair value under the fair value option. These changes were recognized in noninterest income - instruments held under the fair value option in our statements of income.

| | Three months ended June 30, | | Six months ended June 30, | |
|--|--------------------------------|----------------|------------------------------|----------------|
| | 2019 | 2018 | 2019 | 2018 |
| Advances | \$ 24 | \$ (1) | \$ 34 | \$ (10) |
| Other assets | — | (2) | — | (5) |
| Consolidated obligation bonds | (7) | (7) | (15) | (2) |
| Noninterest income - Instruments held under fair value option | \$ 17 | \$ (10) | \$ 19 | \$ (17) |

The following table reflects the difference between the aggregate unpaid principal balance (UPB) outstanding and the aggregate fair value for our long term financial instruments for which the fair value option has been elected. None of the advances were 90 days or more past due and none were on nonaccrual status.

| As of | June 30, 2019 | | December 31, 2018 | |
|-----------------------------|-----------------|-------------------------------------|-------------------|-------------------------------------|
| | Advances | Consolidated Obligation Bonds | Advances | Consolidated Obligation Bonds |
| Unpaid principal balance | \$ 2,841 | \$ 3,215 | \$ 1,037 | \$ 2,358 |
| Fair value over (under) UPB | 26 | 18 | (12) | (6) |
| Fair value | \$ 2,867 | \$ 3,233 | \$ 1,025 | \$ 2,352 |

Notes to Financial Statements - (Unaudited)
 (U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 14 – Commitments and Contingencies

The following table shows our commitments outstanding, which represent off-balance sheet obligations.

| As of | June 30, 2019 | | | December 31, 2018 | | |
|--|------------------------|-----------------------|------------------|------------------------|-----------------------|------------------|
| | Expire within one year | Expire after one year | Total | Expire within one year | Expire after one year | Total |
| Unsettled consolidated obligation bonds | \$ 30 | \$ — | \$ 30 | \$ 114 | \$ — | \$ 114 |
| Member standby letters of credit | 18,115 | 7,675 ^a | 25,790 | 19,971 | 4,335 ^a | 24,306 |
| Housing authority standby bond purchase agreements | 140 | 314 | 454 | 84 | 289 | 373 |
| Advance commitments | 66 | 20 | 86 | 267 | 7 | 274 |
| MPF delivery commitments | 688 | — | 688 | 336 | — | 336 |
| Other | 1 | — | 1 | 3 | — | 3 |
| Commitments | \$ 19,040 | \$ 8,009 | \$ 27,049 | \$ 20,775 | \$ 4,631 | \$ 25,406 |

^a Contains \$5.0 billion and \$1.7 billion of member standby letters of credit as of June 30, 2019, and December 31, 2018, which were renewable annually.

For a description of defined terms see **Note 17 - Commitments and Contingencies** to the financial statements in our 2018 Form 10-K.

Notes to Financial Statements - (Unaudited)
(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Note 15 – Transactions with Related Parties and Other FHLBs

We define related parties as either members whose officers or directors serve on our Board of Directors, or members that control more than 10% of our total voting interests. We did not have any members that controlled more than 10% of our total voting interests for the periods presented in these financial statements.

In the normal course of business, we may extend credit to or enter into other transactions with a related party. These transactions are done at market terms that are no more favorable than the terms of comparable transactions with other members who are not considered related parties.

Members

The following table summarizes material balances we had with our members who are related parties as defined above (including their affiliates) as of the periods presented. The related impacts to our Statements of Income were not material.

| As of | June 30, 2019 | December 31, 2018 |
|------------------------|---------------|-------------------|
| Assets - Advances | \$ 704 | \$ 665 |
| Liabilities - Deposits | 7 | 6 |
| Equity - Capital Stock | 31 | 27 |

Other FHLBs

From time to time, we may loan to, or borrow from, other FHLBs. These transactions are done at market terms that are no more favorable than the terms of comparable transactions with other counterparties. These transactions are overnight, maturing the following business day.

In addition, we provide programmatic and operational support in our role as the administrator of the MPF Program on behalf of the other MPF Banks for a fee.

Material transactions with other FHLBs are identified on the face of our **Financial Statements** starting on page 3.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

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

| As of or for the three months ended | June 30, 2019 | March 31, 2019 | December 31, 2018 | September 30, 2018 | June 30, 2018 |
|--|----------------------|-----------------------|--------------------------|---------------------------|----------------------|
| Selected statements of condition data | | | | | |
| Investments ^a | \$ 36,739 | \$ 35,394 | \$ 32,684 | \$ 29,841 | \$ 36,048 |
| Advances | 51,141 | 50,776 | 52,628 | 54,667 | 54,468 |
| MPF Loans held in portfolio, net | 8,265 | 7,578 | 7,103 | 6,439 | 5,779 |
| Total assets | 96,559 | 94,122 | 92,857 | 91,410 | 96,731 |
| Consolidated obligation discount notes, net | 44,893 | 39,639 | 43,166 | 37,674 | 43,007 |
| Consolidated obligation bonds, net | 43,941 | 47,047 | 42,250 | 46,232 | 46,854 |
| Mandatorily redeemable capital stock recorded as a liability | 323 | 315 | 313 | 313 | 314 |
| Capital stock | 1,678 | 1,660 | 1,698 | 1,718 | 1,805 |
| Retained earnings | 3,663 | 3,608 | 3,536 | 3,488 | 3,428 |
| Total capital | 5,382 | 5,329 | 5,289 | 5,324 | 5,355 |
| Other selected data at period end | | | | | |
| Member standby letters of credit outstanding | \$ 25,790 | \$ 23,410 | \$ 24,306 | \$ 22,715 | \$ 21,587 |
| MPF Loans par value outstanding - FHLB System ^b | 62,574 | 60,236 | 58,820 | 56,687 | 54,572 |
| MPF Loans par value outstanding - FHLB Chicago PFIs ^b | 15,631 | 14,961 | 14,522 | 13,858 | 13,189 |
| FHLB system consolidated obligations par value outstanding | 1,048,412 | 1,010,895 | 1,031,617 | 1,019,098 | 1,059,859 |
| Number of members | 695 | 703 | 705 | 711 | 719 |
| Total employees (full and part time) | 477 | 472 | 468 | 469 | 462 |
| Selected statements of income data | | | | | |
| Net interest income after provision for credit losses | \$ 116 | \$ 118 | \$ 130 | \$ 127 | \$ 132 |
| Noninterest income | 21 | 18 | 1 | 6 | 9 |
| Noninterest expense | 52 | 50 | 56 | 47 | 46 |
| Net income | 76 | 77 | 67 | 77 | 85 |
| Other selected MPF data during the periods^b | | | | | |
| MPF Loans par value amounts funded - FHLB System | \$ 4,480 | \$ 2,788 | \$ 3,600 | \$ 3,968 | \$ 3,555 |
| Quarterly number of PFIs funding MPF products - FHLB System | 753 | 729 | 750 | 761 | 767 |
| MPF Loans par value amounts funded - FHLB Chicago PFIs | \$ 1,224 | \$ 771 | \$ 1,037 | \$ 1,119 | \$ 892 |
| Quarterly number of PFIs funding MPF products - FHLB Chicago | 189 | 176 | 184 | 180 | 184 |
| Selected ratios (rates annualized) | | | | | |
| Total regulatory capital to assets ratio | 5.87% | 5.93% | 5.97% | 6.04% | 5.73% |
| Market value of equity to book value of equity | 105% | 105% | 105% | 105% | 106% |
| Primary mission asset ratio ^c | 72.9% | 73.2% | 71.1% | 70.7% | 69.9% |
| Dividend rate class B1 activity stock-period paid | 5.00% | 5.00% | 4.50% | 4.25% | 4.00% |
| Dividend rate class B2 membership stock-period paid | 2.25% | 2.00% | 1.80% | 1.70% | 1.60% |
| Return on average assets | 0.31% | 0.32% | 0.28% | 0.33% | 0.36% |
| Return on average equity | 5.30% | 5.60% | 4.93% | 5.82% | 6.42% |
| Average equity to average assets | 5.85% | 5.71% | 5.68% | 5.67% | 5.61% |
| Net yield on average interest-earning assets | 0.49% | 0.50% | 0.56% | 0.55% | 0.56% |
| Return on average Regulatory Capital spread to three month LIBOR index | 2.81% | 2.86% | 2.10% | 3.24% | 3.90% |
| Cash dividends-period paid | \$ 21 | \$ 21 | \$ 19 | \$ 17 | \$ 15 |
| Dividend payout ratio-period paid | 28% | 27% | 28% | 22% | 18% |

^a Includes investment debt securities, interest bearing deposits, Federal Funds sold, and securities purchased under agreements to resell.^b Includes all MPF products, on and off our balance sheet. See **Mortgage Partnership Finance Program** on page 7 in our 2018 Form 10-K.^c Annual average year to date basis. See **Mission Asset Ratio** on page 5 in our 2018 Form 10-K for more information.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Forward-Looking Information

Statements contained in this report, including statements describing the plans, objectives, projections, estimates, or future predictions of management, statements of belief, or any statements of assumptions underlying the foregoing, may be “forward-looking statements.” These statements may use forward-looking terminology, such as “anticipates,” “believes,” “expects,” “could,” “plans,” “estimates,” “may,” “should,” “will,” their negatives, or other variations of these terms. We caution that, by their nature, forward-looking statements involve risks and uncertainties related to our operations and business environment, all of which are difficult to predict and many of which are beyond our control. These risks and uncertainties could cause actual results to differ materially from those expressed or implied in these forward-looking statements and 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 such statements.

These forward-looking statements involve risks and uncertainties including, but not limited to, the following:

- changes in the demand by our members for advances, including the impact of pricing increases and the availability of other sources of funding for our members, such as deposits;
- regulatory limits on our investments;
- the impact of new business strategies, including our ability to develop and implement business strategies focused on maintaining net interest income; the impact of our efforts to simplify our balance sheet on our market risk profile and future hedging costs; our ability to execute our business model, implement business process improvements and scale our size to our members' borrowing needs; the extent to which our members use our advances as part of their core financing rather than just as a back-up source of liquidity; and our ability to implement product enhancements and new products and generate enough volume in new products to cover our costs related to developing such products;
- the extent to which amendments to our Capital Plan, including our ability to reduce capital stock requirements and continue to offer the Reduced Capitalization Advance Program for certain future advance borrowings, and our ability to continue to pay enhanced dividends on our activity stock, impact borrowing by our members;
- our ability to meet required conditions to repurchase and redeem capital stock from our members (including maintaining compliance with our minimum regulatory capital requirements and determining that our financial condition is sound enough to support such repurchases), and the amount and timing of such repurchases or redemptions;
- general economic and market conditions, including the timing and volume of market activity, inflation/deflation, unemployment rates, housing prices, the condition of the mortgage and housing markets, increased delinquencies and/or loss rates on mortgages, prolonged or delayed foreclosure processes, and the effects on, among other things, mortgage-backed securities; volatility resulting from the effects of, and changes in, various monetary or fiscal policies and regulations, such as those determined by the Federal Reserve Board and Federal Deposit Insurance Corporation; impacts from various measures to stimulate the economy and help borrowers refinance home mortgages; disruptions in the credit and debt markets and the effect on future funding costs, sources, and availability;
- volatility of market prices, rates, and indices, or other factors, such as natural disasters, that could affect the value of our investments or collateral; changes in the value or liquidity of collateral securing advances to our members;
- changes in the value of and risks associated with our investments in mortgage loans, mortgage-backed securities, and FFELP ABS and the related credit enhancement protections;
- changes in our ability or intent to hold mortgage-backed securities to maturity;
- changes in mortgage interest rates and prepayment speeds on mortgage assets;

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

- membership changes, including the loss of members through mergers and consolidations or through regulatory requirements; changes in the financial health of our members, including the resolution of some members; risks related to expanding our membership to include more institutions with regulators and resolution processes with which we have less experience;
- increased reliance on short-term funding and changes in investor demand and capacity for consolidated obligations and/or the terms of interest rate derivatives and similar agreements, including changes in the relative attractiveness of consolidated obligations as compared to other investment opportunities; changes in our cost of funds due to concerns over U.S. fiscal policy, and any related rating agency actions impacting FHLB consolidated obligations;
- uncertainties relating to the potential phase-out of the London Interbank Offered Rate (LIBOR);
- political events, including legislative, regulatory, judicial, or other developments that affect us, our members, our counterparties and/or investors in consolidated obligations, including, among other things, changes to the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) and related regulations and proposals and legislation related to housing finance and GSE reform; changes by our regulator or changes affecting our regulator and changes in the FHLB Act or applicable regulations as a result of the Housing and Economic Recovery Act of 2008 (Housing Act) or as may otherwise be issued by our regulator; the potential designation of us as a nonbank financial company for supervision by the Federal Reserve;
- regulatory changes to FHLB membership and liquidity requirements by the FHFA;
- the ability of each of the other FHLBs to repay the principal and interest on consolidated obligations for which it is the primary obligor and with respect to which we have joint and several liability;
- the pace of technological change and our ability to develop and support technology and information systems, including our ability to protect the security of our information systems and manage any failures, interruptions or breaches in our information systems or technology services provided to us through third party vendors;
- our ability to attract and retain skilled employees;
- the impact of new accounting standards and the application of accounting rules, including the impact of regulatory guidance on our application of such standards and rules;
- the impact of the application of auditor independence rules to our independent auditor;
- the volatility of reported results due to changes in the fair value of certain assets and liabilities; and
- our ability to identify, manage, mitigate, and/or remedy internal control weaknesses and other operational risks.

For a more detailed discussion of the risk factors applicable to us, see **Risk Factors** in our 2018 Form 10-K on page 17.

These forward-looking statements are representative only as of the date they are made, and we undertake no obligation to update any forward-looking statement as a result of new information, future events, changed circumstances, or any other reason.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Executive Summary

Second Quarter 2019 Financial Highlights

- Advances outstanding decreased \$1.5 billion to \$51.1 billion at June 30, 2019, down from \$52.6 billion at December 31, 2018.
- MPF Loans held in portfolio increased to \$8.3 billion at June 30, 2019, up from \$7.1 billion at December 31, 2018, due mainly to strong loan origination activity as mortgage rates have declined.
- Total investment debt securities increased 6% to \$22.5 billion at June 30, 2019, up from \$21.3 billion at December 31, 2018, as purchases exceeded paydowns and maturities.
- Total assets increased to \$96.6 billion as of June 30, 2019, compared to \$92.9 billion as of December 31, 2018, due mainly to growth in the Bank's liquidity portfolio.
- The Bank recorded net income of \$76 million in the second quarter of 2019, down from \$85 million in the second quarter of 2018.
- Net interest income for the second quarter of 2019 was \$116 million, down from \$132 million for the second quarter of 2018, primarily due to the Bank's higher-earning legacy investment portfolio continuing to pay down, increases in the Bank's lower-yielding liquidity portfolio, and funding the Bank's statement of condition with debt at higher rates than the same period last year.
- In the second quarter of 2019, noninterest income was \$21 million, up \$12 million from \$9 million for the second quarter of 2018, primarily due to unrealized gains on the Bank's trading securities portfolio, net gains from financial instruments for which the Bank has elected the fair value option and the derivatives economically hedging such instruments, and an increase in fee income earned for services provided relating to the MPF Program.
- The Bank remained in compliance with all of its regulatory capital requirements as of June 30, 2019.
- Letters of credit commitments increased to \$25.8 billion at June 30, 2019, up from \$24.3 billion at December 31, 2018.

Summary and Outlook

Second Quarter 2019 Dividend

On July 25, 2019, the Board of Directors of the Bank approved maintaining the dividend declared in the first quarter of 2019 on the Class B1 activity stock and the Class B2 membership stock. Based on the Bank's preliminary financial results for the second quarter of 2019, the Board of Directors declared a dividend of 5.00% (annualized) for Class B1 activity stock and a dividend of 2.25% (annualized) for Class B2 membership stock. The Bank pays a higher dividend per share on Class B1 activity stock to recognize members who use the Bank's advances and, thereby, support the entire cooperative. The higher dividend received on Class B1 activity stock has the effect of lowering members' borrowing costs.

MPF Loan Growth Continues to Rise; Advances and Letters of Credit Activity Remains Strong

Members' use of the MPF Program continued to see strong growth in the second quarter of 2019. MPF Loans held in portfolio totaled \$8.3 billion at the end of the second quarter of 2019, up \$1.2 billion from year-end 2018. In addition, the number of Bank PFIs added to the MPF Program continued to grow during the second quarter of 2019. At the end of the second quarter of 2019, advances outstanding totaled \$51.1 billion, down \$1.5 billion from year-end 2018, and letters of credit totaled \$25.8 billion, up \$1.5 billion from year-end 2018.

Changes to Maximize Member Collateral Value Implemented this Month

Optimizing members' collateral value is integral to maximizing members' borrowing capacity with the Bank. Over the past few years, the Bank has expanded collateral classes that can be pledged, looked for ways to enhance and improve collateral margins in a safe and sound manner, and taken steps to make the pledging process easier for members. On July 1, 2019, the Bank implemented new enhancements intended to further optimize members' collateral value. In particular, the Bank began providing value to certain categories of collateral that were previously considered ineligible.

By the Numbers: 2019 Competitive AHP Round

The 2019 competitive Affordable Housing Program (AHP) round closed on Friday, June 14, with 71 applications received requesting approximately \$42.6 million to support the construction, acquisition, and/or rehabilitation of 4,403 housing units. The Bank expects to award approximately \$23.8 million in early December.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Critical Accounting Policies and Estimates

For a detailed description of our Critical Accounting Policies and Estimates see page 38 in our 2018 Form 10-K.

See **Note 2 - Summary of Significant Accounting Policies** and **Note 3 - Recently Issued but Not Yet Adopted Accounting Standards** to the financial statements in this Form 10-Q for the impact of changes in accounting policies and recently issued accounting standards on our financial results subsequent to December 31, 2018.

There have been no significant changes to the amounts of our critical accounting estimates in 2019.

Results of Operations

Net Interest Income

Net interest income is the difference between the amount we recognize into interest income on our interest earning assets and the amount we recognize into interest expense on our interest bearing liabilities. These amounts were determined in accordance with GAAP and were based on the underlying contractual interest rate terms of our interest earning assets and interest bearing liabilities as well as the following items:

- Amortization of premiums;
- Accretion of discounts and credit OTTI reversals;
- Beginning January 1, 2019 on a prospective basis, hedge ineffectiveness, which represents the difference between changes in fair value of the derivative hedging instrument and the related change in fair value of the hedged item is recognized into either interest income or interest expense, whichever is appropriate. For cash flow hedges, recognition occurs only when amounts are reclassified out of accumulated other comprehensive income. Such recognition occurs when earnings are affected by the hedged item. Prior to January 1, 2019, hedge ineffectiveness was classified in noninterest income on derivatives and hedging activities;
- Net interest paid or received on interest rate swaps that are accounted for as fair value or cash flow hedges;
- Amortization of fair value and cash flow closed hedge adjustments;
- Advance and investment prepayment fees; and
- MPF credit enhancement fees.

The following table presents the increase or decrease in interest income and expense due to volume or rate variances. The calculation of these components includes the following considerations:

- *Average Balance:* Average balances are calculated using daily balances. Amortized cost basis is used to compute the average balances for most of our financial instruments, including MPF Loans held in portfolio that are on nonaccrual status and available-for-sale securities. The calculation of the yield on our available-for-sale securities does not give effect to changes in fair value that are reflected as a component of accumulated other comprehensive income (AOCI). Fair value is used to compute average balances for our trading securities and financial instruments carried at fair value under the fair value option.
- *Total Interest:* Total interest includes the net interest income components, as discussed above, applicable to our interest earning assets and interest bearing liabilities.
- *Yield/Rate:* Effective yields/rates are based on total interest and average balances as defined above. Yields/rates are calculated on an annualized basis.
- The change in volume is calculated as the change in average balance multiplied by the current year yield. The change in rate is calculated as the change in yield multiplied by the prior year average balance. Any changes due to the combined volume/rate variance have been allocated to volume.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Increase or decrease in interest income and expense due to volume or rate variances

| | June 30, 2019 | | | June 30, 2018 | | | Increase (decrease) due to | | |
|--|------------------|----------------|---------------|------------------|----------------|---------------|----------------------------|----------------|----------------|
| | Average Balance | Total Interest | Yield/Rate | Average Balance | Total Interest | Yield/Rate | Volume | Rate | Net Change |
| For the three months ended | | | | | | | | | |
| Investment debt securities | \$ 20,280 | \$ 184 | 3.63 % | \$ 17,750 | \$ 172 | 3.88 % | \$ 23 | \$ (11) | \$ 12 |
| Advances | 55,550 | 362 | 2.61 % | 56,953 | 285 | 2.00 % | (10) | 87 | 77 |
| MPF Loans held in portfolio | 7,860 | 78 | 3.97 % | 5,517 | 60 | 4.35 % | 23 | (5) | 18 |
| Federal funds sold and securities purchased under agreements to resell | 11,658 | 70 | 2.40 % | 12,638 | 54 | 1.71 % | (6) | 22 | 16 |
| Other interest bearing assets | 1,405 | 9 | 2.56 % | 1,200 | 6 | 2.00 % | 1 | 2 | 3 |
| Interest bearing assets | 96,753 | 703 | 2.91 % | 94,058 | 577 | 2.45 % | 18 | 108 | 126 |
| Noninterest bearing assets | 1,738 | | | 764 | | | | | |
| Total assets | 98,491 | | | 94,822 | | | | | |
| Consolidated obligation discount notes | 44,892 | 280 | 2.49 % | 40,816 | 205 | 2.01 % | 26 | 49 | 75 |
| Consolidated obligation bonds | 45,933 | 300 | 2.61 % | 47,541 | 233 | 1.96 % | (10) | 77 | 67 |
| Other interest bearing liabilities | 899 | 7 | 3.11 % | 876 | 7 | 3.20 % | — | — | — |
| Interest bearing liabilities | 91,724 | 587 | 2.56 % | 89,233 | 445 | 1.99 % | 15 | 127 | 142 |
| Noninterest bearing liabilities | 1,059 | | | 235 | | | | | |
| Total liabilities | 92,783 | | | 89,468 | | | | | |
| Net yield interest earning assets | \$ 96,753 | \$ 116 | 0.48 % | \$ 94,058 | \$ 132 | 0.56 % | \$ 3 | \$ (19) | \$ (16) |
| For the six months ended | | | | | | | | | |
| Investment debt securities | \$ 19,914 | \$ 364 | 3.66 % | \$ 18,092 | \$ 335 | 3.70 % | \$ 33 | \$ (4) | \$ 29 |
| Advances | 55,468 | 720 | 2.60 % | 54,895 | 499 | 1.82 % | 7 | 214 | 221 |
| MPF Loans held in portfolio | 7,599 | 154 | 4.05 % | 5,372 | 115 | 4.28 % | 45 | (6) | 39 |
| Federal funds sold and securities purchased under agreements to resell | 11,386 | 137 | 2.41 % | 12,305 | 98 | 1.59 % | (11) | 50 | 39 |
| Other interest bearing assets | 1,113 | 14 | 2.52 % | 1,208 | 10 | 1.66 % | (1) | 5 | 4 |
| Interest bearing assets | 95,480 | 1,389 | 2.91 % | 91,872 | 1,057 | 2.30 % | 52 | 280 | 332 |
| Noninterest bearing assets | 1,701 | | | 716 | | | | | |
| Total assets | 97,181 | | | 92,588 | | | | | |
| Consolidated obligation discount notes | 45,042 | 561 | 2.49 % | 41,899 | 388 | 1.85 % | 39 | 134 | 173 |
| Consolidated obligation bonds | 44,454 | 579 | 2.60 % | 44,358 | 402 | 1.81 % | 2 | 175 | 177 |
| Other interest bearing liabilities | 892 | 15 | 3.36 % | 864 | 11 | 2.55 % | 1 | 3 | 4 |
| Interest bearing liabilities | 90,388 | 1,155 | 2.56 % | 87,121 | 801 | 1.84 % | 40 | 314 | 354 |
| Noninterest bearing liabilities | 1,190 | | | 244 | | | | | |
| Total liabilities | 91,578 | | | 87,365 | | | | | |
| Net yield interest earning assets | \$ 95,480 | \$ 234 | 0.49 % | \$ 91,872 | \$ 256 | 0.56 % | \$ 10 | \$ (32) | \$ (22) |

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

The following analysis and comparisons apply to the periods presented in the above table unless otherwise indicated.

- Interest income from investment debt securities increased due to increases in volume. Subject to FHFA regulatory limits as discussed in **Investments** on page 10 in our 2018 Form 10-K, we began making investments in MBS in June 2018.
- Interest income from advances increased primarily due to the higher interest rate environment.
- Interest income from MPF Loans held in portfolio increased due to higher volumes, as new MPF loan purchases continued to outpace paydown and maturity activity mainly due to strong loan origination activity as mortgage rates have declined. In addition, increased utilization by our PFIs and the addition of new Bank PFIs to the MPF Program continue to contribute to higher volume in our MPF Loans held in portfolio. Rates on MPF Loans declined slightly as the most seasoned loans, and highest rate loans, in our portfolio pay down and are replaced by lower rate loans.
- Interest income from Federal Funds sold and securities purchased under agreements to resell increased due to the higher interest rate environment.
- Interest expense on both our shorter termed consolidated obligation discount notes and our longer termed consolidated obligation bonds increased, primarily due to the higher interest rate environment. They also increased to a lesser extent due to higher volumes as we increased the amounts of debt we issue to fund demand for our advances and other assets.
- For details of the effect our fair value and cash flow hedge activities had on our net interest income see **Total Net Effect Gain (Loss) of Hedging Activities** table on the following page.

Noninterest Income

| | Three months ended June 30, | | Six months ended June 30, | |
|--|--------------------------------|-------------|------------------------------|-------------|
| | 2019 | 2018 | 2019 | 2018 |
| Noninterest income - | | | | |
| Trading securities | 15 | 4 | \$ 23 | \$ 3 |
| Derivatives and hedging activities | \$ (24) | \$ 3 | (26) | — |
| Instruments held under fair value option | 17 | (10) | 19 | (17) |
| MPF fees, 6, 6, 13 and 12 from other FHLBs | 9 | 7 | 17 | 15 |
| Other, net | 4 | 5 | 6 | 8 |
| Noninterest income | \$ 21 | \$ 9 | \$ 39 | \$ 9 |

The following analysis and comparisons apply to the periods presented in the above table.

Trading Securities, Derivatives and Hedging Activities, and Instruments Held Under Fair Value Option

Maturities and unrealized gains in our trading securities, unrealized gains in instruments held under the fair value option, and the derivatives economically hedging such instruments, were the most significant drivers of our increase in noninterest income over the periods presented, offset in part by an overall loss in derivatives and hedging activities. The corresponding gains and losses were primarily attributable to the decline in market interest rates in the second quarter of 2019.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

The following table details the effect of these transactions on our statements of income.

Total Net Effect Gain (Loss) of Hedging Activities

| | Advances | Investments | MPF Loans | Discount Notes | Bonds | Other | Total |
|---|--------------|----------------|---------------|----------------|----------------|-------------|-----------------|
| Three months ended June 30, 2019 | | | | | | | |
| Recorded in net interest income | \$ 10 | \$ (10) | \$ (1) | \$ (7) | \$ (19) | \$ — | \$ (27) |
| Recorded in derivatives & hedging activities | (30) | (12) | 10 | — | 5 | 3 | (24) |
| Recorded in trading securities | — | 15 | — | — | — | — | 15 |
| Recorded on instruments held under fair value option | 24 | — | — | — | (7) | — | 17 |
| Total net effect gain (loss) of hedging activities | \$ 4 | \$ (7) | \$ 9 | \$ (7) | \$ (21) | \$ 3 | \$ (19) |
| Three months ended June 30, 2018 | | | | | | | |
| Recorded in net interest income | \$ 6 | \$ (12) | \$ (1) | \$ (29) | \$ (15) | \$ — | \$ (51) |
| Recorded in derivatives & hedging activities | 8 | (1) | (1) | — | (4) | 1 | 3 |
| Recorded in other, net | — | 3 | — | — | — | — | 3 |
| Recorded on instruments held under fair value option | (1) | — | — | — | (9) | — | (10) |
| Total net effect gain (loss) of hedging activities | \$ 13 | \$ (10) | \$ (2) | \$ (29) | \$ (28) | \$ 1 | \$ (55) |
| Six months ended June 30, 2019 | | | | | | | |
| Recorded in net interest income | \$ 24 | \$ (18) | \$ (1) | \$ (18) | \$ (44) | \$ — | \$ (57) |
| Recorded in derivatives & hedging activities | (41) | (17) | 14 | 3 | 11 | 4 | (26) |
| Recorded in trading securities | — | 23 | — | — | — | — | 23 |
| Recorded on instruments held under fair value option | 34 | — | — | — | (15) | — | 19 |
| Total net effect gain (loss) of hedging activities | \$ 17 | \$ (12) | \$ 13 | \$ (15) | \$ (48) | \$ 4 | \$ (41) |
| Six months ended June 30, 2018 | | | | | | | |
| Recorded in net interest income | \$ 4 | \$ (30) | \$ (2) | \$ (64) | \$ (17) | \$ — | \$ (109) |
| Recorded in derivatives & hedging activities | 22 | — | (2) | 1 | (21) | — | — |
| Recorded in other, net | — | 3 | — | — | — | — | 3 |
| Recorded on instruments held under fair value option | (10) | — | (4) | — | (3) | — | (17) |
| Total net effect gain (loss) of hedging activities | \$ 16 | \$ (27) | \$ (8) | \$ (63) | \$ (41) | \$ — | \$ (123) |

MPF fees (including from other FHLBs)

A majority of MPF fees are from other FHLBs that pay us a fixed membership fee to participate in the MPF Program and a volume based fee for us to provide services related to MPF Loans carried on their balance sheets. MPF fees also include income from other third party off balance sheet MPF Loan products and other related transaction fees. These fees are designed to offset a portion of the expenses we incur to administer the program for them. We had a slight increase in fee income for 2019 compared to 2018.

Other, net

Other, net consists primarily of fee income earned on member standby letter of credit products, as noted in **Item 2. Selected Financial Data**.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Noninterest Expense

| | Three months ended June 30, | | Six months ended June 30, | |
|----------------------------|-----------------------------|--------------|---------------------------|--------------|
| | 2019 | 2018 | 2019 | 2018 |
| Compensation and benefits | \$ 27 | \$ 28 | \$ 55 | \$ 52 |
| Operating expenses | 23 | 17 | 43 | 32 |
| Other | 2 | 1 | 4 | 4 |
| Noninterest expense | \$ 52 | \$ 46 | \$ 102 | \$ 88 |

The following analysis and comparisons apply to the periods presented in the above table. As noted in **Noninterest Income** on page 41, we earned \$9 million, \$7 million, \$17 million, and \$15 million, in MPF fees from the MPF Program for each period presented. Our costs relating to the MPF fees earned are included in the relevant items within noninterest expense above. These costs were \$9 million, \$8 million, \$17 million, and \$16 million, for each period presented above.

Compensation and benefits increased primarily due to increased employee headcount and increases in salaries and incentive compensation expenses. We had 477 employees as of June 30, 2019, compared to 462 as of June 30, 2018.

Operating expenses increased primarily due to increased information technology infrastructure and security spending.

Other consists primarily of our share of the funding for the FHFA, our regulator, and the Office of Finance, which manages the consolidated obligation debt issuances of the FHLBs. In addition, Other includes MPF related nonoperating expenses/gains on the sale of real estate owned.

Assessments

We record the Affordable Housing Program (AHP) assessment expense at a rate of 10% of income before assessments, excluding interest expense on MRCS. See **Note 11 - Affordable Housing Program** in our 2018 Form 10-K for further details.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Other Comprehensive Income (Loss)

| | Three months ended June 30, | | Six months ended June 30, | | Balance remaining in AOCI as of June 30, 2019 |
|---|--------------------------------|---------------|------------------------------|--------------|--|
| | 2019 | 2018 | 2019 | 2018 | |
| Net unrealized gain (loss) available-for-sale debt securities | \$ (17) | \$ (43) | \$ (19) | \$ (92) | \$ 192 |
| Noncredit OTTI held-to-maturity debt securities | 7 | 8 | 13 | 15 | (101) |
| Net unrealized gain (loss) cash flow hedges | (11) | 32 | (13) | 90 | (44) |
| Postretirement plans | 1 | (1) | 5 | (3) | (6) |
| Other comprehensive income (loss) | \$ (20) | \$ (4) | \$ (14) | \$ 10 | \$ 41 |

The following analysis and comparisons apply to the periods presented in the above table.

Net unrealized gain (loss) on available-for-sale debt securities

The net unrealized loss on our available-for-sale (AFS) portfolio for 2019 is attributable to the reversal of net unrealized gains from prior reporting periods as these securities approach maturity (since we expect to receive par value at maturity). The smaller unrealized loss during 2019 compared to 2018 resulted from decreases in market interest rates for 2019. As of June 30, 2019, we still had a sizable net unrealized gain balance remaining in AOCI attributable to our AFS portfolio that we expect to reverse over the remaining life of these securities.

Noncredit OTTI on held-to-maturity debt securities

We recorded unrealized noncredit impairments on held-to-maturity debt securities during the last financial crisis. As the market has recovered and because we intend to hold these securities to maturity, we are recording accretion to the carrying amount of the securities, reversing the remaining loss balance in AOCI over the remaining life of these securities.

Net unrealized gain (loss) on cash flow hedges

The net unrealized loss on cash flow hedges for 2019 resulted from a decrease in overall market interest rates for 2019.

We did not recognize any instrument-specific credit risk in our statements of comprehensive income as of June 30, 2019 due to our credit standing. For further details on the activity in our Other Comprehensive Income (Loss) see **Note 12 - Accumulated Other Comprehensive Income (Loss)** to the financial statements.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Statements of Condition

| | June 30, 2019 | December 31, 2018 |
|--|------------------|----------------------|
| Cash and due from banks, interest bearing deposits, Federal Funds sold, and securities purchased under agreement to resell | \$ 14,247 | \$ 11,407 |
| Investment debt securities | 22,519 | 21,305 |
| Advances | 51,141 | 52,628 |
| MPF Loans held in portfolio, net of allowance for credit losses | 8,265 | 7,103 |
| Other | 387 | 414 |
| Assets | 96,559 | 92,857 |
| Consolidated obligation discount notes | 44,893 | 43,166 |
| Consolidated obligation bonds | 43,941 | 42,250 |
| Other | 2,343 | 2,152 |
| Liabilities | 91,177 | 87,568 |
| Capital stock | 1,678 | 1,698 |
| Retained earnings | 3,663 | 3,536 |
| Accumulated other comprehensive income (loss) | 41 | 55 |
| Capital | 5,382 | 5,289 |
| Total liabilities and capital | \$ 96,559 | \$ 92,857 |

The following is an analysis of the above table and comparisons apply to June 30, 2019 compared to December 31, 2018.

Cash and due from banks, interest bearing deposits, Federal Funds sold, and securities purchased under agreements to resell

Amounts held in these accounts will vary each day based on the following:

- Interest rate spreads between Federal Funds sold and securities purchased under agreements to resell and our debt;
- Liquidity requirements;
- Counterparties available; and
- Collateral availability on securities purchased under agreements to resell.

We increased the amounts of these liquid assets in 2019, maintaining a sufficient pool of liquidity to fund anticipated current advances and letters of credit demand of our members.

Investment Debt Securities

Investment debt securities slightly increased due to purchases in our trading, AFS, and HTM securities portfolio in 2019. This increase was offset by declines in our Treasury and MBS/ABS securities in our trading, AFS, and HTM portfolios that matured or paid down. We resumed making investments in MBS securities starting in June 2018, as noted in **Results of Operations** on page 40 and 41.

Advances

Advance balances declined slightly at the end of second quarter 2019 compared to year end 2018. Advance balances will vary based primarily on member demand or need for wholesale funding and the underlying cost of the advance to the member. In addition, as our advances with captive insurance companies mature, our total advance levels may decrease.

MPF Loans Held in Portfolio, Net of Allowance for Credit Losses

MPF Loans held in portfolio increased as new-purchase volume continued to outpace paydown and maturity activity mainly due to strong loan origination activity as mortgage rates have declined. In addition, increased utilization by our PFIs and the addition of new Bank PFIs to the MPF Program continue to contribute to higher volume in our MPF Loans held in portfolio. In addition to our MPF Loans held in portfolio, we have MPF off-balance sheet products, where we buy and concurrently resell MPF Loans to Fannie Mae or other third party investors or pool and securitize them into Ginnie Mae MBS.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Liquidity, Funding, & Capital Resources

Liquidity

For the period ending June 30, 2019, we maintained a liquidity position in accordance with FHFA regulations and guidance, and policies established by our Board of Directors. Based upon our excess liquidity position described below, we anticipate remaining in compliance with our current liquidity requirements. See **Liquidity, Funding, & Capital Resources** on page 48 in our 2018 Form 10-K for a detailed description of our current liquidity requirements. We use different measures of liquidity as follows:

Overnight Liquidity – Our policy requires us to maintain overnight liquid assets at least equal to 3.5% or \$3.4 billion of total assets. As of June 30, 2019, our overnight liquidity was \$19.3 billion or 20% of total assets, giving us an excess overnight liquidity of \$15.9 billion.

Deposit Coverage – To support our member deposits, FHFA regulations require us to have an amount equal to the current deposits invested in obligations of the U.S. Government, deposits in eligible banks or trust companies, or advances with maturities not exceeding five years. As of June 30, 2019, we had excess liquidity of \$52.3 billion to support member deposits.

Contingency Liquidity – The cumulative five business day liquidity measurement assumes there is a localized credit crisis for all FHLBs where the FHLBs do not have the ability to issue new consolidated obligations or borrow unsecured funds from other sources (e.g., purchasing Federal Funds or customer deposits). Our net liquidity in excess of our total uses and reserves over a cumulative five-business-day period was \$26.1 billion as of June 30, 2019. As discussed on page 49 in the **Liquidity, Funding, & Capital Resources** section of our 2018 Form 10-K, this Contingent Liquidity regulation is scheduled to be rescinded as of January 1, 2020 in light of the Liquidity AB (as discussed below).

Additionally, as discussed on page 49 in the **Liquidity, Funding, & Capital Resources** section of our 2018 Form 10-K, FHFA guidance on liquidity (the “Liquidity AB”) which went into effect on March 31, 2019, requires that we hold positive cash flow assuming no access to the capital markets for a period of between ten to thirty calendar days, and assuming the renewal of all maturing advances. The Liquidity AB also requires the Bank to maintain liquidity reserves between one and 20 percent of our outstanding letter of credit commitments.

The Liquidity AB requires the Bank to hold an additional amount of liquid assets, which could reduce the Bank’s ability to invest in higher-yielding assets, and may in turn negatively impact net interest income. To the extent that the Bank adjusts pricing for its short-term advances and letters of credit, these products may become less competitive, which may adversely affect advance and capital stock levels as well as letters of credit levels. For additional discussion of how our liquidity requirements may impact our earnings, see page 19 in the **Risk Factors** section of our 2018 Form 10-K.

In addition, we fund certain overnight or shorter-term investments and advances with debt that has a maturity that extends beyond the maturities of the related investments or advances. The Liquidity AB provides guidance on maintaining appropriate funding gaps for three-month (-10% to -20%) and one-year (-25% to -35%) maturity horizons, which we were required to meet by December 31, 2018. Subject to market conditions, the Bank’s cost of funding may increase if we are required to achieve the appropriate funding gap by using longer term funding, on which we generally pay higher interest than on our short-term funding.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

We are sensitive to maintaining an appropriate liquidity and funding balance between our financial assets and liabilities, and we measure and monitor the risk of refunding such assets as liabilities mature (refunding risk). In measuring the level of assets requiring refunding, we take into account their contractual maturities, as further described in the notes to the financial statements. In addition, we make certain assumptions about their expected cash flows. These assumptions include: calls for assets with such features, projected prepayments and scheduled amortizations for our MPF Loans held in portfolio, MBS and ABS investments.

The following table presents the unpaid principal balances of (1) MPF Loans held in portfolio, (2) AFS securities, and (3) HTM securities (including ABS and MBS investments), by expected principal cash flows. The table is illustrative of our assumptions about the expected cash flow of our assets, including prepayments made in advance of maturity.

| As of June 30, 2019 | MPF Loans Held in Portfolio | Investment Debt Securities | |
|--|-----------------------------------|----------------------------|----------------------|
| | | Available-for Sale | Held-to- Maturity |
| Year of Expected Principal Cash Flows | | | |
| One year or less | \$ 1,897 | \$ 2,896 | \$ 1,771 |
| After one year through five years | 3,510 | 2,244 | 940 |
| After five years through ten years | 1,552 | 5,755 | 297 |
| After ten years | 1,167 | 3,898 | 75 |
| Total | \$ 8,126 | \$ 14,793 | \$ 3,083 |

We consider our liabilities available to fund assets until their contractual maturity. For further discussion of the liquidity risks related to our access to funding, see page 23 of the **Risk Factors** section in our 2018 Form 10-K.

Funding

Conditions in Financial Markets

In the second quarter of 2019, the ten-year treasury rate fell 40 basis points to 2.01 percent due to fears of slowing U.S. and international growth. In the second quarter of 2019, the Federal Open Market Committee (FOMC) did not alter the target range for the Federal Funds rate, which it last increased from 2.25 to 2.50 percent in December 2018. However, on July 31, 2019, the FOMC lowered the target range for the Federal Funds rate to 2.00 to 2.25 percent. This is the first time the FOMC has reduced the benchmark interest rate since 2008.

We maintained ready access to funding during the second quarter of 2019.

In July 2017, the United Kingdom's Financial Conduct Authority (FCA), a regulator of financial services firms and financial markets in the U.K., announced its intention to cease sustaining the LIBOR indices after 2021. In response, the Federal Reserve Board (FRB) and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee (ARRC) to identify a set of alternative reference interest rates for possible use as market benchmarks. The ARRC has identified the Secured Overnight Financing Rate (SOFR) as its recommended alternative rate. SOFR is based on a broad segment of the overnight Treasuries repurchase market and is intended to be a measure of the cost of borrowing cash overnight collateralized by Treasury securities. The Federal Reserve Bank of New York began publishing SOFR rates in April 2018 and the FHLB System issued its first SOFR-linked debt in the market on November 13, 2018. In January 2019, we participated in our first SOFR-indexed bond issuance and in February 2019, we began offering our first SOFR-linked advance. Many of our assets and liabilities are indexed to LIBOR and we are evaluating the potential impact of the eventual replacement of the LIBOR benchmark interest rate. For further discussion of the risks related to the replacement of LIBOR, see page 24 of the **Risk Factors** section in our 2018 Form 10-K. In addition, we have developed an initial LIBOR transition action plan and convened a project team to implement the transition, which is led by a senior executive and comprised of representatives from various areas across the Bank. Our Asset-Liability Management Committee (ALCO) is the management committee that is responsible for overseeing the transition from LIBOR.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Cash flows from operating activities

| Six months ended June 30, | 2019 | 2018 |
|--|-----------------|---------------|
| Net cash provided by (used in) operating activities | \$ (291) | \$ 235 |

The decrease in net cash provided by operating activities resulted primarily from an increase in cash outflows related to the settlement of derivatives and hedging activities, the result of declining long term market rates in 2019 compared to rising rates in 2018.

Cash flows from investing activities with significant activity

| Six months ended June 30, | 2019 | 2018 |
|--|-------------------|--------------------|
| Liquid assets (Federal Funds sold, securities purchased under agreements to resell, and interest bearing deposits) | \$ (2,841) | \$ (4,609) |
| Investment debt securities | (665) | (625) |
| Advances | 1,826 | (6,495) |
| MPF Loans held in portfolio | (1,166) | (592) |
| Other | 7 | 8 |
| Net cash provided by (used in) investing activities | \$ (2,839) | \$ (12,313) |

Our investing activities consist predominantly of liquid assets, debt securities held for investment, MPF Loans, and advances. The change in net cash provided by (used in) investing activities and changes in allocation within investing activities are discussed below.

- In 2019 we invested in liquid assets to increase our liquidity position to comply with new FHFA liquidity guidance that was published in August 2018. In addition, we invested in liquid assets to earn additional interest income. In 2018 we purchased liquid assets to earn additional interest income.
- Net purchases of investment debt securities was relatively unchanged from 2018, as we achieved key liquidity, MBS, and mission asset ratios.
- Our advances outstanding declined in 2019 due to reduced member demand for wholesale funding. Advance balances will vary based primarily on member demand or need for wholesale funding and the underlying cost of the advance to the member. In 2018, member demand for wholesale funding increased.
- Investment in MPF Loans increased in 2019 compared to 2018 mainly due to strong loan origination activity as mortgage rates have declined. In addition, increased utilization by our PFIs and the addition of new Bank PFIs to the MPF Program continue to contribute to higher volume in our MPF Loans held in portfolio.

Cash flows from financing activities with significant activity

| Six months ended June 30, | 2019 | 2018 |
|--|-----------------|------------------|
| Consolidated obligation discount notes | \$ 1,683 | \$ 1,801 |
| Consolidated obligation bonds | 1,390 | 9,873 |
| Capital stock | (10) | 364 |
| Other | 66 | 27 |
| Net cash provided by (used in) financing activities | \$ 3,129 | \$ 12,065 |

Our financing activities primarily reflect cash flows related to issuing and repaying consolidated obligations. The proceeds from our discount notes and bonds were primarily utilized to fund our investing activities as noted above. The change in net cash provided by (used in) financing activities and change in funding allocations are discussed below.

- Net issuances of shorter termed discount notes were relatively unchanged as our investments in liquid assets and investment debt securities remained relatively steady in 2019 to date as noted in investing activities above.
- We issued less longer termed bonds in 2019 compared to 2018 primarily due to reduced advances to members as noted in investing activities above.
- Capital stock net issuances decreased as members needed less capital stock to support their advance borrowings.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Capital Resources

Capital Rules

Under the Second Amended and Restated Capital Plan of the Federal Home Loan Bank of Chicago, effective October 1, 2015 (Capital Plan), our stock consists of two sub-classes of stock, Class B1 activity stock and Class B2 membership stock (together, Class B stock), both with a par value of \$100 per share and redeemable on five years' written notice, subject to certain conditions. Each member is required to own capital stock in an amount equal to the greater of a membership stock requirement or an activity stock requirement. Class B1 activity stock is available to support a member's activity stock requirement. Class B2 membership stock is available to support a member's membership stock requirement and any activity stock requirement.

Under our Capital Plan, our Board of Directors may set a threshold of between \$10,000 and \$75 million on the amount of Class B2 membership stock that would otherwise be held for membership if a member has advances outstanding that have an activity stock requirement in excess of the threshold amount. In that case, the amount of Class B2 membership stock that exceeds such threshold and is necessary to support advance activity is automatically converted into Class B1 activity stock. That threshold is currently set at \$10,000, which means that we will convert to Class B1 activity capital stock any capital stock supporting advances that exceeds \$10,000.

The Board of Directors may periodically adjust members' activity stock requirement for certain new advances within a range of 2% and 6% of a member's outstanding advances. Our Board implemented this provision through the Reduced Capitalization Advance Program (RCAP) as further discussed below. Each member's activity stock requirement remains at 4.5% for non-RCAP advances.

Our Capital Plan allows for an activity stock requirement for MPF Loans acquired for our portfolio within a range of 0% and 6%, which our Board has set at 0%. Should the Board decide to introduce this capital requirement, we intend to notify members sufficiently in advance of the change and apply that change only to future acquisitions.

The Board may periodically adjust members' membership stock requirement within a range of 0.20% to 2% of a member's mortgage assets. Each member's membership stock requirement is the greater of either \$10,000 or 0.40% of a member's mortgage assets. A member's investment in membership stock is subject to a cap equal to the lesser of (1) a dollar cap set by the Board within a range of \$10,000 and \$75 million, and (2) 9.9% of our total capital stock outstanding as of the prior December 31. The cap on each member's membership stock requirement is now \$5 million, which is less than 9.9% of the Bank's total capital stock outstanding at December 31, 2018, and is thus the operative cap during the remainder of 2019 unless the Board sets a new cap.

Membership stock requirements will continue to be recalculated annually, whereas the activity stock requirement and any automatic conversion of Class B2 membership stock to Class B1 activity stock related to the threshold will apply on a daily basis.

We may only redeem or repurchase capital stock from a member if, following the redemption or repurchase, the member continues to meet its minimum investment requirement and we remain in compliance with our regulatory capital requirements as discussed in **Note 11 - Capital and Mandatorily Redeemable Capital Stock (MRCS)** to the financial statements in this Form 10-Q. Members that withdraw from membership must wait at least five years after their membership was terminated and all of their capital stock was redeemed or repurchased before being readmitted to membership in any FHLB.

For details on our capital stock requirements under our Capital Plan during 2018, see **Capital Resource** on page 55 of our 2018 Form 10-K. Under the terms of our Capital Plan, our Board of Directors is authorized to amend the Capital Plan, and the FHFA must approve all such amendments before they become effective.

For details on our minimum regulatory capital requirements see **Note 11 - Capital and Mandatorily Redeemable Capital Stock (MRCS)** to the financial statements in this Form 10-Q, and **Minimum Capital Requirements** on page F-42 of our 2018 Form 10-K.

Reduced Capitalization Advance Program

RCAP allows members to borrow one or more advances with an activity stock requirement of only 2% for the life of the advance instead of the current 4.5% requirement under our Capital Plan's general provisions. As of June 30, 2019, and December 31, 2018, RCAP advances outstanding total \$23.1 billion to 154 members and \$23.4 billion to 149 members, respectively. We may implement future programs for advances with a reduced activity stock requirement that may or may not have the same characteristics as current RCAP offerings.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Repurchase of Excess Capital Stock

We are currently repurchasing excess Class B2 membership stock on a weekly basis at par value, i.e., \$100 per share. Members may continue to request repurchase of excess capital stock on any business day in addition to the weekly repurchase. All repurchases of excess capital stock, including automatic weekly repurchases, will continue until otherwise announced, but remain subject to our regulatory requirements, certain financial and capital thresholds, and prudent business practices. For details on the financial and capital thresholds relating to repurchases, see **Repurchase of Excess Capital Stock** on page 58 of our 2018 Form 10-K.

Capital Amounts

The following table reconciles our capital reported in our statements of condition to the amount of capital stock reported for regulatory purposes. MRCS is included in the calculation of the regulatory capital and leverage ratios but is recorded in other liabilities in our statements of condition.

| | June 30, 2019 | December 31, 2018 |
|---|-----------------|-------------------|
| Capital Stock | \$ 1,678 | \$ 1,698 |
| MRCS | 323 | 313 |
| Regulatory capital stock | 2,001 | 2,011 |
| Retained earnings | 3,663 | 3,536 |
| Regulatory capital | \$ 5,664 | \$ 5,547 |
| Capital stock | \$ 1,678 | \$ 1,698 |
| Retained earnings | 3,663 | 3,536 |
| Accumulated other comprehensive income (loss) | 41 | 55 |
| GAAP capital | \$ 5,382 | \$ 5,289 |

Accumulated other comprehensive income (loss) in the above table consists of changes in market value of various balance sheet accounts where the change is not recorded in earnings but are instead recorded in equity capital as the income (loss) is not yet realized. For details on these changes please see **Note 12 - Accumulated Other Comprehensive Income (Loss)** to the financial statements.

Although we had no OTTI year to date in 2019, credit deterioration may negatively impact our remaining private label MBS portfolio. We cannot predict if or when impairments will occur, or the impact these impairments may have on our retained earnings and capital position.

We may not pay dividends if we fail to satisfy our minimum capital and liquidity requirements under the FHLB Act and FHFA regulations. On July 25, 2019, our Board of Directors declared a 5.00% dividend (annualized) for Class B1 activity stock and a 2.25% dividend (annualized) for Class B2 membership stock based on our preliminary financial results for the second quarter of 2019. This dividend, including dividends on mandatorily redeemable capital stock, totaled \$25 million and is scheduled for payment on August 15, 2019.

Although we continue to work to maintain our financial strength to support a reasonable dividend, any future dividend determination by our Board will be at our Board's sole discretion and will depend on future operating results, our Retained Earnings and Dividend Policy and any other factors the Board determines to be relevant. For further information see **Retained Earnings & Dividends** on page 59 in our 2018 Form 10-K.

We continue to allocate 20% of our net income each quarter to a restricted retained earnings account in accordance with the Joint Capital Enhancement Agreement that we entered into with the other FHLBs, as further discussed in **Joint Capital Enhancement Agreement** on page F-43 in our 2018 Form 10-K.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Credit Risk Management

Managing Our Credit Risk Exposure Related to Member Credit Products

Our credit risk rating system focuses primarily on our member's overall financial health and takes into account the member's asset quality, earnings, and capital position. For further information please see **Credit Risk** starting on page 62 in our 2018 Form 10-K.

The following table presents the number of members and related credit outstanding to them by credit risk rating. Credit outstanding consists primarily of outstanding advances and letters of credit. MPF credit enhancement obligations, member derivative exposures, and other obligations make up the rest. Of the total credit outstanding, \$50.8 billion were advances (par value) and \$25.8 billion were letters of credit at June 30, 2019, compared to \$52.6 billion and \$24.3 billion at December 31, 2018.

| Rating | June 30, 2019 | | | December 31, 2018 | | |
|--------|-------------------|--------------------|-----------------------|-------------------|--------------------|-----------------------|
| | Borrowing Members | Credit Outstanding | Collateral Loan Value | Borrowing Members | Credit Outstanding | Collateral Loan Value |
| 1-3 | 498 | \$ 76,164 | \$ 133,070 | 509 | \$ 76,456 | \$ 130,791 |
| 4 | 2 | 518 | 584 | 2 | 504 | 536 |
| 5 | 11 | 116 | 184 | 11 | 126 | 193 |
| Total | 511 | \$ 76,798 | \$ 133,838 | 522 | \$ 77,086 | \$ 131,520 |

The majority of members assigned a 4 rating in the above table were required to submit specific collateral listings and the majority of members assigned a 5 rating were required to deliver collateral to us or to a third party custodian on our behalf.

MPF Loans and Related Exposures

For details on our allowance for credit losses on MPF Loans, please see **Note 8 - Allowance for Credit Losses** to the financial statements.

Credit Risk Exposure - Our credit risk exposure on conventional MPF Loans held in portfolio is the risk of loss due to borrower default on contractual principal and interest payments, and the loss severity after liquidation of the real estate collateral securing the MPF Loan. The loss severity takes into consideration our ability to recover losses from PMI, Recoverable CE Fees, and the CE Amount (which may include SMI). The PFI is required to pledge collateral to secure any portion of its CE Amount that is a direct obligation of the PFI. For further details see **Loss Structure for Credit Risk Sharing Products** on page 9 of our 2018 Form 10-K, and **Credit Risk Exposure** and **Setting Credit Enhancement Levels** on page 65 of our 2018 Form 10-K.

Mortgage Repurchase Risk

For details on our mortgage repurchase risk in connection with our sale of MPF Loans to third party investors and MPF Loans securitized into MBS when a loan eligibility requirement or other warranty is breached, see **Mortgage Repurchase Risk** on page 67 in our 2018 Form 10-K.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Investment Debt Securities

We hold a variety of AA or better rated investment securities, mostly government backed or insured securities, and we believe these investments are low risk. There were no material changes in the credit ratings of these securities since December 31, 2018. For further details see **Investment Securities by Rating** on page 69 in our 2018 Form 10-K. Except for private label MBS, we have never taken an impairment charge on our investment securities.

Our private label MBS are predominantly variable rate securities rated below investment grade (BBB). There were no material changes in overall credit quality since December 31, 2018, nor have we acquired any new private label MBS. We last had an other-than-temporary impairment (OTTI) loss on private label MBS in 2012. We currently have unrealized gains on these securities as their market values have improved from the impaired values and subsequent to 2012 we have begun to accrete expected increases in cash flow on these securities back into interest income. For further details see **Note 5 - Investment Debt Securities** to the financial statements.

Unsecured Short-Term Investments

See **Unsecured Short-Term Investments** page 71 in our 2018 Form 10-K for further details on our unsecured short-term investments as well as policies and procedures to limit and monitor our unsecured credit risk exposure.

The following table presents the credit ratings of our unsecured investment counterparties, organized by the domicile of the counterparty or, where the counterparty is a U.S. branch or agency office of a foreign commercial bank, by the domicile of the counterparty's parent. This table does not reflect the foreign sovereign government's credit rating. The unsecured investment credit exposure presented in the table may not reflect the average or maximum exposure during the period as the table reflects only the balances at period end.

| As of June 30, 2019 | AA | A | Total |
|---|-----------------|-----------------|------------------|
| Domestic U.S. | | | |
| Interest-Bearing Deposits | \$ — | \$ 1,155 | \$ 1,155 |
| Fed Funds Sold | 1,500 | 1,495 | 2,995 |
| Total Domestic U.S. | 1,500 | 2,650 | 4,150 |
| U.S. branches and agency offices of foreign commercial banks - Federal Funds sold: | | | |
| Australia | 1,500 | — | 1,500 |
| Austria | — | 300 | 300 |
| Canada | — | 2,225 | 2,225 |
| Finland | 520 | — | 520 |
| France | — | 1,400 | 1,400 |
| Netherlands | — | 375 | 375 |
| Norway | 500 | — | 500 |
| Sweden | — | 700 | 700 |
| Total U.S. branches and agency offices of foreign commercial banks | 2,520 | 5,000 | 7,520 |
| Total unsecured credit exposure | \$ 4,020 | \$ 7,650 | \$ 11,670 |

All \$11.670 billion of the unsecured credit exposure shown in the above table were overnight investments.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Managing Our Credit Risk Exposure Related to Derivative Agreements

See **Note 9 - Derivatives and Hedging Activities** to the financial statements for a discussion of how we manage our credit risk exposure related to derivative agreements. We have credit exposure on net asset positions where we have not received adequate collateral from our counterparties. We also have credit exposure on net liability positions where we have pledged collateral in excess of our liability to a counterparty.

The following table presents our derivative positions where we have such credit exposures. The rating used was the lowest rating among the three largest NRSROs. Non-cash collateral pledged consists of initial margin we posted through our FCMs, on behalf of the DCOs for cleared derivatives and is included in our derivative positions with credit exposure.

| | Net Derivative Fair Value Before Collateral | Cash Collateral Pledged | Noncash Collateral Pledged | Net Credit Exposure to Counterparties ^a |
|---|---|----------------------------|----------------------------------|--|
| As of June 30, 2019 | | | | |
| Nonmember counterparties - | | | | |
| Undercollateralized asset positions - | | | | |
| Bilateral derivatives - | | | | |
| Cleared derivatives | \$ 2 | \$ — | \$ 315 | \$ 317 |
| Overcollateralized liability positions - | | | | |
| Bilateral derivatives - | | | | |
| A | (109) | 113 | — | 4 |
| Cleared derivatives | (4) | — | 58 | 54 |
| Nonmember counterparties | (111) | 113 | 373 | 375 |
| Member institutions | 4 | — | — | 4 |
| Total | \$ (107) | \$ 113 | \$ 373 | \$ 379 |
| As of December 31, 2018 | | | | |
| Nonmember counterparties - | | | | |
| Undercollateralized asset positions - | | | | |
| Bilateral derivatives - | | | | |
| AA | \$ 1 | \$ (1) | \$ — | \$ — |
| BBB | 31 | (30) | — | 1 |
| Overcollateralized liability positions - | | | | |
| Bilateral derivatives - | | | | |
| AA | (1) | 1 | — | — |
| A | (111) | 115 | — | 4 |
| BBB | (53) | 53 | — | — |
| Cleared derivatives | (9) | — | 269 | 260 |
| Nonmember counterparties | (142) | 138 | 269 | 265 |
| Member counterparties | 1 | — | — | 1 |
| Total | \$ (141) | \$ 138 | \$ 269 | \$ 266 |

^a Less than \$1 million is shown as zero.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Legislative and Regulatory Developments

Significant regulatory actions and developments are summarized below.

CFTC Advisory on Initial Margin Documentation Requirements.

On July 9, 2019, the Commodity Futures Trading Commission ("CFTC") issued an advisory (the "Advisory") on its Margin Requirements for Uncleared Swaps for Swap Dealers and Major Swap Participants (the "Margin Rules"), to clarify that documentation governing the posting, collection, and custody of initial margin is not required to be completed until such time as the initial margin amount exceeds an aggregate unmargined exposure threshold of \$50 million. The Margin Rules provide that covered swap entities under the Margin Rules, or non-prudentially regulated swap dealers, are required to post and collect initial margin with counterparties that are swap dealers or financial end users with material swaps exposure, as defined under the rule. The Margin Rules contain, however, an initial margin threshold amount of \$50 million between a covered swap entity (and its margin affiliates) on one hand, and its counterparty (and its margin affiliates) on the other hand. The Advisory clarifies that no initial margin documentation is required until the amount of initial margin exchangeable between a covered swap entity (and its margin affiliates) and its counterparty (and its margin affiliates) exceeds the initial margin threshold amount of \$50 million. The Advisory does, however, instruct covered swap entities to closely monitor initial margin amounts if they are approaching the \$50 million initial margin threshold and to take appropriate steps to ensure that the required documentation is in place at such time as the threshold is reached. The Advisory may apply to certain Bank counterparties, and the Bank is closely monitoring its initial margin thresholds on a counterparty-by-counterparty basis and is evaluating the anticipated impact of the Advisory on its documentation requirements.

SEC Final Rule on Auditor Independence with Respect to Certain Loans or Debtor-Creditor Relationships.

On July 5, 2019, the SEC published a final rule, effective October 3, 2019 ("Final Rule"), that adopts amendments to its auditor independence rules to modify the analysis that must be conducted to determine whether an auditor is independent when the auditor has a lending relationship with certain shareholders of an audit client at any time during an audit or professional engagement period. The Final Rule, among other things, focuses the analysis on beneficial ownership rather than on both record and beneficial ownership; replaces the existing ten percent bright-line shareholder ownership test with a "significant influence" test; and, adds a "known through reasonable inquiry" standard with respect to identifying beneficial owners of the audit client's equity securities.

Under the existing rule on debtor-creditor relationships, the independence of an accounting firm generally could be called into question if it or a covered person in the accounting firm receives a loan from a lender that is a "record or beneficial owner of more than ten percent of the audit client's equity securities."

The Final Rule replaces the existing ten percent bright-line test with a significant influence test similar to that referenced in other SEC rules and based on concepts applied in the Financial Accounting Standards Board ASC Topic 323. Under the Final Rule, with certain exceptions, the receipt of loans from the beneficial owners of an audit client's equity securities where such beneficial owner has significant influence over the audit client would impair the independence of the auditor. The analysis, which will be based on the facts and circumstances, will focus on whether the beneficial owners of an audit client's equity securities have the ability to exercise significant influence over the operating and financial policies of an audit client.

The Bank continues to analyze the potential impact of the Final Rule but currently expects the rule to resolve the matters discussed in Item 9B - Other Information in the Bank's 2018 Annual Report on Form 10-K .

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Item 3. Quantitative and Qualitative Disclosures About Market Risk.

Our Asset/Liability Management Committee provides oversight of risk management practices and policies. This includes routine reporting to senior Bank management and the Board of Directors, as well as maintaining the Income and Market Value Risk Policy, which defines our interest rate risk limits. The table below reflects the change in market risk limits under the policy.

| Scenario as of | June 30, 2019 | | December 31, 2018 | |
|----------------|----------------------------------|------------|----------------------------------|------------|
| | Change in Market Value of Equity | Loss Limit | Change in Market Value of Equity | Loss Limit |
| -200 bp | \$ 78 | \$ (450) | \$ 27 | \$ (450) |
| -100 bp | 46 | (200) | 7 | (200) |
| -50 bp | 12 | (90) | 12 | (90) |
| -25 bp | 4 | (45) | 9 | (45) |
| +25 bp | (4) | (45) | (12) | (45) |
| +50 bp | (13) | (90) | (27) | (90) |
| +100 bp | (42) | (200) | (62) | (200) |
| +200 bp | (142) | (450) | (159) | (450) |

Measurement of Market Risk Exposure

To measure our exposure, we discount the cash flows generated from modeling the terms and conditions of all interest rate-sensitive securities using current interest rates to determine their fair values or spreads to the swap curve for securities where third party prices are used. This includes considering explicit and embedded options using a lattice model or Monte Carlo simulation. We estimate yield curve, option, and basis risk exposures by calculating the fair value change in relation to various parallel changes in interest rates, implied volatility, prepayment speeds, spreads to the swap curve and mortgage rates.

The table below summarizes our sensitivity to various interest rate risk exposures in terms of changes in market value.

| | Option Risk | | | Basis Risk | |
|-------------------------|------------------|--------------------|-------------------|----------------------|-----------------|
| | Yield Curve Risk | Implied Volatility | Prepayment Speeds | Spread to Swap Curve | Mortgage Spread |
| As of June 30, 2019 | \$ — | \$ — | \$ (3) | (20) | \$ — |
| As of December 31, 2018 | — | (1) | (2) | (16) | — |

Yield curve risk – Change in market value for a one basis point parallel increase in the swap curve.

Option risk (implied volatility) – Change in market value for a one percent parallel increase in the swaption volatility.

Option risk (prepayment speeds) – Change in market value for a one percent increase in prepayment speeds.

Basis risk (spread to swap curve) – Change in market value for a one basis point parallel increase in the spread to the swap curve.

Basis risk (mortgage spread) – Change in market value for a one basis point increase in mortgage rates.

As of June 30, 2019, our sensitivity to changes in implied volatility was zero. At December 31, 2018, our sensitivity to changes in implied volatility was \$(1) million. These sensitivities are limited in that they do not incorporate other risks, including but not limited to, non-parallel changes in yield curves, prepayment speeds, and basis risk related to differences between the swap and the other curves. Option positions embedded in our mortgage assets and callable debt impact our yield curve risk profile, such that swap curve changes significantly greater than one basis point cannot be linearly interpolated from the table above.

(U.S. Dollars in tables in millions except per share amounts unless otherwise indicated)

Duration of equity is another measure to express interest rate sensitivity. We report the results of our duration of equity calculations to the FHFA each quarter. We measure duration of equity in a base case using the actual yield curve as of a specified date and then shock it with an instantaneous shift of the entire curve. The following table presents the duration of equity reported by us to the FHFA in accordance with the FHFA's guidance, which prescribes that down and up interest-rate shocks equal 200 basis points. The results are shown in years of duration equity.

| Scenario as of | Duration of equity | | |
|----------------------|--------------------|------------|------------|
| | Down 200 bps | Base | Up 200 bps |
| June 30, 2019 | 2.4 | 0.2 | 2.0 |
| December 31, 2018 | 1.1 | 0.7 | 1.9 |

As of June 30, 2019, on a U.S. GAAP basis, our fair value surplus (relative to book value) was \$288 million, and our market value of equity to book value of equity ratio was 105%, compared to \$294 million and 105% at December 31, 2018. Our market to book value of total capital for regulatory risk-based capital purposes differs from this GAAP calculation, as discussed in **Note 11 - Capital and Mandatorily Redeemable Capital Stock (MRCS)** to the financial statements.

Item 4. Controls and Procedures.

Disclosure Controls and Procedures

Under the supervision and with the participation of management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, as of the end of the period covered by this report (the Evaluation Date). Based on this evaluation, the principal executive officer and principal financial officer concluded as of the Evaluation Date that the disclosure controls and procedures were effective such that information relating to us that is required to be disclosed in reports filed with the SEC (i) is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and (ii) is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

For the most recent quarter presented in this Form 10-Q, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Consolidated Obligations

Our disclosure controls and procedures include controls and procedures for accumulating and communicating information relating to our joint and several liability for the consolidated obligations of other FHLBs. For further information, see **Item 9A. Controls and Procedures** on page 82 of our 2018 Form 10-K.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings.

For a discussion of the litigation relating to private label MBS bonds purchased by the Bank, see **Item 3. Legal Proceedings** on page 31 of our 2018 Form 10-K.

The Bank may also be subject to various other legal proceedings arising in the normal course of business. After consultation with legal counsel, management is not aware of any other proceedings that might have a material effect on the Bank's financial condition or results of operations.

Item 1A. Risk Factors.

In addition to the information presented in this report, readers should carefully consider the factors set forth in the **Risk Factors** section on page 17 in our 2018 Form 10-K, which could materially affect our business, financial condition, or future results. These risks are not the only risks facing us. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also severely affect us.

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

Not applicable.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

- [3.1](#) [Bylaws of the Federal Home Loan Bank of Chicago, as restated and effective June 4, 2019](#)
- [31.1](#) [Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 by the Principal Executive Officer](#)
- [31.2](#) [Certification Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 by the Principal Financial Officer](#)
- [32.1](#) [Certification pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 by the Principal Executive Officer](#)
- [32.2](#) [Certification pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 by the Principal Financial Officer](#)
- 101.INS XBRL Instance Document - The instance document does not appear in the interactive data file because its XBRL tags are embedded within the inline XBRL document.
- 101.SCH XBRL Taxonomy Extension Schema Document
- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
- 101.DEF XBRL Taxonomy Extension Definition Linkbase Document
- 101.LAB XBRL Taxonomy Extension Label Linkbase Document
- 101.PRE XBRL Taxonomy Extension Presentation Linkbase Document
- 104 Cover Page Interactive Data File - the cover page interactive data file does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.

Glossary of Terms

Advances: Secured loans to members.

ABS: Asset backed securities.

AFS: Available-for-sale debt securities.

AOI: Accumulated Other Comprehensive Income.

Capital Plan: The Second Amended and Restated Capital Plan of the Federal Home Loan Bank of Chicago, effective as of October 1, 2015.

CE Amount: A PFI's assumption of credit risk on conventional MPF Loan products held in an MPF Bank's portfolio that are funded by, or sold to, an MPF Bank by providing credit enhancement either through a direct liability to pay credit losses up to a specified amount or through a contractual obligation to provide SMI. Does not apply to the MPF Government, MPF Xtra, MPF Direct or MPF Government MBS product.

CE Fee: Credit enhancement fee. PFIs are paid a credit enhancement fee for managing credit risk and in some instances, all or a portion of the CE Fee may be performance based.

CFTC: Commodity Futures Trading Commission

Consolidated Obligations (CO): FHLB debt instruments (bonds and discount notes) which are the joint and several liability of all FHLBs; issued by the Office of Finance.

Consolidated obligation bonds: Consolidated obligations that make periodic interest payments with a term generally over one year, although we have issued for terms of less than one year.

DCO: Derivatives Clearing Organization. A clearinghouse, clearing association, clearing corporation, or similar entity that enables each party to an agreement, contract, or transaction to substitute, through novation or otherwise, the credit of the DCO for the credit of the parties; arranges or provides, on a multilateral basis, for the settlement or netting of obligations; or otherwise provides clearing services or arrangements that mutualize or transfer credit risk among participants.

Discount notes: Consolidated obligations with a term of one year or less, which sell at less than their face amount and are redeemed at par value when they mature.

Dodd-Frank Act: Dodd-Frank Wall Street Reform and Consumer Protection Act, enacted July 21, 2010, and as amended from time to time.

Excess capital stock: Capital stock held by members in excess of their minimum investment requirement.

Fannie Mae: Federal National Mortgage Association.

FASB: Financial Accounting Standards Board.

FCM: Futures Commission Merchant.

FFELP: Federal Family Education Loan Program.

FHFA: Federal Housing Finance Agency - The Housing and Economic Recovery Act of 2008 enacted on July 30, 2008 created the Federal Housing Finance Agency which became the regulator of the FHLBs.

FHLB Act: The Federal Home Loan Bank Act of 1932, as amended.

FHLBs: The 11 Federal Home Loan Banks or subset thereof.

FHLB System: The 11 FHLBs and the Office of Finance.

FHLBC: The Federal Home Loan Bank of Chicago.

FHLB Chicago: The Federal Home Loan Bank of Chicago.

FLA: First loss account is a memo account used to track the MPF Bank's exposure to losses until the CE Amount is available to cover losses.

Freddie Mac: Federal Home Loan Mortgage Corporation.

GAAP: Generally accepted accounting principles in the United States of America.

Ginnie Mae: Government National Mortgage Association.

Ginnie Mae MBS: Mortgage-backed securities guaranteed by Ginnie Mae.

Government Loans: Mortgage loans insured or guaranteed by the Federal Housing Administration (FHA), the Department of Housing and Urban Development (HUD), the Department of Veteran Affairs (VA) or Department of Agriculture Rural Housing Service (RHS).

GSE: Government sponsored enterprise.

HFS: Held for sale.

HTM: Held-to-maturity debt securities.

LIBOR: London Interbank Offered Rate.

Liquidity AB: Advisory Bulletin 2018-07 Liquidity Guidance, issued by the FHFA on August 23, 2018.

Master Commitment (MC): Pool of MPF Loans purchased or funded by an MPF Bank.

MBS: Mortgage-backed securities.

Moody's: Moody's Investors Service.

MPF[®]: Mortgage Partnership Finance.

MPF Banks: FHLBs that participate in the MPF program.

MPF Direct product: The MPF Program product under which we acquire non-conforming (jumbo) MPF Loans from PFIs without any CE Amount and concurrently resell them to a third party investor.

MPF Government MBS product: The MPF Program product under which we aggregate Government Loans acquired from PFIs in order to issue securities guaranteed by the Ginnie Mae that are backed by such Government Loans.

MPF Loans: Conventional and government mortgage loans secured by one-to-four family residential properties with maturities from five to 30 years or participations in such mortgage loans that are acquired under the MPF Program.

MPF Program: A secondary mortgage market structure that provides liquidity to FHLB members that are PFIs through the purchase or funding by an FHLB of MPF Loans.

MPF Xtra[®] product: The MPF Program product under which we acquire MPF Loans from PFIs without any CE Amount and concurrently resell them to Fannie Mae.

MRCS: Mandatorily redeemable capital stock.

NRSRO: Nationally Recognized Statistical Rating Organization.

Office of Finance: A joint office of the FHLBs established by the Finance Board to facilitate issuing and servicing of consolidated obligations.

OTTI: Other-than-temporary impairment.

PFI: Participating Financial Institution. A PFI is a member (or eligible housing associate) of an MPF Bank that has applied to and been accepted to do business with its MPF Bank under the MPF Program.

PMI: Primary Mortgage Insurance.

PwC: PricewaterhouseCoopers LLP.

RCAP: Reduced Capitalization Advance Program.

Recorded Investment: Recorded investment in a loan is its amortized cost basis plus related accrued interest receivable, if any. Recorded investment is not net of an allowance for credit losses but is net of any direct charge-off on a loan. Amortized cost basis is defined as either the amount funded or the cost to purchase MPF Loans. Specifically, the amortized cost basis includes the initial fair value amount of the delivery commitment as of the purchase or settlement date, agent fees (i.e., market risk premiums or discounts paid to or received from PFIs), if any, subsequently adjusted, if applicable, for accretion, amortization, collection of cash, charge-offs, and cumulative basis adjustments related to fair value hedges.

Recoverable CE Fee: Under the MPF Program, the PFI may receive a contingent performance based credit enhancement fee whereby such fees are reduced up to the amount of the FLA by losses arising under the Master Commitment.

Regulatory capital: Regulatory capital stock plus retained earnings.

Regulatory capital stock: The sum of the paid-in value of capital stock and mandatorily redeemable capital stock.

SEC: Securities and Exchange Commission.

SOFR: Secured Overnight Financing Rate.

SMI: Supplemental mortgage insurance.

System or FHLB System: The Federal Home Loan Bank System consisting of the 11 Federal Home Loan Banks and the Office of Finance.

UPB: Unpaid Principal Balance.

U.S.: United States

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.

FEDERAL HOME LOAN BANK OF CHICAGO

/s/ Matthew R. Feldman

Name: Matthew R. Feldman

Title: President and Chief Executive Officer
(Principal Executive Officer)

Date: August 8, 2019

/s/ Roger D. Lundstrom

Name: Roger D. Lundstrom

Title: Executive Vice President and Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Date: August 8, 2019