

FEDERAL HOME LOAN BANKS

Combined Financial Report for the Year Ended December 31, 2021

This Combined Financial Report provides financial information on the Federal Home Loan Banks. The Federal Home Loan Banks issue consolidated bonds and consolidated discount notes (collectively referred to as consolidated obligations). Consolidated obligations are joint and several obligations of all Federal Home Loan Banks, which means that each individual Federal Home Loan Bank is responsible for the payment of principal and interest on all consolidated obligations. Each Federal Home Loan Bank is a separately chartered entity with its own board of directors and management. There is no centralized, system-wide management or oversight by a single board of directors of the Federal Home Loan Banks.

Federal Home Loan Bank consolidated obligations are not obligations of the United States and are not guaranteed by the United States. No person other than the Federal Home Loan Banks will have any obligations or liability with respect to consolidated obligations.

The Securities Act of 1933, as amended, does not require the registration of consolidated obligations; therefore, no registration statement with respect to consolidated obligations has been filed with the U.S. Securities and Exchange Commission. Neither the U.S. Securities and Exchange Commission, nor the Federal Housing Finance Agency, nor any state securities commission has approved or disapproved of these consolidated obligations or determined if this report is truthful or complete.

Carefully consider the risk factors provided in this and other Combined Financial Reports of the Federal Home Loan Banks (collectively referred to as Combined Financial Reports). Neither the Combined Financial Reports nor any offering materials provided by, or on behalf of, the Federal Home Loan Banks describe all the risks of investing in consolidated obligations. Investors should consult with their financial and legal advisors about the risks of investing in consolidated obligations.

This Combined Financial Report is available on the Federal Home Loan Banks Office of Finance web site at fhlb-of.com. This web site address is provided as a matter of convenience only, and its contents are not made part of or incorporated by reference into this report.

Investors should direct questions about consolidated obligations or the Combined Financial Reports to the Federal Home Loan Banks Office of Finance at (703) 467-3600 or at info@fhlb-of.com.

This Combined Financial Report was issued on March 25, 2022.

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EXPLANATORY STATEMENT ABOUT FEDERAL HOME LOAN BANKS COMBINED FINANCIAL REPORT

The Federal Home Loan Banks (FHLBanks) are government-sponsored enterprises (GSEs), federally-chartered but privately capitalized and independently managed. The FHLBanks together with the Federal Home Loan Banks Office of Finance (Office of Finance) comprise the FHLBank System.

The Office of Finance is responsible for preparing the Combined Financial Reports of the FHLBanks. Each FHLBank is responsible for the financial information and underlying data it provides to the Office of Finance for inclusion in the Combined Financial Reports. The Office of Finance is responsible for combining the financial information it receives from each of the FHLBanks.

The Combined Financial Reports are intended to be used by investors in consolidated obligations (consolidated bonds and consolidated discount notes) of the FHLBanks as these are joint and several obligations of all FHLBanks. This Combined Financial Report is provided using combination accounting principles generally accepted in the United States of America. This combined presentation in no way indicates that these assets and liabilities are under joint management and control as each individual FHLBank manages its operations independently. Therefore, each FHLBank's business, risk profile, financial condition, and results of operations will vary from FHLBank to FHLBank.

Because of the FHLBank System's structure, the Office of Finance does not prepare consolidated financial statements. Consolidated financial statements are generally considered to be appropriate when a controlling financial interest rests directly or indirectly in one of the enterprises included in the consolidation, which is the case in a typical holding company structure where there is a parent company that owns, directly or indirectly, one or more subsidiaries. However, the FHLBanks do not have a parent company that controls each of the FHLBanks. Instead, each of the FHLBanks is owned by its respective members and certain former members.

Each FHLBank is a separately chartered cooperative with its own board of directors and management and is responsible for establishing its own accounting and financial reporting policies in accordance with accounting principles generally accepted in the United States of America (GAAP). Although the FHLBanks work together in an effort to achieve consistency on significant accounting policies, the FHLBanks' accounting and financial reporting policies and practices may vary because alternative policies and presentations are permitted under GAAP in certain circumstances. Statements in this report may be qualified by a term such as "generally," "primarily," "typically," or words of similar meaning to indicate that the statement is generally applicable, but may not be applicable to all FHLBanks or their transactions as a result of their different business practices and accounting and financial reporting policies under GAAP.

An investor may not be able to obtain easily a system-wide view of the FHLBanks' business, risk profile, and financial information because there is no centralized, system-wide management or centralized board of director oversight of the individual FHLBanks. This decentralized structure is not conducive to preparing disclosures from a system-wide view in the same manner as is generally expected of U.S. Securities and Exchange Commission (SEC) registrants. For example, a conventional Management's Discussion and Analysis is not provided in this Combined Financial Report; instead, this report includes a "Financial Discussion and Analysis" prepared by the Office of Finance using information provided by each FHLBank.

Each FHLBank is subject to the reporting requirements of the Securities Exchange Act of 1934, as amended, and must file periodic reports and other information with the SEC. Each FHLBank prepares an annual financial report, filed on SEC Form 10-K, quarterly financial reports, filed on SEC Form 10-Q, and current reports, filed on SEC Form 8-K. Those reports contain additional information that is not contained in this Combined Financial Report. An investor should review those reports and other available information on individual FHLBanks to obtain additional

detail on each FHLBank's business, risk profile, financial condition, results of operations, and accounting and financial reporting policies. Periodic reports and other information filed by each FHLBank with the SEC are made available on its web site and on the SEC's web site at sec.gov. References to web sites and to reports and other information filed by individual FHLBanks with the SEC are provided as a matter of convenience only, and their contents are not made part of or incorporated by reference into this report.

FORWARD-LOOKING INFORMATION

Statements contained in this report, including statements describing the objectives, projections, estimates, or predictions of the future of the FHLBanks and the Office of Finance, may be “forward-looking statements.” These statements may use forward-looking terminology, such as “anticipates,” “believes,” “could,” “estimates,” “expects,” “intends,” “projects,” “plans,” “may,” “should,” “will,” “would,” “likely,” “possible,” or their negatives or other variations on these terms. Investors should note that forward-looking statements, by their nature, involve risks or uncertainties, including those set forth in the [Risk Factors](#) section of this report. Therefore, the actual results could differ materially from those expressed or implied in these forward-looking statements or could affect the extent to which a particular objective, projection, estimate, or prediction is realized.

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

- changes in the general economy, money and capital markets, the rate of inflation (or deflation), employment rates, housing market activity and housing prices, the size and volatility of the residential mortgage market, and uncertainty regarding the global economy;
- levels and volatility of market prices, interest rates, and indices, including those that could affect the value of investments or collateral held by the FHLBanks;
- changes in monetary and fiscal policies;
- changes in liquidity in the financial markets;
- natural disasters, pandemics or other widespread health emergencies, terrorist attacks, civil unrest, geopolitical instability or conflicts (including the recent outbreak of hostilities between Russia and Ukraine), trade disruptions, economic or other sanctions, or other unanticipated or catastrophic events, including the economic and financial disruptions and uncertainties and significant operational challenges created by the COVID-19 pandemic and related developments;
- political events, including legislative, regulatory, judicial, or other developments that affect the FHLBanks, their members, counterparties, dealers of consolidated obligations, or investors in consolidated obligations, such as changes in the Federal Home Loan Bank Act of 1932, as amended (FHLBank Act), or in regulations that affect FHLBank operations, housing finance and GSE reform, and Federal Housing Finance Agency (FHFA) actions;
- changes to, and replacement of, the London Interbank Offered Rate (LIBOR) benchmark interest rate, and the use and acceptance of the Secured Overnight Financing Rate (SOFR), or any alternative reference rate;
- competitive forces, including other sources of funding available to FHLBank members and other entities borrowing funds in the capital markets;
- disruptions in the credit and debt markets and the effect on the FHLBanks’ funding costs, sources, and availability;
- demand for FHLBank advances resulting from changes in FHLBank members’ deposit flows and credit demands, or from changes in liquidity in the financial markets;

- loss of members and repayment of advances made to those members due to institutional failures, consolidations, voluntary withdrawals, or involuntary terminations from FHLBank membership, and changes in the financial health of members;
- changes in domestic and foreign investor demand for consolidated obligations, including short-term funding, or the terms of derivative transactions and similar transactions, including changes in the relative attractiveness of consolidated obligations as compared to other investment opportunities, changes in the availability of other investment opportunities, changes in support from dealers of consolidated obligations, and changes resulting from any modification of the credit ratings of the U.S. government or the FHLBanks;
- the availability of acceptable institutional counterparties for business transactions, including derivative transactions used to manage interest-rate risk;
- the ability to introduce new products and services and successfully manage the risks associated with those products and services, including new types of collateral used to secure advances;
- the pace of technological change and the ability to develop, secure, and support technology and information systems to effectively manage the risks, including information security; and
- the effect of new accounting guidance, including the development of supporting systems and related internal controls.

Neither the FHLBanks nor the Office of Finance undertakes any obligation to publicly update or revise any forward-looking statements contained in this Combined Financial Report, whether as a result of new information, future events, changed circumstances, or any other reason.

BUSINESS

General Information

The 11 FHLBanks are GSEs, organized under the authority of the FHLBank Act. The Office of Finance is a joint office of the FHLBanks established to facilitate the issuance and servicing of debt instruments for the FHLBanks, known as consolidated obligations, and to prepare the quarterly and annual Combined Financial Reports of the FHLBanks. The FHLBanks and the Office of Finance are regulated by the FHFA. (See [Business - Regulatory Oversight, Audits, and Examinations - FHLBanks’ Regulator](#) for more information regarding the FHFA.)

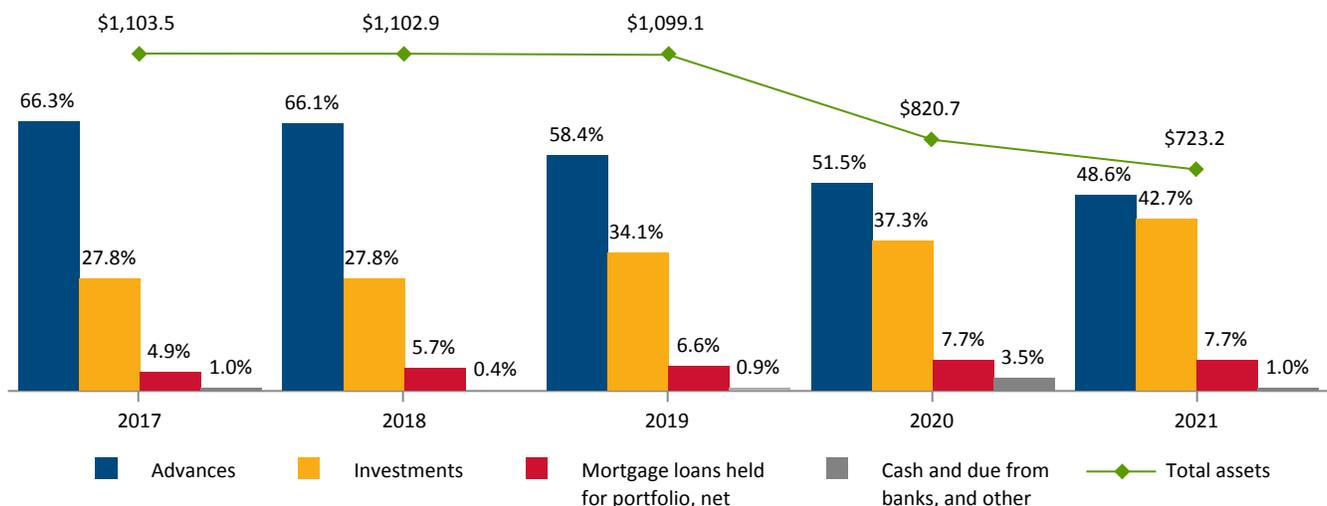
The mission of the FHLBanks is to provide financial products and services to their members and housing associates, including, but not limited to, secured loans known as advances, that assist and enhance their financing of: (1) housing, including single-family and multi-family housing serving consumers at all income levels; and (2) community lending. (See [Business - Other Mission-Related Activities](#) for additional information.) FHFA regulations require each FHLBank’s board of directors to have in effect, at all times, a strategic business plan that describes how the significant business activities of that FHLBank will achieve its mission and public purposes consistent with its relevant statute and meet the FHFA’s regulatory guidance related to core mission achievement. (See [Supplemental Information - Individual FHLBanks Selected Financial Data and Financial Ratios](#) for more information on each FHLBank’s core mission asset ratio at December 31, 2021).

The FHLBanks serve the public by providing a readily available, competitively-priced source of funds to FHLBank members through advances. These funds may be used for residential mortgages, community investments, and other services for housing and community development. In addition, the FHLBanks may provide members and housing associates with a means of enhancing liquidity by purchasing home mortgage loans through mortgage programs developed for their members. Members can also borrow from an FHLBank to fund low-income housing, thereby helping the members satisfy their regulatory requirements under the Community Reinvestment Act. Finally, the FHLBanks may offer their members a variety of other products and services, such as:

- correspondent banking, which includes security safekeeping, wire transfers, and settlements;
- cash management;
- letters of credit; and
- derivative intermediation.

Figure 1 presents the FHLBanks’ total asset composition for the most recent five years.

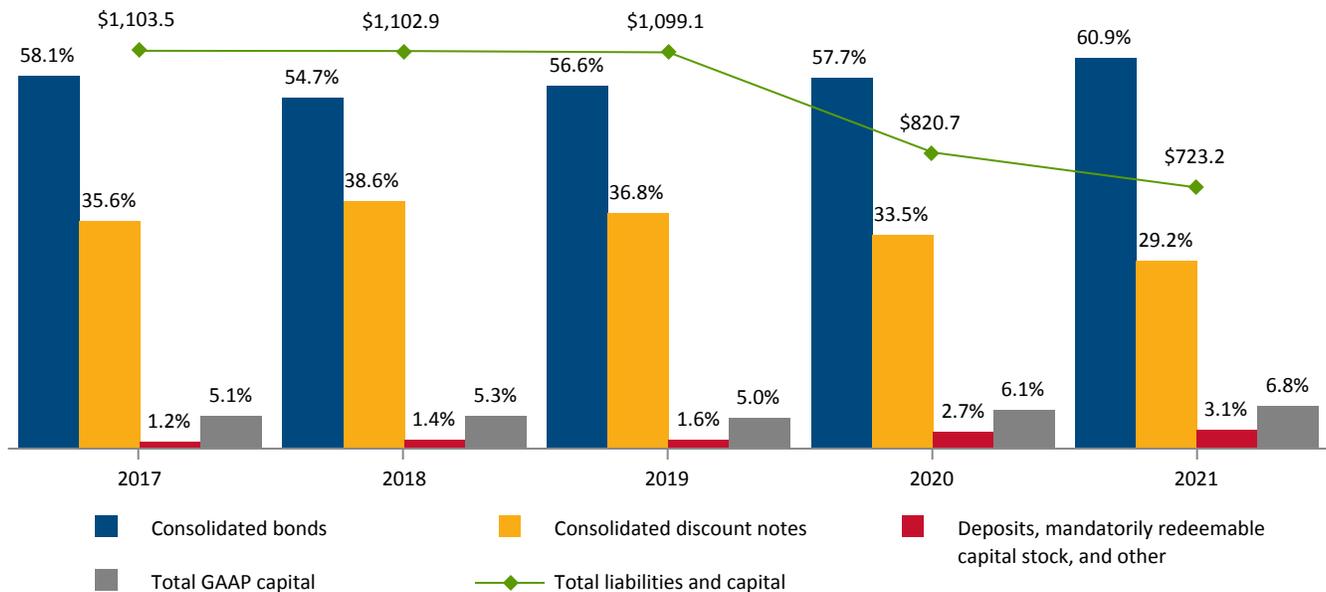
**Figure 1 - FHLBanks’ Asset Composition at Year-end
(dollars in billions)**



Each FHLBank's funding is principally obtained from consolidated obligations, which are debt instruments issued through the Office of Finance on behalf of the FHLBanks. Each FHLBank is jointly and severally liable with the other FHLBanks for all consolidated obligations issued. Consolidated obligations are not obligations of the United States and are not guaranteed by the United States. Each FHLBank also raises funds through member deposits and the issuance of capital stock.

Figure 2 presents the FHLBanks' total liability and capital composition for the most recent five years.

**Figure 2 - FHLBanks' Liability and Capital Composition at Year-end
(dollars in billions)**



The FHLBanks are cooperatives that are privately and wholly owned by their members and certain former members (including non-members that own FHLBank capital stock as a result of merger or acquisition, relocation, charter termination, voluntary termination, or involuntary termination of an FHLBank member). Each FHLBank operates as a separate entity within a defined geographic region of the country, known as its district, with its own board of directors, management, and employees. As a condition of membership, each FHLBank member must purchase and maintain capital stock of its FHLBank. To the extent declared by an FHLBank's board of directors, a stockholder may receive dividends on its investment in its FHLBank's capital stock.

Membership in an FHLBank is voluntary and is generally limited to federally-insured depository institutions, insurance companies, and community development financial institutions. A community development financial institution may be eligible to become a member if it has been certified by the U.S. Department of the Treasury (U.S. Treasury). Eligible community development financial institutions include community development loan funds, community development venture capital funds, and state-chartered credit unions without federal share insurance. (See [Market for Capital Stock and Related Stockholder Matters](#) - Table 3 - Regulatory Capital Stock Held and Membership by Type of Member, which presents FHLBank membership by membership type.) Eligible institutions may generally only become a member of the FHLBank whose district includes the location of the institution's principal place of business. Financial institution holding companies may have one or more subsidiaries, each of which may be a member of the same or a different FHLBank.

Each FHLBank conducts its credit and mortgage program businesses almost exclusively with its members and housing associates. An FHLBank may also have investments in interest-bearing deposits, securities purchased under agreements to resell, federal funds sold, and certificates of deposit, and may also execute mortgage-backed

securities and derivative transactions, with members, former members, or their affiliates. All of these transactions are executed at then-current market prices without preference to the status of the counterparty or the issuer of the investment as a member, former member, or affiliate.

The FHLBanks seek to manage their primary objective of fulfilling their public purpose by enhancing the value of membership for member institutions. The value of membership includes access to readily available credit and other services from the FHLBanks and the value of the cost differential between an FHLBank's advances and other potential sources of funds, as well as the potential for dividends received on a member's investment in an FHLBank's capital stock.

Due to the FHLBanks' cooperative structures, the FHLBanks generally earn a narrow net interest spread and historically have returned a portion of their net income to their stockholders in the form of dividends. Accordingly, the FHLBanks' net income and balance of retained earnings are relatively small as compared to total assets and total liabilities. (See [Selected Financial Data](#) for additional information.)

The primary source of each FHLBank's earnings is net interest income, which is the interest income on advances, mortgage loans, and investments, less the interest expense on consolidated obligations, deposits, and mandatorily redeemable capital stock. The expenses of the FHLBanks, other than interest expense, primarily consist of employee compensation and benefits, other operating expenses, and Affordable Housing Program assessments. The FHLBanks may also recognize non-interest gains and losses, such as gains and losses on derivatives and hedging activities and gains and losses on investment securities.

Advances

The FHLBanks provide funding to members and housing associates through secured loans known as advances. Each FHLBank makes advances based on the creditworthiness and financial condition of the borrowing institutions and the security of mortgage loans and other types of eligible collateral pledged by these institutions. (See [Financial Discussion and Analysis - Risk Management - Credit Risk - Advances](#) for additional information on advances collateral.) Access to FHLBank advances can reduce the amount of low-yielding liquid assets a member would otherwise hold to ensure the same amount of liquidity. Advances, the FHLBanks' largest asset category on a combined basis, were \$351.3 billion and \$422.6 billion, and represented 49% and 51% of combined total assets, at December 31, 2021 and 2020. Because members may originate loans that are not sold in the secondary mortgage market, FHLBank advances can serve as a funding source for a variety of mortgages, including those focused on very low- and low- or moderate-income households. In addition, FHLBank advances can provide interim funding for those members that choose to sell or securitize their mortgages. FHLBank advances can also be a source of funding to smaller lenders that may not have access to all of the funding options available to large financial institutions.

FHLBank credit products also aid members in asset and liability management. Each FHLBank develops its advance programs to meet the particular needs of its members and offers a wide range of fixed-rate and variable-rate advance products, with different maturities, interest rates, payment characteristics, and optionality. For example, an FHLBank may offer advances that have amortization schedules that are structured to match the maturity and payment characteristics of mortgage loans. These advances can reduce a member's interest-rate risk associated with holding long-term, fixed-rate mortgages. In addition, an FHLBank may make commitments for advances to a member covering a predefined period, which aids a member and an FHLBank in cash flow planning and enables members to reduce funding risk.

Each FHLBank may also offer specialized programs that provide members with access to below-market interest rate advances to create affordable homeownership and rental opportunities, and for commercial and economic development activities. (See [Business - Other Mission-Related Activities](#) for more information.)

Advance Products

- **Fixed-Rate Advances.** These advances are available over a variety of terms and are used to fund both the short- and long-term liquidity needs of borrowers. Typically, interest is paid monthly or quarterly and the principal is paid at maturity.
- **Variable-Rate Advances.** These advances are available over a variety of terms and are used to fund both short- and long-term liquidity needs of borrowers. Variable-rate advances have interest rates that reset periodically based on specified indices, such as SOFR, or consolidated obligation yields. Typically, interest is paid monthly or quarterly and the principal is paid at maturity.
- **Hybrid Advances.** These advances contain a one-time option to embed either a floor or cap at any time during the life of the advance and may be either fixed- or variable-rate at the time of issuance.
- **Convertible Advances.** These advances allow an FHLBank to convert an advance from one interest-payment term structure to another. Fixed-rate to variable-rate convertible advances have a defined lockout period after which they convert to the current market rate or another structure. A convertible advance generally carries a lower initial interest rate than a comparable-maturity fixed-rate advance without the conversion feature. Variable-rate to fixed-rate convertible advances have a defined lockout period during which the interest rates adjust based on a spread to specified indices, such as SOFR, or consolidated obligation yields. At the end of the lockout period, these advances may convert to fixed-rate advances.
- **Amortizing Advances.** These advances are medium- or long-term loans with amortization schedules. In addition, certain amortizing advances have amortization schedules that are structured to match the payment characteristics of a mortgage loan or portfolio of mortgage loans. The principal and interest are repaid monthly, quarterly, semi-annually, or annually over the term of the advances. Amortizing advances may be fully amortizing to the maturity date, or may have a balloon payment due at maturity.
- **Overnight Advances.** These advances are used primarily to fund the short-term liquidity needs of borrowers. An overnight advance may automatically renew until the member pays down the advance, or it may mature on the next business day. Interest rates are set daily.

In addition to these advance products, the FHLBanks' advance programs may include products with embedded option features, such as interest-rate caps, floors, and call and put options, advances with non-standard interest-rate indices, forward-starting advances, and advances with a combination of these, or other, features.

Advances to Housing Associates

The FHLBanks are permitted to provide advances to housing associates (including state and local housing authorities) that are approved mortgagees under Title II of the National Housing Act and that meet the following requirements:

- it is a chartered institution having succession;
- it is subject to the inspection and supervision of some governmental agency;
- its principal activity in the mortgage field consists of lending its own funds;
- its financial condition is such that advances may be safely made to the housing associate; and
- if it is a state housing financing agency (as defined by FHFA regulation), it shall provide satisfactory evidence that it functions as a source of mortgage loan financing in that state or for the Indian or Alaskan Native community.

Housing associates are not subject to certain provisions applicable to members under the FHLBank Act. For example, they are not required or permitted to purchase capital stock in an FHLBank. However, the regulatory

lending requirements that apply to members generally also apply to housing associates. Advances to housing associates were \$1,588 million and \$1,084 million at December 31, 2021 and 2020.

Standby Letters of Credit

An FHLBank issues standby letters of credit on behalf of its members to support certain obligations of the members (or member's customers) to third-party beneficiaries. These standby letters of credit are generally subject to the same collateralization and borrowing limits that are applicable to advances. Standby letters of credit may be offered to assist members and non-member housing associates in facilitating residential housing finance, community lending, and asset-liability management, and to provide liquidity. In particular, members often use standby letters of credit as collateral for deposits from federal, state, and local government agencies. Standby letters of credit are executed for members for a fee. If an FHLBank is required to make a payment for a beneficiary's draw, the member either reimburses the FHLBank for the amount drawn or, subject to the applicable FHLBank's discretion, the amount drawn may be converted into a collateralized advance to the member. The notional amounts of outstanding standby letters of credit were \$151.2 billion and \$164.4 billion at December 31, 2021 and 2020.

Investments

The FHLBanks maintain investment portfolios for liquidity purposes and to generate additional earnings. The income from these investment portfolios also bolsters the FHLBanks' capacity to support affordable housing and community investment. Investments were \$308.5 billion and \$305.9 billion, and represented 43% and 37% of the FHLBanks' combined total assets, at December 31, 2021 and 2020.

The FHLBanks maintain short-term investment portfolios, the proceeds of which may provide funds to meet the credit needs of their members and to maintain liquidity. Within the portfolio of short-term investments, the FHLBanks may have unsecured credit exposure on certain investments. These portfolios may include:

- interest-bearing deposits;
- securities purchased under agreements to resell;
- federal funds sold;
- certificates of deposit;
- U.S. Treasury obligations;
- Other U.S. obligations; and
- GSE obligations.

The FHLBanks maintain long-term investment portfolios as an additional source of liquidity and to earn interest income. These investments generally provide the FHLBanks with higher returns than those available on short-term investments. These portfolios may include:

- U.S. Treasury obligations;
- Other U.S. obligations;
- GSE obligations;
- Agency obligations; and
- Other MBS and ABS.

FHFA regulations prohibit the FHLBanks from investing in certain types of securities and limit the FHLBanks' investment in mortgage-backed securities (MBS) and asset-backed securities (ABS). (See [Financial Discussion and Analysis - Combined Financial Condition - Investments](#) and [Financial Discussion and Analysis - Risk Management - Credit Risk - Investments](#) for information on these restrictions and limitations.)

Mortgage Loans

An FHLBank may have programs to purchase mortgage loans from members or housing associates called participating financial institutions (PFIs). The primary programs are the Mortgage Purchase Program (MPP) and the Mortgage Partnership Finance® (MPF®) Program (“Mortgage Partnership Finance,” “MPF,” and “MPF Xtra” are registered trademarks of the FHLBank of Chicago). In addition, the FHLBank of New York implemented the Mortgage Asset Program (MAP®, which is a registered trademark of the FHLBank of New York) in order to replace its participation in the MPF Program beginning in March 2021. Through these programs, an FHLBank invests principally in qualifying 15-year to 30-year conventional and government-guaranteed or -insured fixed-rate mortgage loans and participations in pools of these mortgage loans, secured by one-to-four family residential properties. Government-guaranteed or -insured mortgage loans are guaranteed or insured by the Federal Housing Administration, the Department of Veterans Affairs, the Rural Housing Service of the Department of Agriculture, or the U.S. Department of Housing and Urban Development (HUD). Mortgage loans held for portfolio, net were \$55.5 billion and \$62.8 billion, each representing 8% of the FHLBanks’ combined total assets, at December 31, 2021 and 2020.

An FHLBank may purchase mortgage loans to support the FHLBank’s housing mission, provide an additional source of liquidity to its members, diversify its investments, and generate additional earnings. As such, these programs serve as a secondary mortgage structure for those FHLBank members originating mortgage loans that they choose to sell into the secondary mortgage market rather than hold in their own loan portfolios.

Each FHLBank manages the interest-rate risk, prepayment option risk, and liquidity risk of the fixed-rate mortgage loans in which it holds an interest, while the PFI manages the origination and servicing activities. For conventional mortgage loans held in an FHLBank’s portfolio, the FHLBank and the PFI share in the credit risk pursuant to a master commitment because the PFI is required to provide a measure of credit-loss protection to the FHLBank(s) holding interests in loans generated by the PFI. For government-guaranteed or -insured mortgage loans, the servicer provides and maintains a guarantee or insurance from the applicable government agency. The servicer is responsible for compliance with all government agency requirements and for obtaining the benefit of the applicable guarantee or insurance with respect to defaulted government-guaranteed or -insured mortgage loans. Any losses incurred on these government-guaranteed or -insured mortgage loans that are not recovered from the issuer or the guarantor are absorbed by the servicer. (See [Note 6 - Mortgage Loans - Credit Enhancements](#) to the accompanying combined financial statements and [Financial Discussion and Analysis - Risk Management - Credit Risk - Mortgage Loans Held for Portfolio](#) for a detailed discussion of the credit enhancement and risk sharing arrangements and loan product information for these programs.)

MPP

Each FHLBank participating in the MPP (MPP FHLBank) may acquire mortgage loans from its approved PFIs, which can also be third-party servicers for the FHLBank’s MPP. Each MPP FHLBank is responsible for operating its own program, including the marketing and funding of acquired loans, and establishing the loan origination, underwriting, and servicing criteria of the loans. An MPP FHLBank neither services the acquired loans, nor owns any servicing rights. However, an MPP FHLBank must approve any servicer, including a member-servicer, and any transfers of servicing to third parties. Each MPP FHLBank has engaged BNY Mellon as the master servicer for its MPP.

MAP

Beginning in 2021, the FHLBank of New York began to purchase mortgage loans from its members or affiliates under the MAP and discontinued participation in the MPF Program. Existing MPF loans from its prior participation in the MPF Program continue to be held by the FHLBank of New York and supported by the FHLBank of Chicago as the MPF administrator. In order to participate in the MAP, member sellers will be required to purchase FHLBank of New York stock equal to 4.5% of the outstanding principal balance of MAP assets sold by the member to the FHLBank of New York. The FHLBank of New York engaged Nationstar as the master servicer for MAP.

MPF Program

Each FHLBank participating in the MPF Program (MPF FHLBank) may acquire or participate in all or a portion of the acquired mortgage loans from a PFI of another MPF FHLBank. The FHLBank of Chicago acts as the administrator of the MPF Program and provides programmatic and operational support to the MPF FHLBanks and each of their PFIs. In this regard, the FHLBank of Chicago has engaged a vendor for master servicing which monitors the PFIs' compliance with the MPF Program requirements and issues periodic reports to the FHLBank of Chicago. As of December 31, 2021, there were four MPF Program portfolio products (MPF Original, MPF 125, MPF 35, and MPF Government) in which an MPF FHLBank purchases loans that have been acquired or have already been closed by the PFI with its own funds.

The FHLBank of Chicago purchases eligible MPF loans from PFIs located in its district, and in other MPF FHLBank districts, under the MPF Xtra, the MPF Government MBS, and the MPF Direct products (although MPF Direct is not currently offered). PFIs are not required to provide credit enhancement and do not receive credit enhancement fees in connection with these three off-balance sheet mortgage loan products. Upon purchase from PFIs, the FHLBank of Chicago concurrently sells mortgage loans to Fannie Mae under the MPF Xtra product and to third-party investors under the MPF Direct product. Under the MPF Government MBS product, the FHLBank of Chicago aggregates government-guaranteed or -insured mortgage loans, which are classified as mortgage loans held for sale for a short period of time until securitized as Ginnie Mae MBS.

Consolidated Obligations

Consolidated obligations consist of consolidated bonds and consolidated discount notes, which are joint and several obligations of all FHLBanks, issued through the Office of Finance. Consolidated obligations are the principal funding source used by the FHLBanks to make advances and to purchase mortgage loans and investments. Consolidated obligations outstanding were \$651.9 billion and \$748.5 billion, each representing 97% of the FHLBanks' total liabilities, at December 31, 2021 and 2020.

The debt structures and maturities of consolidated obligations issued by the FHLBanks are generally driven by market conditions, cost of specific debt issuance, or desired maturity terms. All consolidated obligations are issued through the Office of Finance on behalf of the FHLBanks. The Office of Finance can issue consolidated obligations only when an FHLBank provides a request for and agrees to accept the funds. An FHLBank is generally prohibited by regulation from purchasing, directly or indirectly, securities issued through the Office of Finance upon their initial issuance. The FHFA and the Secretary of the Treasury have oversight over the issuance of FHLBank debt.

The capital markets have generally considered the FHLBanks' consolidated obligations to be agency debt. As a result, although the U.S. government does not guarantee the FHLBanks' debt securities, the FHLBanks have historically had ready access to funding at relatively favorable rates. The FHLBanks' ability to access the capital markets through the issuance of consolidated obligations, using a variety of debt structures and maturities, allows the FHLBanks to manage their balance sheets effectively and efficiently.

Credit Ratings. At March 15, 2022, consolidated obligations were rated AA+/A-1+ by S&P Global Ratings (S&P) and Aaa/P-1 by Moody's Investors Service (Moody's). These ratings reflect the FHLBanks' status as GSEs and indicate that these rating agencies believe the FHLBanks have the capacity to meet their commitments to pay principal and interest on consolidated obligations. The FHLBanks' consolidated obligations have historically received the same credit rating as the government bond credit rating of the United States, even though the consolidated obligations are not obligations of the United States. S&P, Moody's, or other rating organizations could downgrade or upgrade the credit rating of the U.S. government and GSEs, including the FHLBanks and their consolidated obligations. Investors should note that a rating issued by a nationally recognized statistical rating organization is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn by a nationally recognized statistical rating organization at any time. Investors should evaluate the rating of each nationally

recognized statistical rating organization independently. Investors should not take the historical or current ratings of the FHLBanks and their consolidated obligations as an indication of future ratings for the FHLBanks or their consolidated obligations.

Interest Rates. Consolidated obligations can be issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms that are indexed to specified indices, such as SOFR. The FHLBanks may issue variable-rate consolidated bonds and simultaneously execute interest-rate swaps to hedge the basis risk of the variable-rate debt. (See [Note 7 - Derivatives and Hedging Activities](#) to the accompanying combined financial statements.)

Derivative Transactions. To meet the specific needs of both the FHLBanks and certain investors in consolidated obligations, both fixed-rate and variable-rate consolidated bonds may contain features that result in complex coupon payment terms and call options. When these consolidated bonds are issued, the FHLBanks typically enter into derivatives containing offsetting features that effectively convert the terms of these consolidated bonds to better match the interest-rate risk management objectives of the issuing FHLBank(s). Each FHLBank transacts most of its derivatives with large banks and major broker-dealers. Some of these banks and broker-dealers, or their affiliates, may buy, sell, and distribute consolidated obligations.

Other Transactions and Services. Certain securities dealers and banks or their affiliates enter into other transactions with, and perform other services for, the FHLBanks. These services include the purchase and sale of investment securities. In some cases, some or all of the net proceeds from an issue of consolidated obligations may be loaned to a member that is affiliated with the securities dealer involved in underwriting that issue.

Joint and Several Liability. Although each FHLBank is primarily liable for its portion of consolidated obligations (i.e., those issued on its behalf), each FHLBank is also jointly and severally liable with the other FHLBanks for the payment of principal and interest on all consolidated obligations of the FHLBanks. The FHFA, at its discretion, may require any FHLBank to make principal or interest payments due on any consolidated obligation whether or not the consolidated obligation represents a primary liability of that FHLBank. Although an FHLBank has never made the principal or interest payments due on a consolidated obligation on behalf of another FHLBank, if that event should occur, FHFA regulations provide that the paying FHLBank is entitled to reimbursement from the FHLBank that is primarily liable for that consolidated obligation for any payments and other associated costs, including interest to be determined by the FHFA. If, however, that FHLBank is unable to satisfy its repayment obligations, then the FHFA may allocate the outstanding liabilities of that FHLBank among the remaining FHLBanks on a pro-rata basis in proportion to each FHLBank's participation in all consolidated obligations outstanding or in any other manner it may determine to ensure that the FHLBanks operate in a safe and sound manner.

Regulatory Requirements. FHFA regulations require that each FHLBank maintain the following types of assets, free from any lien or pledge, in an amount at least equal to that FHLBank's participation in all consolidated obligations outstanding:

- cash;
- obligations of or fully guaranteed by the United States;
- secured advances;
- mortgages, which have any guaranty, insurance, or commitment from the United States or any agency of the United States; and
- investments described in Section 16(a) of the FHLBank Act (i.e., obligations, participations, or other instruments of or issued by Fannie Mae or Ginnie Mae; mortgages, obligations, or other securities which are or ever have been sold by Freddie Mac; and such securities as fiduciary and trust funds may invest in under the laws of the state in which the FHLBank is located).

Any assets subject to a lien or pledge for the benefit of the holders of any issue of consolidated obligations are treated as if they were free from lien or pledge for purposes of compliance with these regulations. In addition, each FHLBank must adhere to the leverage limits set by the FHLBank Act and the regulatory limits set by the FHFA. At December 31, 2021, each FHLBank was in compliance with these requirements.

Consolidated Discount Notes

Investor demand for short-term securities (one year or less) may be met through FHLBank discount note programs. Discount notes are offered to the market through the discount note window or through regularly scheduled competitive auctions. Discount notes outstanding were \$210.9 billion and \$274.8 billion, and represented 32% and 37% of total consolidated obligations outstanding, at December 31, 2021 and 2020.

Discount Note Window. On a daily basis, through the discount note window, the FHLBanks may request that specific amounts of consolidated discount notes with specific maturity dates be offered by the Office of Finance for sale through approved dealers, or directly to approved institutional investors without the use of a dealer of consolidated obligations. Discount notes issued through the discount note window are generally available with same day, next business day, and two or more business days settlement. Consolidated discount notes have a maturity range of one day to one year, are generally issued below face value, and mature at face value. Rates and maturity categories for the discount note window are set frequently and announced to dealers of consolidated obligations on the Office of Finance's public website, over a nationally recognized financial news service, or through an electronic communication medium. The Office of Finance commits to issue consolidated discount notes on behalf of the requesting FHLBanks after dealers submit orders for the specific consolidated discount notes offered for sale. The FHLBanks receive funding based on the time of their request, the rate requested for issuance, the trade date, the settlement date, and the maturity date. However, an FHLBank may receive less than its requested funding (or may not receive any funding) because of investor demand or competing requests from other FHLBanks for the same funding.

Auctions. Twice weekly, one or more of the FHLBanks may also request that specific amounts of consolidated discount notes with fixed maturities of 4, 8, 13, and 26 weeks be offered by the Office of Finance through single-price (Dutch) auctions conducted with securities dealers in the consolidated discount note bidding group. Issuance is contingent on FHLBank demand for funding with these terms. Discount notes issued through the auction are available with next business day settlement. Auction sizes and maturity categories are announced to dealers of consolidated obligations during the auction process on the Office of Finance's public website, over a nationally recognized financial news service, or through an electronic communication medium. The consolidated discount notes offered for sale through Dutch auctions are not subject to a limit on the maximum costs the FHLBanks are willing to pay. Bids will be accepted from the lowest bid rate until the auction size is met, and all winning bids will be awarded at the highest bid rate accepted. The FHLBanks receive funding based on their requests at the highest bid rate accepted. If the bids submitted are less than the total of the FHLBanks' requests, an FHLBank receives funding based on that FHLBank's regulatory capital relative to the regulatory capital of other FHLBanks offering consolidated discount notes.

Consolidated Bonds

Consolidated bonds may be issued to raise short-, intermediate-, or long-term funds for the FHLBanks. Consolidated bonds are issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms and have maturities ranging from three months to 30 years. To meet the specific needs of both the FHLBanks and certain investors in consolidated obligations, both fixed-rate and variable-rate consolidated bonds may contain features that result in complex coupon payment terms and call options. Consolidated bonds can be issued and distributed through negotiated or competitive bidding (auction) transactions with approved dealers or directly to approved institutional investors without the use of a dealer of consolidated obligations. Consolidated bonds outstanding were \$441.0 billion and \$473.7 billion, and represented 68% and 63% of total consolidated obligations outstanding, at December 31, 2021 and 2020.

Negotiated Transactions

Reverse Inquiry. The FHLBanks may issue fixed-rate non-callable (bullet), floating-rate, callable, step-up/step-down, and other types of bonds through negotiated bond transactions. These transactions are flexible and can be investor-customized with different interest-rate characteristics, terms, and, for bonds issued under the Global Debt Program, currencies. Dealers of consolidated obligations contact the Office of Finance or the FHLBanks directly if there is a bond structure they need to meet investor demand.

Syndicated. The FHLBanks may issue bonds (e.g., SOFR-linked floating-rate notes) on a syndicated basis through a group of approved dealers selected by the FHLBanks.

Mandated Global. The FHLBanks may issue large, liquid bullet bonds through the Global Debt Program (mandated global bullets) to expand their pool of investors, while diversifying their funding sources. Mandated global bullets are issued through a formal dealer syndicate following pre-announced calendar issuance dates. The FHLBanks and the Office of Finance maintain a debt issuance process for scheduled issuance of mandated global bullets. As part of this process, management from each FHLBank will determine and communicate a firm commitment to the Office of Finance for an amount of scheduled mandated global bullet debt to be issued on its behalf. If the FHLBanks' commitments do not meet the minimum debt issue size, each FHLBank receives an allocation of proceeds equal to either the larger of the FHLBank's commitment or the ratio of the individual FHLBank's regulatory capital to total regulatory capital of all of the FHLBanks. If the FHLBanks' commitments exceed the minimum debt issue size, then the proceeds are allocated based on relative regulatory capital of the FHLBanks, with the allocation limited to either the lesser of the allocation amount or the actual commitment amount. The FHLBanks can, however, pass on any scheduled calendar slot and decline to issue any mandated global bullet consolidated bonds upon agreement of at least eight of the FHLBanks.

Competitive Bidding (Auction) Transactions

TAP Issue Program. The FHLBanks use the TAP Issue Program to issue fixed-rate, non-callable bonds with specific maturities that may be reopened daily through a Dutch award method through a designated TAP bidding group. The goal of the TAP Issue Program is to aggregate frequent smaller fixed-rate funding needs into a larger bond issue that may have greater market liquidity.

Callables. American-style, and potentially other callable bonds, may be auctioned through the callable bidding group.

Mandated Global Reopenings. Individual mandated global bullet bonds may be reopened on any pre-announced calendar issuance date through a Dutch award method through a designated bidding group.

Window Transactions

Floating-Rate Note Window. The FHLBanks may offer non-callable and callable floating-rate notes (currently limited to SOFR-linked floating-rate notes) through an electronic application referred to as the floating-rate note window, which is available to approved dealers. SOFR-linked floating-rate notes offered through the floating-rate note window are typically available with two business days settlement (although other settlements are possible). SOFR-linked floating-rate notes generally have a maturity of three months or longer and are generally issued and mature at face value. SOFR-linked floating-rate notes may be callable in whole or in part at face value. Rates and maturity categories for the floating-rate note window are typically set in the morning and announced on the Office of Finance's public website, over a nationally recognized financial news service, or through an electronic communication medium. The Office of Finance commits to issue SOFR-linked floating-rate notes on behalf of the requesting FHLBanks after dealers submit orders for the specific SOFR-linked floating-rate notes offered for sale. The FHLBanks receive funding based on the time of their request, the rate requested for issuance, the trade date,

the settlement date, and the maturity date. However, an FHLBank may receive less than its requested funding (or may not receive any funding) because of investor demand or competing requests from other FHLBanks for the same funding. In addition, dealers may contact the Office of Finance through reverse inquiry if there is a SOFR-linked floating-rate note structure they need to meet investor demand.

Deposits

The FHLBanks offer demand and overnight deposit programs to members and qualifying non-members. In addition, certain FHLBanks offer short-term interest-bearing deposit programs to members, and in certain cases, qualifying non-members. The FHLBank Act and FHFA regulations allow each FHLBank to accept deposits from:

- its members;
- any institution for which it is providing correspondent services;
- other FHLBanks; and
- other U.S. government instrumentalities.

Deposit programs, although not as significant as other funding sources, provide some of the funding resources for the FHLBanks including funding for advances, mortgage loans, and investments. At the same time, they offer members a low-risk earning asset that satisfies their regulatory liquidity requirements. Deposits were \$14.3 billion and \$15.3 billion, each representing 2% of the FHLBanks' total liabilities, at December 31, 2021 and 2020.

Capital, Capital Rules, and Dividends

Capital Structure

Each FHLBank is permitted to issue one or two classes of capital stock, each with sub-classes. Class A capital stock (Class A stock) is redeemable on six-months written notice from a member and Class B capital stock (Class B stock) is redeemable on five-years written notice from a member. If a member withdraws its membership in an FHLBank, or otherwise has had its membership terminated, it may not acquire shares of any FHLBank for five years after the date on which its divestiture of capital stock is completed. This restriction does not apply if the member is transferring its membership from one FHLBank to another FHLBank on an uninterrupted basis. The FHFA's regulation that implements a capital structure for the FHLBanks also establishes risk-based and leverage capital requirements for the FHLBanks. (See [Note 11 - Capital](#) to the accompanying combined financial statements.)

Capital Adequacy

Each FHLBank is required to ensure that it operates in a safe and sound manner, with sufficient permanent capital and reserves to manage risks that arise in the operations and management of that FHLBank. Each FHLBank is subject to these three regulatory capital requirements: risk-based capital, total regulatory capital, and leverage capital. The FHFA may require an FHLBank to maintain greater minimum capital levels than are required based on FHFA rules and regulations. Each FHLBank was in compliance with FHFA regulatory capital requirements at December 31, 2021.

Risk-Based Capital. Permanent capital for each FHLBank is defined as the amount paid-in for Class B stock, plus the amount of an FHLBank's retained earnings, as determined in accordance with GAAP. Mandatorily redeemable capital stock is considered capital for regulatory purposes. Each FHLBank must maintain at all times permanent capital in an amount at least equal to the sum of its credit risk, market risk, and operational risk capital requirements, all of which are calculated in accordance with the rules and regulations of the FHFA.

Credit Risk. Each FHLBank's credit risk capital must at all times equal the sum of its credit risk capital charges for all assets, off-balance sheet items, and derivative contracts. These computations are based on, among other requirements, the credit risk percentages assigned to each item as required by the FHFA.

Market Risk. Each FHLBank's market risk capital must at all times equal the market value of its portfolio at risk from market movements, primarily interest rates, that could occur during times of market stress. Each FHLBank must calculate the market value of its portfolio at risk by using either an internal market risk model or an internal cash flow model approved by the FHFA. Although each FHLBank models its own market risk, the FHFA has reviewed and approved the modeling approach and underlying assumptions used by each FHLBank and reviews these modeling approaches on an ongoing basis.

Operational Risk. Each FHLBank's operational risk capital must at all times equal 30% of the sum of its credit risk and market risk capital requirements. The FHFA can approve a reduction in this percentage if an FHLBank meets alternative requirements.

Total Regulatory Capital. Each FHLBank must maintain at all times a total regulatory capital-to-assets ratio of at least four percent. Capital for regulatory capital adequacy purposes is defined as the sum of each FHLBank's:

- permanent capital;
- amounts paid-in for Class A stock;
- general loss allowance, if consistent with GAAP and not established for specific assets; and
- other amounts from sources determined by the FHFA as available to absorb losses.

Leverage Capital. Each FHLBank must maintain at all times a leverage capital-to-assets ratio of at least five percent. Leverage capital is defined as the sum of permanent capital weighted 1.5 times and all other components of total capital.

Summary of Individual FHLBank's Capital Plan Structure

Single Class of Class B Stock. Each of the FHLBanks of Boston, Cincinnati, and San Francisco offers a single class of Class B stock. Each of these FHLBanks requires its members to maintain a membership and/or activity-based stock balance based on the terms of the respective FHLBank's capital plan.

Sub-Classes of Class B Stock. Each of the FHLBanks of New York, Pittsburgh, Indianapolis, Chicago, Des Moines, and Dallas offers two sub-classes of Class B stock, which represent either membership or activity-based stock requirements based on the terms of the respective FHLBank's capital plan. The two sub-classes of Class B stockholders may or may not have the same voting rights and dividend rates, which are based on the terms of the respective FHLBank's capital plan.

The FHLBank of Atlanta offers three sub-classes of Class B stock, which represent either membership or advances activity-based stock requirement or standby letters of credit activity-based stock requirement based on the terms of the FHLBank of Atlanta's capital plan. The three sub-classes of Class B stockholders may or may not have the same voting rights and dividend rates for each class of stock, which are based on the terms of the FHLBank of Atlanta's capital plan.

Class A and Class B Stock. The FHLBank of Topeka offers a single series of Class A stock and a single series of Class B stock. Usage of Class A stock and Class B stock to meet membership and activity-based requirements, as well as dividend rates and voting rights for each class of stock, are determined based on the terms of the FHLBank of Topeka's capital plan.

Capital Classification Determination

In accordance with the Housing and Economic Recovery Act of 2008, as amended (Housing Act), the FHFA defines four capital classifications for the FHLBanks: adequately capitalized, undercapitalized, significantly undercapitalized, and critically undercapitalized. It also defines the prompt corrective action provisions that apply to an FHLBank that is deemed to be not adequately capitalized. The FHFA determines each FHLBank's capital classification on at least a quarterly basis. If an FHLBank is determined to be other than adequately capitalized,

that FHLBank becomes subject to additional supervisory authority by the FHFA. Before implementing a reclassification, the Director of the FHFA is required to provide that FHLBank with written notice of the proposed action and an opportunity to submit a response. Each FHLBank is classified by the FHFA as adequately capitalized as of the date of the FHFA's most recent notification to each FHLBank.

Mandatorily Redeemable Capital Stock

An FHLBank generally reclassifies capital stock subject to redemption from capital to a mandatorily redeemable capital stock liability upon expiration of a grace period, if applicable, after a member exercises a written redemption right, or gives notice of intent to withdraw from membership, or attains non-member status by merger or acquisition, relocation, charter termination, or involuntary termination of membership. Shares of capital stock meeting these definitions are reclassified to mandatorily redeemable capital stock at fair value. The fair value of capital stock subject to mandatory redemption is generally equal to its par value as indicated by contemporaneous member purchases and sales at par value. Fair value also includes an estimated dividend earned at the time of reclassification from capital to a liability, until such amount is paid, and any subsequently declared dividend. Dividends related to capital stock classified as mandatorily redeemable capital stock are accrued at the expected dividend rate and reported as interest expense on the Combined Statement of Income.

Statutory and Regulatory Restrictions on Capital Stock Redemptions and Repurchases

Each class of FHLBank stock is considered putable by the member, and an FHLBank may repurchase, at its sole discretion, any member's stock investments that exceed the required minimum amount. However, there are significant statutory and regulatory restrictions on the obligation to redeem, or right to repurchase, the outstanding stock. As a result, whether or not a member may have its capital stock in an FHLBank repurchased (at an FHLBank's discretion at any time before the end of the redemption period) or redeemed (at a member's request, completed at the end of a redemption period) will depend on whether the applicable FHLBank is in compliance with the following restrictions.

- An FHLBank may not redeem or repurchase any capital stock if, following such redemption or repurchase, the FHLBank would fail to satisfy any of its minimum capital requirements. No FHLBank stock may be redeemed or repurchased if the FHLBank becomes undercapitalized.
- An FHLBank may not redeem or repurchase any capital stock without approval of the FHFA if either its board of directors or the FHFA determines that it has incurred, or is likely to incur, losses resulting, or expected to result, in a charge against capital while such charges are continuing or expected to continue.
- An FHLBank's board of directors can suspend redemptions of stock if it determines that redemptions would result in the FHLBank failing to maintain adequate capital considering risks faced by the FHLBank or would otherwise prevent the FHLBank from operating in a safe and sound manner.

These restrictions apply even if an FHLBank is in compliance with its minimum capital requirements. As a result, repurchases or redemptions of a member's capital stock in an FHLBank may only happen when the FHLBank is in compliance with its three regulatory capital requirements (risk-based capital, total regulatory capital, and leverage capital). In addition, an individual FHLBank may, at its discretion, institute a higher capital requirement to meet internally-established thresholds or to address supervisory matters, limit dividend payments, or restrict excess capital stock repurchases as part of its retained earnings policies.

Additionally, an FHLBank may not redeem or repurchase shares of capital stock from any of its members if:

- the principal or interest due on any consolidated obligation has not been paid in full when due;
- the FHLBank fails to certify in writing to the FHFA that it will remain in compliance with its liquidity requirements and will remain capable of making full and timely payment of all of its current obligations;

- the FHLBank notifies the FHFA that it cannot provide the foregoing certification, projects it will fail to comply with statutory or regulatory liquidity requirements, or will be unable to timely and fully meet all of its obligations; or
- the FHLBank actually fails to comply with statutory or regulatory liquidity requirements, or to timely and fully meet all of its current obligations, or enters or negotiates to enter into an agreement with one or more FHLBanks to obtain financial assistance to meet its current obligations.

If an FHLBank is liquidated, after payment in full to the FHLBank's creditors, the FHLBank's stockholders will be entitled to receive the par value of their capital stock to the extent sufficient funds remain. The rights of the Class A stockholders and the Class B stockholders in connection with a liquidation, merger, or other consolidation with another FHLBank shall be determined in accordance with the capital plan of the affected FHLBank, subject to any terms and conditions imposed by the FHFA.

In addition to possessing the authority to suspend stock redemptions, in certain situations, an FHLBank's board of directors has the right to call for the FHLBank's members, as a condition of membership, to make additional capital stock purchases as needed to satisfy statutory and regulatory capital requirements.

Each FHLBank's board of directors has a statutory obligation to review and adjust member capital stock requirements in order to comply with the FHLBank's minimum capital requirements, and each member must comply promptly with any such requirement. However, in certain scenarios, a member could reduce its outstanding business with an FHLBank as an alternative to purchasing stock.

If, during the period between receipt of a stock redemption notification from a member and the actual redemption (which may last indefinitely if an FHLBank is undercapitalized), an FHLBank is either liquidated or forced to merge with another FHLBank, the redemption value of the stock will be established after the settlement of all senior claims. Generally, no claims would be subordinated to the rights of FHLBank stockholders.

Dividends and Retained Earnings

According to FHFA regulations and the terms of the Joint Capital Enhancement Agreement, as amended (Capital Agreement), an FHLBank's board of directors may declare and pay dividends, in either cash or capital stock, from unrestricted retained earnings. An FHLBank is prohibited from paying a dividend if it has failed to meet any capital requirements or would fail to meet any such requirements after paying the dividend. FHFA regulations also limit the ability of an FHLBank to create excess capital stock under certain circumstances. Excess capital stock is defined as the amount of stock held by a member (or former member) in excess of that institution's minimum stock ownership requirement. An FHLBank may not pay dividends in the form of capital stock or issue new excess capital stock to members if that FHLBank's excess capital stock exceeds one percent of its total assets, or if the issuance of excess capital stock would cause that FHLBank's excess capital stock to exceed one percent of its total assets.

The Capital Agreement is intended to enhance the capital position of each FHLBank. The Capital Agreement provides that each FHLBank will, on a quarterly basis, allocate 20% of its net income to a separate restricted retained earnings account until the balance of that account, calculated as of the last day of each calendar quarter, equals at least one percent of that FHLBank's average balance of outstanding consolidated obligations for the calendar quarter. These restricted retained earnings are not available to pay dividends. Additionally, the Capital Agreement provides that amounts in restricted retained earnings in excess of 150% of an FHLBank's restricted retained earnings minimum (i.e., one percent of that FHLBank's average balance of outstanding consolidated obligations calculated as of the last day of each calendar quarter) may be released from restricted retained earnings. (See [Note 11 - Capital - Restricted Retained Earnings](#) to the accompanying combined financial statements.)

Use of Derivatives

The use of derivatives is an integral part of each FHLBank's financial and risk management strategy to reduce identified risks inherent in its lending, investing, and funding activities. The FHLBanks are exposed to interest-rate risk primarily from the effect of interest rate changes on their interest-earning assets and their interest-bearing liabilities that finance these assets. To mitigate the risk of loss, each FHLBank has established policies and procedures, which include guidelines on the amount of exposure to interest rate changes it is willing to accept. In addition, each FHLBank monitors the risk to its interest income, net interest margin, and average maturity of interest-earning assets and interest-bearing liabilities. FHFA regulation and each FHLBank's risk management policy prohibit the speculative use of derivative instruments and limit credit risk arising from these instruments. The FHLBanks primarily use the following derivative instruments: interest-rate swaps, options, swaptions, interest-rate cap and floor agreements, and futures and forward contracts. The most common ways in which an FHLBank uses derivatives are to:

- reduce the interest-rate sensitivity and repricing gaps of assets and liabilities;
- preserve a favorable interest-rate spread between the yield of an asset (e.g., an advance) and the cost of the related liability (e.g., the consolidated obligation used to fund the advance);
- mitigate the adverse earnings effects of the shortening or extension of certain assets (e.g., advances or mortgage assets) and liabilities;
- manage embedded options in assets and liabilities;
- reduce funding costs by combining a derivative with a consolidated obligation because the cost of a combined funding structure can be lower than the cost of a comparable consolidated obligation; and
- protect the value of existing asset or liability positions or of anticipated transactions.

Each FHLBank transacts most of its derivatives with large banks and major broker-dealers. Some of these banks and broker-dealers, or their affiliates, buy, sell, and distribute consolidated obligations. An FHLBank may enter into derivative transactions concurrently with the issuance of consolidated obligations. This strategy of issuing consolidated obligations while simultaneously entering into derivatives enables an FHLBank to offer a wider range of attractively-priced advances to its members and may allow an FHLBank to reduce its funding costs and manage its interest-rate risk. The continued attractiveness of this strategy depends on the yield relationship between an FHLBank's consolidated obligations and the derivatives market. If conditions change, an FHLBank may alter the types or terms of the consolidated obligations that it issues. (See [Note 7 - Derivatives and Hedging Activities](#) to the accompanying combined financial statements, [Financial Discussion and Analysis - Risk Management - Credit Risk - Derivative Counterparties](#) for information on credit exposure on derivatives, and [Quantitative and Qualitative Disclosures about Market Risk - Use of Derivatives to Manage Interest-Rate Risk](#) for information on the use of derivatives to manage interest-rate risk.)

Regulatory Oversight, Audits, and Examinations

The business of each of the FHLBanks and the Office of Finance is subject to extensive regulation and supervision. The laws and regulations to which the FHLBanks and the Office of Finance are subject cover all key aspects of their business, and directly and indirectly affect the FHLBanks' product and service offerings, pricing, competitive position and strategic plan, relationship with members and third parties, capital structure, cash needs and uses, and information security. As discussed throughout this Combined Financial Report, these laws and regulations have a significant effect on key drivers of the FHLBanks' financial condition and results of operations, including, for example, their capital and liquidity, product and service offerings, risk management, and costs of compliance. (See [Financial Discussion and Analysis - Legislative and Regulatory Developments](#) and [Risk Factors - Business Risk - Legislative and Regulatory](#) for more information.)

FHLBanks' Regulator

The FHFA, an independent agency in the executive branch of the U.S. government, supervises and regulates the FHLBanks and the Office of Finance. The FHFA has regulatory authority over FHLBank matters such as: board of director composition, executive compensation, risk-based capital standards and prompt corrective action enforcement provisions, membership eligibility, and low-income housing goals. The FHFA's mission, with respect to the FHLBanks, is to ensure the FHLBanks fulfill their mission by operating in a safe and sound manner to serve as a reliable source of liquidity and funding for the housing finance market throughout the economic cycle. (See [Note 11 - Capital](#) to the accompanying combined financial statements and [Financial Discussion and Analysis - Legislative and Regulatory Developments](#) for more information on the FHFA's current and proposed regulatory requirements.)

To carry out those responsibilities, the FHFA conducts annual on-site examinations, interim on-site visits, and off-site analyses of each of the FHLBanks and the Office of Finance, as well as requires each of the FHLBanks to submit monthly financial information on its financial condition and results of operations. In 2021, both of the annual examinations and interim visits by the FHFA were generally conducted remotely due to the COVID-19 pandemic. The FHFA is required to present the findings of the agency's annual examinations of the FHLBanks and the Office of Finance to the U.S. Congress.

The FHFA is headed by a Director appointed by the President of the United States, by and with the advice and consent of the U.S. Senate, to serve a five-year term. The Director of the FHFA must have a demonstrated understanding of financial management or oversight, and have a demonstrated understanding of capital markets, including the mortgage securities markets and housing finance.

The Federal Housing Finance Oversight Board advises the Director of the FHFA about overall strategies and policies for executing the duties of the Director of the FHFA. The Federal Housing Finance Oversight Board is comprised of four board members: the Secretary of the Treasury, the Secretary of HUD, the Chair of the SEC, and the Director of the FHFA, who serves as the chairperson of the board. The FHFA is financed by assessments from the entities it regulates, including the FHLBanks. No tax dollars or other government appropriations are directed to support the operations of the FHFA or the FHLBanks.

The principal duties of the Director of the FHFA, with respect to the FHLBanks, are the following:

- to oversee the prudential operations of the FHLBanks;
- to ensure that each FHLBank operates in a safe and sound manner, including maintenance of adequate capital and internal controls;
- to ensure that the operations and activities of each FHLBank foster liquid, efficient, competitive, and resilient national housing finance markets (including activities relating to mortgages on housing for low- and moderate-income families involving a reasonable economic return that may be less than the return earned on other activities);
- to ensure that each FHLBank complies with the applicable rules, regulations, guidelines, and orders;
- to ensure that each FHLBank carries out its statutory mission; and
- to ensure that the activities of each FHLBank and the manner in which each FHLBank is operated are consistent with the public interest.

The FHFA is located at 400 7th Street, SW, Washington, D.C. 20219, and its web site is fhfa.gov. This web site is provided as a matter of convenience only, and its contents are not made part of or incorporated by reference into this report.

Government Corporation Control Act

The Government Corporation Control Act provides that, before a government corporation issues and offers obligations to the public, the Secretary of the Treasury shall prescribe the form, denomination, maturity, interest rate, and conditions to which the obligations will be subject; the method and time issued; and the selling price. The FHLBanks meet the definition of government corporations under the Government Corporation Control Act.

Each of the FHLBanks and the Office of Finance has an internal audit department and an audit committee of its board of directors. An independent registered public accounting firm audits the annual financial statements of each FHLBank and the annual combined financial statements of the FHLBanks prepared by the Office of Finance. The accounting firm conducts the audit of each FHLBank in accordance with the standards of the Public Company Accounting Oversight Board and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. The accounting firm conducts the audit of the annual combined financial statements in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States.

Each FHLBank is required to submit an annual management report to the U.S. Congress, which includes its financial statements, the report of its independent accounting firm on its financial statements, a statement on its internal accounting and administrative control systems, and other comments and information necessary to inform the U.S. Congress about its operations and financial condition. In addition, each FHLBank is required to provide a copy of that report to the President of the United States, the Director of the Office of Management and Budget, and the Comptroller General of the United States.

The Government Corporation Control Act provides that the Comptroller General of the United States may review any audit of the financial statements of an FHLBank conducted by an independent registered public accounting firm and shall report to the U.S. Congress, the Director of the Office of Management and Budget, and the FHLBank under review regarding the results of the review and make any recommendation the Comptroller General of the United States considers appropriate. The Comptroller General of the United States may also audit the financial statements of an FHLBank at the discretion of the Comptroller General or at the request of a committee of the U.S. Congress.

Other Mission-Related Activities

In addition to supporting residential mortgage lending, one of the FHLBanks' core missions is to support community development through affordable housing and community investment. A number of programs administered by the FHLBanks are targeted to fulfill that mission. These programs have provided affordable homeownership and rental opportunities for hundreds of thousands of very low- and low- or moderate-income families and have provided community lending, which is intended to strengthen communities across the United States and its territories.

Community Investment Cash Advance Programs

The FHLBanks offer funding to members, often at below-market interest rates and for long terms, through Community Investment Cash Advance programs. Under these programs, in general, each FHLBank:

- shall offer an Affordable Housing Program;
- shall offer a Community Investment Program;
- may offer a Rural Development Funding Program;
- may offer an Urban Development Funding Program; and
- may offer other programs that have been approved by the FHFA for targeted community lending.

Community Investment Cash Advance programs provide financing for projects that target affordable housing and certain economic development activities, including commercial, industrial, manufacturing, social service, infrastructure, and public facility projects and activities. Lending under the economic development programs target specific beneficiaries, which are determined by the geographical area in which a project is located, by the individuals who benefit from a project as employees or service recipients, or by projects that qualify as small businesses. Members may use the proceeds of Community Investment Cash Advance funding to finance targeted economic development projects through loan originations and participations, by lending to other lenders for eligible purposes, or by purchasing eligible mortgage-backed securities, mortgage revenue bonds, and low-income housing tax credits. Approved housing associates may also use certain Community Investment Cash Advance programs.

Affordable Housing Program (AHP). An AHP subsidizes the cost of owner-occupied housing provided that the household's income does not exceed 80% of the area median income; and in the case of rental housing, at least 20% of the units should be occupied by, and affordable for, households whose income does not exceed 50% of the area median income. The subsidy may be in the form of a grant or an advance with a reduced interest rate. Competitively approved AHP funds are awarded through a general fund and any targeted funds established at each of the FHLBanks. The general fund is a program that each FHLBank is required to establish. The targeted fund is a program that an FHLBank may establish, at its discretion, to address specific affordable housing needs in its district that are unmet, are difficult to address through its general fund, or align with objectives identified in its strategic plan. The FHLBanks approve applications for an AHP subsidy through a competitive application process, whereby members submit applications on behalf of one or more sponsors of eligible housing projects. Proposed AHP projects must meet certain eligibility requirements and are approved based on scoring guidelines established by each FHLBank, pursuant to the AHP regulations, in order to obtain funding.

AHP funds are also awarded through a homeownership set-aside program on a first-come, first-served basis. Under this type of program, an FHLBank may set aside annually up to the greater of \$4.5 million or 35% of its annual required AHP funds to assist eligible households to purchase homes, provided that at least one-third of the FHLBank's set-aside funds are allocated to assist first-time home buyers or households for owner-occupied rehabilitation. Members obtain AHP homeownership set-aside funds from an FHLBank and then use those funds as grants to eligible households. Set-aside funds may be used for down payment, closing costs, counseling, or rehabilitation assistance in connection with a household's purchase or rehabilitation of an owner-occupied unit. Each FHLBank sets its own maximum grant amount, which may not exceed \$22,000 per household, subject to annual adjustment based on increases in the FHFA's House Price Index. All of the FHLBanks have AHP homeownership set-aside programs.

If an FHLBank fails to use or commit the full amount it is required to contribute to an AHP in any year, then 90% of the unused or uncommitted amount shall be deposited by the FHLBank in an Affordable Housing Reserve Fund established and administered by the FHFA. The remaining 10% of the unused and uncommitted amount retained by that FHLBank should be fully used or committed by that FHLBank during the following year, and any remaining portion must be deposited in the Affordable Housing Reserve Fund. As of December 31, 2021, no FHLBank has ever deposited funds in an Affordable Housing Reserve Fund. AHP advances outstanding were \$167 million and \$161 million at December 31, 2021 and 2020.

For the year ended December 31, 2021, the FHLBanks contributed \$201 million to the AHP and disbursed \$352 million through the AHP. (See [Note 10 - Affordable Housing Program](#) to the accompanying combined financial statements.)

Community Investment Program. The Community Investment Program for housing is a lending program that allows members to borrow at a discounted rate of interest, or to obtain letters of credit, from an FHLBank. An advance under the Community Investment Program for housing is offered to a member at no higher than an FHLBank's cost of funds plus reasonable administrative costs. An FHLBank may, at its discretion, require the

member to pass on any discount in the interest rate on these advances to its own borrowers. Members use the Community Investment Program for housing advances to provide financing of owner-occupied and rental housing for households whose income does not exceed 115% of the area median income. The FHLBanks had \$9.0 billion and \$10.4 billion of Community Investment Program housing advances outstanding at December 31, 2021 and 2020.

In addition to housing, this program can be used for commercial and economic development activities that benefit households with incomes at 80% or less of the area median income and in neighborhoods where at least 51% of households' income does not exceed 80% of the area median income. The FHLBanks had \$205 million and \$220 million of Community Investment Program commercial and economic development advances outstanding at December 31, 2021 and 2020.

For the year ended December 31, 2021, the FHLBanks funded \$1.6 billion in Community Investment Program advances, including housing advances and economic development advances.

Rural Development Funding Program. The Rural Development Funding Program provides advances or grants for targeted community lending, defined as providing financing for economic development projects for targeted beneficiaries, in rural areas, with the targeted beneficiaries having incomes at or below 115% of the area median income.

Urban Development Funding Program. The Urban Development Funding Program provides advances or grants for targeted community lending in urban areas for targeted beneficiaries with incomes at or below 100% of the area median income.

Community Investment Cash Advance Program. Some FHLBanks have other voluntary community lending programs designed to retain or create jobs, or to otherwise improve the economic status of communities. Each FHLBank has a Targeted Community Lending Plan that describes its program objectives for economic development. For the year ended December 31, 2021, the FHLBanks funded \$1.0 billion in Community Investment Cash Advance economic development advances.

Community Support Program

To retain access to long-term advances from an FHLBank, each member that is subject to community support review is required to meet standards of community support activities, which it documents by submitting a Community Support Statement to the FHFA every two years. These standards take into account each member's performance under the Community Reinvestment Act of 1977, as amended, and the member's record of lending to first-time home buyers.

Letters of Credit

An FHLBank's credit services also include letters of credit issued or confirmed on behalf of members to facilitate business transactions with third parties that support residential housing finance, community lending, or asset/liability management or to provide liquidity to members. Letters of credit are also issued on behalf of members to secure the deposits of public entities that are held by such members. All letters of credit are required to be fully collateralized.

COVID-19 Relief Programs

During 2021 and 2020, in response to the COVID-19 pandemic, certain FHLBanks offered temporary relief programs providing subsidized advances, at very low or zero interest rates, or grants to their members. There were \$3.6 billion and \$4.9 billion of these advances outstanding at December 31, 2021 and 2020.

Competition

Advances

The demand for FHLBank advances is affected by, among other things, the availability and cost of other sources of liquidity available to FHLBank members, including deposits. Each FHLBank individually competes with its members' depositors as well as suppliers of secured and unsecured wholesale funding. These competitors may include investment banks, commercial banks, Federal Reserve Banks, and, in certain circumstances, one or more other FHLBanks when affiliates of their members are members of other FHLBanks. Both small and large FHLBank members typically have access to brokered deposits and repurchase agreements, each of which presents a competitive alternative to advances. Larger members also have greater access to other competitive sources of funding and asset and liability management facilitated by the domestic and global credit markets. These sources may include debt issued in the capital markets, interbank loans, interest-rate swaps, options, bank notes, and commercial paper. In addition, the FHLBanks' competitive environment may be affected by various legislative and regulatory initiatives.

The availability of alternative funding sources to members can significantly influence the demand for FHLBank advances. This availability can vary as a result of a variety of factors, including:

- market conditions;
- products and structures available in the marketplace;
- member creditworthiness;
- availability of collateral; and
- new government programs and regulations or changes to existing ones.

Mortgage Loans

The FHLBanks' mortgage loan programs are subject to significant competition in purchasing conventional fixed-rate mortgage and government-guaranteed or -insured loans. The FHLBanks face competition in customer service, the prices paid for these assets, and ancillary services, such as automated underwriting. The most direct competition for mortgages comes from other housing GSEs that also purchase conventional fixed-rate mortgage loans, specifically Fannie Mae and Freddie Mac, which are the dominant purchasers of residential fixed-rate conventional mortgages. The FHLBanks primarily compete on the basis of transaction structure, price, products, and services offered.

Consolidated Obligations

The FHLBanks compete primarily with the U.S. Treasury, Fannie Mae, Freddie Mac, and other GSEs, as well as corporate, state and local, sovereign, sub-sovereign, and supranational entities, for funds raised through the issuance of unsecured debt, known as consolidated obligations in the case of the FHLBanks, in the domestic and global debt markets. If the supply of competing debt products increases without a corresponding increase in demand, or if certain investors change their view of investing in consolidated obligations, debt costs may rise, or less debt may be issued at the same cost. In addition, certain regulatory initiatives may adversely affect the availability and cost of funds raised through the issuance of certain types of consolidated obligations.

The issuance of callable debt and the simultaneous execution of callable derivative transactions that mirror the debt issued has been an important source of competitive funding for the FHLBanks. As such, the availability of markets for callable debt and derivative transactions may be an important factor in determining the FHLBanks' relative cost of funds. There is considerable competition in the markets for callable debt and for derivative transactions with high credit quality entities. Investors should not expect that these markets will necessarily be available in the future based on their availability to date.

For more information on competition related to advances, mortgage loans, and debt issuance, see [Risk Factors - Business Risk - Legislative and Regulatory](#) and [Risk Factors - Business Risk - Strategic](#).

Tax Status and Assessments

The FHLBanks are exempt from all corporate federal, state, and local taxation, except for local real estate taxes and certain employer payroll taxes. However, by regulation, each FHLBank is required to contribute to its Affordable Housing Program the greater of 10% of its annual income subject to assessment, or the prorated sum required to ensure the aggregate contribution by the FHLBanks is no less than \$100 million for each year. Required Affordable Housing Program assessments were \$201 million, \$315 million, and \$362 million for the years ended December 31, 2021, 2020, and 2019. In addition to the required Affordable Housing Program assessment, an FHLBank's board of directors may elect to make voluntary contributions to the Affordable Housing Program. (See [Note 10 - Affordable Housing Program](#) to the accompanying combined financial statements and [Financial Discussion and Analysis - Legislative and Regulatory Developments - Other Legislative Matter - Affordable Housing and Community Investment](#) for information about proposed legislation that may affect the FHLBanks' Affordable Housing Programs.)

Cash dividends received by FHLBank members from the FHLBanks are taxable to the members and do not benefit from the exclusion for corporate dividends received.

Office of Finance

The Office of Finance is a joint office of the FHLBanks whose primary functions are to:

- facilitate the issuance and servicing of all FHLBank consolidated obligations;
- prepare the quarterly and annual combined financial reports of the FHLBanks;
- function as the fiscal agent of the FHLBanks; and
- administer the Resolution Funding Corporation, a tax-exempt government corporation created during the savings and loan crisis of the 1980s.

In addition, the Office of Finance performs research and serves as a source of information for the FHLBanks on capital markets developments; manages relationships with the rating agencies and the U.S. Treasury as they relate to the consolidated obligations; and performs various debt marketing activities, including investor presentations and conferences.

Pursuant to FHFA regulations, the Office of Finance, in conjunction with the FHLBanks, has adopted policies and procedures for consolidated obligations. These policies and procedures relate to, among other things, the frequency and timing of consolidated obligations issuance, issue size, minimum denomination, selling concessions, approved dealer qualifications and selection, issuance currency, coupon features, call or put features, and principal amortization features. The Office of Finance has responsibility for facilitating and approving the issuance of consolidated obligations in accordance with these policies and procedures. In addition, the Office of Finance has the authority to redirect, limit, or prohibit the FHLBanks' requests to issue consolidated obligations if it determines that the proposed issuance is inconsistent with FHFA regulations or these policies or procedures. The FHFA requires consolidated obligations to be issued efficiently and at the lowest all-in funding costs over time, consistent with:

- prudent risk-management practices, prudential debt parameters, short- and long-term market conditions, and the FHLBanks' role as GSEs;
- maintaining reliable access to the short- and long-term capital markets; and
- positioning the issuance of debt to take advantage of current and future capital market opportunities.

Human Capital Resources

Human capital is a significant contributing factor to the success of the strategic business objectives of each of the FHLBanks and the Office of Finance. In managing its human capital, each of the FHLBanks and the Office of Finance focuses on its workforce profile and various programs and philosophies to help achieve its strategic business initiatives and enhance business performance.

Workforce Profile

The workforce of each of the FHLBanks and the Office of Finance is primarily comprised of full-time employees, with each entity's respective principal operations in one location. The workforce is generally leanly staffed, and historically has included a number of longer-tenured employees. Each of the FHLBanks and the Office of Finance strives to both develop talent from within the organization and supplement that talent with external hires. Each of the FHLBanks and the Office of Finance believes that developing talent internally results in institutional strength and continuity and promotes loyalty and commitment in its employee base, which furthers its success, while adding new employees contributes to new ideas, continuous improvement, and its goal of a diverse and inclusive workforce. There is no collective bargaining agreement with the employees of any of the FHLBanks or the Office of Finance. Certain of the FHLBanks and the Office of Finance experienced higher employee turnover or increased competition in hiring and retaining skilled key personnel in 2021, as the ongoing COVID-19 pandemic brought about significant disruptions and changes to the U.S. labor market.

Table 1 presents the workforce profile of each of the FHLBanks and the Office of Finance at December 31, 2021.

Table 1 - Human Capital

December 31, 2021								
FHLBank	Female(1)	Male(1)	Non-minority(1)	Minority(1)	Average tenure (in years)	Full-time	Part-time	Total
Boston	40%	60%	72%	28%	12.6	183	—	183
New York	41%	59%	43%	57%	9.8	340	—	340
Pittsburgh	43%	57%	77%	23%	10.3	218	3	221
Atlanta	46%	54%	52%	48%	11.6	305	3	308
Cincinnati	39%	61%	84%	16%	9.7	245	—	245
Indianapolis	39%	61%	75%	25%	8.2	237	2	239
Chicago	48%	52%	61%	39%	8.0	458	8	466
Des Moines	47%	53%	80%	18%	7.4	364	4	368
Dallas	41%	59%	46%	54%	9.0	196	1	197
Topeka	51%	49%	87%	13%	10.2	234	3	237
San Francisco	44%	56%	33%	66%	8.4	295	2	297
Office of Finance	42%	58%	29%	71%	8.2	126	5	131
Total	44%	56%	62%	38%	9.3	3,201	31	3,232

(1) The percentages of female, male, non-minority, and minority may exclude employees who declined to self-identify.

Total Rewards

Each of the FHLBanks and the Office of Finance seeks to attract, develop, and retain talented employees to achieve its strategic business initiatives and enhance business performance. Each of the FHLBanks and the Office of Finance supports this objective through a combination of development programs, benefits and employee wellness programs, and by recognizing and rewarding performance. These programs, which vary at each of the FHLBanks and the Office of Finance, may include:

- Cash compensation, primarily including competitive salaries and performance based incentives;

- Benefits, such as health insurance, life insurance, supplemental life insurance, retirement savings plans with employer match or profit sharing opportunities, pension benefits, or healthcare concierge;
- Wellness programs, such as fitness reimbursement, employee assistance programs, health coaching, interactive education sessions, or sporting events sponsorship;
- Time away from work, such as time off for vacation, illness, personal, holiday, or volunteer opportunities;
- Culture, such as employee resource groups, various cultural or inclusion initiatives;
- Work/life balance, such as long- and short-term disability; parental, military, bereavement, jury duty or court appearance leaves; or flexible scheduling, including a hybrid work schedule allowing a balance between in-office and remote work;
- Development programs and training, such as educational assistance programs, or internal and external educational and development opportunities; and
- Management succession planning, including active engagement by the boards of directors and senior management.

The performance management framework of each of the FHLBanks and the Office of Finance includes individual goal setting and an annual performance review. Overall annual ratings are typically calibrated and merit and incentive payments are differentiated based on individual performance.

Each of the FHLBanks and the Office of Finance is committed to the health, safety, and wellness of its employees. In response to the COVID-19 pandemic, each of the FHLBanks and the Office of Finance implemented significant operational changes, safety protocols, and procedures that it determined were in the best interest of its employees in compliance with governmental or regulatory guidance. This included arranging for all or a substantial majority of its employees to work remotely, with some critical employees working out of either its primary office or its business continuity facilities.

Diversity and Inclusion Program

Diversity and inclusion is a strategic business priority for each of the FHLBanks and the Office of Finance. The diversity and inclusion officer at each of the FHLBanks and the Office of Finance is a member of its senior management team and reports to the President/Chief Executive Officer. Each of the FHLBanks and the Office of Finance recognizes that diversity increases capacity for innovation and creativity and that inclusion brings together the unique perspectives of all employees and strengthens retention efforts. Each of the FHLBanks and the Office of Finance operationalizes its commitment through the development and execution of a diversity and inclusion strategic plan that includes quantifiable metrics to measure its success and it reports regularly on its performance to its management and boards of directors. Each of the FHLBanks and the Office of Finance offers a range of opportunities for its employees to connect and grow, personally and professionally, through various committees and resource groups. Each of the FHLBanks and the Office of Finance considers learning an important component of its diversity and inclusion strategy, and regularly offers educational opportunities to its employees. Certain of the FHLBanks and the Office of Finance also incorporate diversity and inclusion as a key component of its incentive plan framework to ensure organizational focus and accountability.

RISK FACTORS

The following discussion summarizes risks and uncertainties facing the FHLBank System as they potentially affect investors in consolidated obligations. There may be other risks and uncertainties, including those discussed elsewhere in this Combined Financial Report, that are not described here in these risk factors. If any of these risks or uncertainties is realized, it could negatively affect an FHLBank's, and possibly the entire FHLBank System's, financial condition, results of operations, reputation, strategies, or prospects. As a result, there could be a reduction in the value of FHLBank membership or an adverse effect on an FHLBank's, or the entire FHLBank System's, ability to pay its obligations when due. (See each FHLBank's 2021 SEC Form 10-K under *Part I. Item 1A - Risk Factors* for a discussion regarding its risk factors.)

Business Risk - General Economic Conditions

The COVID-19 pandemic and related developments created substantial economic and financial disruptions and uncertainties as well as significant operational challenges, which could increase many of the risks faced by the FHLBanks and adversely affect the FHLBanks' businesses, financial condition, and results of operations.

The COVID-19 pandemic, and governmental and public actions taken in response (such as shelter-in-place, stay-at-home or similar orders, travel restrictions, and business closures), created substantial uncertainty about the overall economic environment. In addition, the COVID-19 pandemic and related developments resulted in substantial disruptions in the financial markets, including dramatic increases in market volatility. Despite significant improvements in the overall U.S. economy since the initial effect of the COVID-19 pandemic, uncertainty remains on the pace of the recovery going forward, reflecting concerns about virus resurgence from variants, vaccine distribution and vaccination rates, inflation, and supply chain disruptions. There are no comparable recent events that provide guidance as to the long-term effect that the COVID-19 pandemic may have and, as a result, the ultimate effect of the pandemic, including the timing and shape of the economic recovery and any potential future economic downturn, is highly uncertain. This could increase many of the risks faced by the FHLBanks and adversely affect the businesses, financial condition, and results of operations of one or more FHLBanks and the FHLBanks on a combined basis.

A prolonged economic downturn, or periods of significant economic and financial disruptions and uncertainties resulting from the COVID-19 pandemic, may increase the possibility of under-collateralization due to decreases in the value of collateral securing the FHLBanks' advances, lead to decreases in the value of collateral securing mortgage loans held in their portfolios, or lead to member financial difficulties or member failures. This could, in turn, result in an increased risk of credit losses and counterparty defaults for the FHLBanks. The risk of credit losses may be exacerbated by a prolonged downturn in the residential and commercial real estate markets, including higher mortgage defaults or delinquencies and the effect of mortgage forbearance and other relief as well as financial difficulties or failures of mortgage servicers. Beginning in the second quarter of 2020, demand for advances decreased significantly as a number of emergency actions taken by the Federal Reserve helped facilitate liquidity and support stability in the fixed-income markets and as members experienced substantial deposit growth. While it is difficult to predict the future demand for advances and the circumstances of the individual FHLBanks vary, advances may remain at reduced levels or decline further if the level of liquidity in the financial markets and deposit levels at members remain elevated or if another economic downturn occurs.

The disruptions to interest rates, credit spreads, and the availability of funds in the fixed income market in connection with the COVID-19 pandemic adversely affected, and may adversely affect in the future, the FHLBanks' cost of funding or access to funding such as reduced demand for longer-term consolidated obligations, as well as the valuation of and the yields on the FHLBanks' assets. This, coupled with changes in FHLBank members' demand for advances, may result in challenges in the FHLBanks' ability to manage their assets and liabilities, including the pricing of advances and the mismatch of projected cash flows from assets and liabilities, and adversely affect the

FHLBanks' profitability and liquidity. In particular, the effects of the COVID-19 pandemic on the FHLBanks' cost of funding and the yields on the FHLBanks' assets, as well as the FHLBanks' needs to maintain sufficient liquidity in order to meet member demand, have contributed to, and may continue to cause, a negative effect on their net interest income.

In addition, the shelter-in-place, stay-at-home or similar orders, travel restrictions, and business shutdowns as a result of the COVID-19 pandemic led to substantial changes in business practices, such as the implementation of widespread work-from-home arrangements for the FHLBanks and the Office of Finance, as well as many FHLBank members, dealers, investors, and third-party service providers. These actions, together with the direct and indirect effect of COVID-19 infections (such as staffing disruptions), resulted in significant operational challenges, including increased risk of operational errors, disruptions and failures, and of cybersecurity breaches. While some of these actions have eased since the onset of the COVID-19 pandemic, operational challenges as a result of the COVID-19 pandemic are expected to continue, which could adversely affect the ability of the FHLBanks and the Office of Finance to conduct and manage their businesses.

The extent to which the COVID-19 pandemic continues to affect the FHLBanks' businesses, financial condition, and results of operations will depend on many factors that remain highly uncertain and difficult to predict, including, but not limited to: the duration, spread, and severity of the pandemic; additional fiscal or monetary policy, or other measures taken in response to the pandemic, or the expiration or reversal of prior measures; the actions taken to contain the pandemic, including the effectiveness of related vaccines and therapeutics; and how quickly and to what extent normal economic and operating conditions can resume.

A prolonged downturn in the economy, including the U.S. housing market, and related U.S. government monetary policies, could adversely affect the FHLBanks' business activities and results of operations.

The FHLBanks' businesses and results of operations are sensitive to the U.S. economy and the U.S. housing market. A prolonged period of slow growth in the U.S. economy, deterioration in general economic conditions, or a downturn in the housing markets could adversely affect FHLBanks' borrowers, particularly those whose businesses are concentrated in the mortgage industry. For example, if home prices decline or the unemployment rate increases, the value of collateral securing member credit to each FHLBank may decline, which could in turn increase the possibility of under-collateralization and the risk of loss if an FHLBank member defaults. Deterioration in the residential mortgage markets could also affect the value of collateral securing the FHLBanks' mortgage loan portfolios, increasing the risk of loss due to credit impairment, as well as possible realized losses if the FHLBanks are forced to liquidate their assets.

Unfavorable economic and market conditions can be caused by many factors. Volatility and uncertainty in global economic and political conditions can significantly affect U.S. economic conditions and financial markets. Negative trends in the global economy and political climate could influence, among other business activities, member borrowing activity and FHLBank investment patterns. Additionally, investors' negative perceptions of the state of the U.S. economy could lead to a decline in investor demand for consolidated obligations. Furthermore, natural disasters, pandemics or other widespread health emergencies (such as the COVID-19 pandemic), terrorist attacks, civil unrest, geopolitical instability or conflicts (including the recent outbreak of hostilities between Russia and Ukraine), trade disruptions, economic or other sanctions, or other unanticipated or catastrophic events could create economic and financial disruptions and uncertainties, which may lead to reduced demand for advances and an increased risk of credit losses for the FHLBanks and may adversely affect their cost of funding or access to funding. These events may also lead to operational difficulties that could adversely affect the ability of the FHLBanks and the Office of Finance to conduct and manage their businesses. Any of these factors could adversely affect the FHLBanks' business activities and results of operations.

In addition, the FHLBanks' businesses and results of operations are significantly affected by the monetary policies of the U.S. government and its agencies, including the Federal Reserve. The Federal Reserve Board's policies

directly and indirectly influence interest rates on the FHLBanks' assets and liabilities and could adversely affect the demand for advances and for consolidated obligations as well as the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis. In addition, the FHLBanks currently play a predominant role as lenders in the federal funds market; therefore, any disruption in the federal funds market or any related regulatory or policy change may adversely affect the FHLBanks' cash management activities, results of operations, and reputation.

Business Risk - Legislative and Regulatory

Changes in the legislative and regulatory environment could negatively affect the FHLBanks' business operations, their results of operations, and the value of FHLBank membership.

As GSEs, the FHLBanks are organized under the authority of the FHLBank Act and governed by U.S. federal laws and regulations as adopted and applied by the FHFA. Congress could amend the FHLBank Act or other statutes in ways that significantly affect the rights and obligations of the FHLBanks or the manner in which the FHLBanks carry out their mission and business operations. New or modified legislation enacted by Congress or changes in the statutory or regulatory requirements applied or imposed by the FHFA or other financial services regulators could result in, among other things: an increase in the FHLBanks' cost of funding and regulatory compliance; a change in membership or permissible business activities; additional capital and liquidity requirements; additional contributions under Affordable Housing Programs; reduced demand for advances or limitations on advances made to FHLBank members; or a change in the size, scope, or nature of the FHLBanks' lending, investment, or mortgage financing activities. These factors could negatively affect the FHLBanks' business operations, their results of operations, and the value of FHLBank membership.

Additionally, potential legislative and regulatory changes governing or affecting the FHLBanks' members, investors, and dealers of consolidated obligations could adversely affect the business activities, financial condition, and results of operations of an FHLBank and the FHLBanks on a combined basis.

See [Financial Discussion and Analysis - Legislative and Regulatory Developments](#) for more information about recent legislative and regulatory developments.

Changes in the perception, regulation, or status of the GSEs and the related effect on debt issuance could reduce demand for, or increase the cost of, the FHLBanks' debt and adversely affect the FHLBanks' financial condition and results of operations.

The FHLBanks are GSEs organized under the authority of the FHLBank Act and are authorized to issue debt securities to finance housing and community investments. Negative announcements by any of the housing GSEs, concerning topics such as accounting problems, risk-management issues, or regulatory enforcement actions, have historically created, and may in the future create, pressure on debt pricing for all GSEs, as investors perceive such instruments as bearing increased risk. Any such negative information or other factors could result in the FHLBanks having to pay a higher rate of interest on consolidated obligations to make them attractive to investors, which could negatively affect the FHLBanks' results of operations, and their access to funding.

Given the FHLBanks' shared status as GSEs, the scope, timing, and effect of any regulatory reform affecting the GSEs, including the ultimate resolution to the conservatorship of Fannie Mae and Freddie Mac and resulting changes in the regulation or status of the GSEs, could have a significant effect on the FHLBank System. While there are significant differences between the FHLBank System and Fannie Mae and Freddie Mac, including the FHLBanks' focus on secured lending in the form of advances as opposed to guaranteeing mortgages and their distinctive cooperative business model, legislation or other regulatory reform affecting the GSEs could inadequately account for these differences, which could negatively change the perception of the risks associated with the GSEs and their debt securities. This change in the perception of risk could adversely affect the FHLBanks' funding costs, access to

funding, competitive position, and the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

Changes to and replacement of the LIBOR benchmark interest rate could adversely affect the FHLBanks' businesses, financial condition, and results of operations.

Under the July 2017 and March 2021 announcements by the United Kingdom's Financial Conduct Authority, which regulates LIBOR, the one-week and two-month U.S. dollar LIBOR settings and all non-U.S. dollar LIBOR settings ceased to be provided by any administrator and were no longer representative as of January 1, 2022. The remaining U.S. dollar LIBOR settings will either cease to be provided by any administrator or no longer be representative immediately after June 30, 2023. Although the Financial Conduct Authority does not expect these remaining U.S. dollar LIBOR settings to become unrepresentative before the cessation date, there is no assurance that any of them will continue to be published or be representative through any particular date. Although the last of the FHLBanks' consolidated obligations indexed to LIBOR matured as of January 2022, many of the FHLBanks' assets and derivatives remain indexed to LIBOR, with exposure extending past December 31, 2021.

In assessing their exposure to LIBOR, the FHLBanks developed inventories of affected financial instruments and identified contracts that may require adding or adjusting fallback language, including advances, investment securities, consolidated bonds, and derivatives. The FHLBanks added or adjusted fallback language related to a majority of their advances to members and added or adjusted fallback language applicable to their consolidated bonds. The FHLBanks have also adhered to the ISDA 2020 Interbank Offered Rate Fallbacks Protocol and have worked with their counterparties, as necessary, to address their over-the-counter derivative agreements referencing U.S. dollar LIBOR as a part of their LIBOR transition efforts. The FHLBanks continue to monitor the market-wide efforts to address fallback language related to derivatives and investment securities, as well as fallback language for new activities and issuances of financial instruments. Despite relief under recent New York State legislation applicable to certain LIBOR-indexed instruments and federal legislation addressing LIBOR cessation, the discontinuation of LIBOR may have an unpredictable effect on certain existing LIBOR-indexed instruments. As LIBOR has been a principal floating-rate benchmark in the financial markets, its cessation has affected, and will continue to affect, the financial markets generally and may also affect the business, financial condition, and results of operations of an FHLBank or the FHLBanks on a combined basis.

In September 2019, the FHFA issued a supervisory letter (the Supervisory Letter) to the FHLBanks and the Office of Finance relating to their planning for the LIBOR phase-out. Pursuant to the Supervisory Letter, with limited exceptions, the FHLBanks stopped purchasing investments that reference LIBOR and mature after December 31, 2021, and ceased to enter into any other new financial assets, liabilities, and derivatives that reference LIBOR and mature after December 31, 2021. In carrying out their business activities in compliance with the Supervisory Letter, the FHLBanks may experience less flexibility in their access to funding, higher funding costs, increased basis risk, or lower overall demand or increased costs for their advances, which may negatively affect the composition of their balance sheets, capital stock levels, core mission asset ratios, and net income. In addition, as the FHLBanks generally are not permitted to continue to use instruments that reference LIBOR for hedging and risk-mitigating purposes, the FHLBanks had to alter their hedging strategies and interest-rate risk management. While the full effects of these adjustments remain to be seen, they may have a negative effect on the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

In the United States, the Federal Reserve Board and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee to identify a set of alternative reference interest rates for possible use as market benchmarks. This committee has proposed SOFR as its recommended alternative to U.S. dollar LIBOR, and the Federal Reserve Bank of New York began publishing SOFR rates in the second quarter of 2018. SOFR is based on a broad segment of the overnight Treasury repurchase market and is intended to be a measure of the cost of borrowing cash overnight collateralized by Treasury securities. Since 2018, market activity in SOFR-linked financial instruments has continued to develop and the FHLBanks have offered SOFR-linked consolidated obligations and

SOFR-linked advances on an ongoing basis. In addition, a SOFR-based derivatives market has emerged and certain FHLBanks use SOFR-based derivatives to manage interest-rate risk. However, the market transition away from LIBOR and towards SOFR or another alternative reference rate has been and is expected to continue to be complicated, including the development of term and credit adjustments to accommodate differences between LIBOR and SOFR or any other alternative reference rate as well as other market conventions. In addition, the overnight Treasury repurchase market underlying SOFR has experienced and may experience disruptions from time to time, which has resulted and may result in unexpected fluctuations in SOFR. The introduction of alternative reference rates also creates challenges in hedging and asset liability management and may result in additional basis risk and increased volatility for the FHLBanks and other market participants. While market activity in SOFR-linked financial instruments has continued to develop, the progress has been uneven and there can be no guarantee that SOFR will become widely accepted and used across market segments and financial products in a timely manner and any other alternative reference rate may or may not be developed. Generally, in the case of the FHLBanks, while there has been a strong investor demand for SOFR-linked consolidated obligations, a robust member demand for SOFR-linked advances has not fully developed. Among other factors, demand for SOFR-linked financial instruments will continue to depend upon market participants' preference for SOFR over any other alternative reference rate. Any disruption in the market transition towards SOFR or another alternative reference rate could result in increased financial, operational, legal, reputational, or compliance risks for an FHLBank or the FHLBanks on a combined basis. The FHLBanks are not able to predict what the effect of the continued transition to SOFR or another alternative reference rate will have on the business, financial condition, and results of operations of an FHLBank or the FHLBanks on a combined basis.

See [Financial Discussion and Analysis - Combined Financial Condition](#) and [Quantitative and Qualitative Disclosures about Market Risk](#) for more information regarding the FHLBanks' market activity in SOFR-linked financial instruments and the FHLBanks' LIBOR transition planning; including the FHLBanks' exposure to LIBOR-indexed financial assets, liabilities, and derivatives.

A failure to meet minimum regulatory capital requirements could affect the FHLBanks' ability to pay dividends or repurchase or redeem FHLBank members' capital stock, which may cause a decrease in members' demand for advances or difficulties in retaining existing members and attracting new members.

Each FHLBank is subject to minimum capital requirements under the FHLBank Act and FHFA rules and regulations, including total capital, leverage capital, and risk-based capital requirements. If an FHLBank were unable to satisfy its minimum capital requirements, that FHLBank would be subject to capital restoration requirements. Until the minimum capital levels have been restored, that FHLBank would also be prohibited from paying dividends and redeeming or repurchasing capital stock without the prior approval of the FHFA, which could adversely affect that FHLBank members' investment in FHLBank capital stock. Furthermore, to the extent that current and prospective members determine that FHLBank's dividend is insufficient or its ability to pay future dividends or repurchase excess capital stock becomes limited, the FHLBank may be unable to expand its membership and may experience decreased member demand for advances or increased member requests for withdrawals. These factors may cause a decline in the value of FHLBank membership and make it difficult to retain existing members or to attract new members.

In addition, any capital shortfall by an FHLBank could be perceived by investors as an increased level of risk or deterioration in the performance of that FHLBank, which could result in a downgrade in that FHLBank's outlook or its short- or long-term credit ratings. This, in turn, could negatively affect investors' perception of the FHLBank System and potentially increase the FHLBanks' cost of funding or otherwise negatively affect the FHLBanks' access to funding.

See [Note 11 - Capital](#) to the accompanying combined financial statements and [Business - Capital, Capital Rules, and Dividends](#) for additional information on the FHLBanks' capital requirements.

Business Risk - Strategic

Increased competition or reduced demand could adversely affect the FHLBanks' financial condition, results of operations, and primary business activity, which is to provide financial products and services to members and housing associates.

The FHLBanks' primary business is to provide their members and housing associates with financial products and services, including but not limited to, secured loans known as advances. Each FHLBank competes with other suppliers of wholesale funding, including, but not limited to, investment banks, commercial banks, the Federal Reserve, and, in certain circumstances, other FHLBanks. Changes to legislation or regulations affecting FHLBank members, or the availability of alternative funding sources to FHLBank members, could significantly decrease the demand for FHLBanks' advances, tighten net interest margin, and negatively affect the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

The FHLBanks may be required by new legislation or regulations or other factors to change policies, programs, and agreements affecting members' access to advances, mortgage purchase programs, Affordable Housing Programs, and other credit programs that could cause members to obtain financing from alternative sources. New or modified legislation or regulations could also create alternative funding sources for FHLBank members. Some competitors may not be subject to the regulations that apply to the FHLBanks, which may enable those competitors to offer products and terms that the FHLBanks are not able to offer. Additionally, some of the FHLBanks compete with Fannie Mae and Freddie Mac, as well as other FHLBanks, to purchase mortgage loans from members or affiliates of members. This competition may reduce the amount of available mortgage loans that FHLBanks can purchase, and could negatively affect the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

The FHLBanks also compete with the U.S. Treasury, Fannie Mae, Freddie Mac, and other GSEs, as well as corporate, state, local, sovereign, sub-sovereign, and supranational entities, for funds raised through the issuance of unsecured debt in the U.S. and global capital markets. Increases in the supply of competing debt products, such as an increase in the supply of Treasury securities, could negatively affect the demand for consolidated obligations and result in higher debt costs. Any of these factors could adversely affect the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis, as well as the value of FHLBank membership.

A loss or change of business activities with large members, consolidation of membership, or regulatory changes in membership rules could adversely affect the FHLBanks' financial condition and results of operations.

Due to the nature of the FHLBanks' charters, membership in an FHLBank is generally limited to federally-insured depository institutions, insurance companies, and community development financial institutions in its district. Given this limitation in membership eligibility, a loss of members or decreased business activities with large members due to withdrawal from membership, acquisition by a non-member, or failure could result in a reduction of an FHLBank's total assets, capital, and net income. Additionally, regulatory changes in FHLBank membership eligibility or requirements could affect the FHLBanks' business activities, as well as the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

Some FHLBanks have a high concentration of advances to and capital with large members, and certain large members have affiliates that are members of other FHLBanks. As the financial industry continues to consolidate into a smaller number of institutions, this could lead to further concentration of large members in some FHLBank districts and a related decrease in membership and significant loss of business for other FHLBanks. If advances are concentrated in a smaller number of members, an FHLBank's risk of loss resulting from a single event could become greater. Industry consolidation could also cause an FHLBank to lose members whose business and stock investments are so substantial that their loss could threaten the viability of that FHLBank. Moreover, as nonbank

financial institutions that are currently ineligible for FHLBank membership continue to play an increasing role in mortgage origination, the FHLBanks could experience a decrease in demand for advances or a decrease in volume of mortgage loans available for purchase from their members, which could negatively affect the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

See [Financial Discussion and Analysis - Combined Financial Condition - Advances](#) and [Financial Discussion and Analysis - Risk Management - Business Risk](#) for more discussion regarding the FHLBanks' exposure to member concentration risk.

Credit Risk

An increase in credit risk exposure from advances, mortgage loans, or other credit products or FHLBank member failures could adversely affect the FHLBanks' financial condition, results of operations, and reputation.

The FHLBanks are exposed to credit risk as part of their normal business operations through funding advances, purchasing mortgage loans, and extending other credit products, such as lines of credit, standby letters of credit, and other commitments.

The FHLBanks require advances and other extensions of credit to be fully secured with collateral and require borrowers to pledge additional collateral when deemed necessary. The FHLBanks evaluate the types of collateral pledged by the member and assign a borrowing capacity to the collateral, based on the risk associated with that type of collateral. If borrowers are unable to pledge additional collateral to fully secure their obligations with an FHLBank, whether due to significant financial stress, market volatility, or otherwise, it could cause that FHLBank's advance levels to decrease or credit risk to increase. If an FHLBank has insufficient collateral before or after an event of default or failure of the member or the FHLBank is unable to liquidate the collateral for the value assigned to it in the event of a default or failure of a member, that FHLBank could experience a credit loss. This, in turn, could adversely affect the financial condition, results of operations, and reputation of that FHLBank and the FHLBanks on a combined basis.

During economic downturns or periods of significant economic and financial disruptions and uncertainties, the number of FHLBank members exhibiting significant financial stress may increase, which may expose the FHLBanks to additional member credit risk. If an FHLBank's member defaults on its obligations or, in the case of a failed institution, the Federal Deposit Insurance Corporation (FDIC), or other receiver, fails to either promptly repay all of that failed institution's obligations or assume the outstanding advances, then that FHLBank may be required to liquidate the collateral pledged by the troubled or failed institution. If the proceeds realized from the liquidation of pledged collateral are not sufficient to fully satisfy the amount of the troubled or failed institution's obligations and the operational cost of liquidating the collateral, that FHLBank could incur losses. In addition, a default by a member with significant unsecured obligations to an FHLBank could result in significant losses, which would adversely affect the financial condition, results of operations, and reputation of that FHLBank and the FHLBanks on a combined basis.

The FHLBanks are also exposed to credit risk from their mortgage loans held in portfolios. While the FHLBanks' mortgage loan assets are collateralized by the underlying real estate and may also be credit-enhanced to further mitigate credit risk, natural disasters or a deterioration in economic conditions could result in declines in residential real estate values or increased levels of unemployment. These factors could lead to increased borrower defaults and cause the FHLBanks to incur credit losses on their mortgage loans.

See [Financial Discussion and Analysis - Risk Management - Credit Risk](#) for more discussion and analysis about the FHLBanks' exposure to credit risk and their management of this risk.

Defaults by one or more institutional counterparties on their obligations to the FHLBanks could adversely affect the financial condition and results of operations of one or more FHLBanks and the FHLBanks on a combined basis.

The FHLBanks face the risk that their institutional counterparties may fail to fulfill their contractual obligations. The primary exposures to institutional counterparty credit risk are with:

- unsecured money market transactions, including federal funds sold, or short-term investments with domestic and foreign counterparties;
- derivative counterparties, including Derivative Clearing Organizations and Futures Commission Merchants; and
- mortgage servicers that service loans purchased under the MPF Program, MPP, and MAP.

A counterparty default could result in losses if an FHLBank's credit exposure to that counterparty were unsecured or under-collateralized, or if an FHLBank's credit obligations associated with derivative positions were over-collateralized. The insolvency or other inability of a significant counterparty to perform its obligations under these transactions or other agreements could have an adverse effect on the financial condition and results of operations of one or more FHLBanks and the FHLBanks on a combined basis.

The FHLBanks have both direct and indirect exposure to foreign credit risk through their various counterparties. Adverse economic, political, or other trends that may occur within, across, or among various regions or countries could have direct adverse effects on an FHLBank's institutional counterparties and on the U.S. economy. In turn, the FHLBanks could also experience adverse effects on their ability to meet their obligations given their relationship with these counterparties.

In addition, the FHLBanks' ability to engage in routine derivatives, funding, and other transactions could be adversely affected by the actions and commercial soundness of other financial institutions. Financial services institutions are inter-related as a result of trading, clearing, counterparty, and other relationships. As a result, actual and potential defaults of one or more financial services institutions could lead to market-wide disruptions, making it difficult for the FHLBanks to find counterparties for transactions. (See [Financial Discussion and Analysis - Risk Management](#) - Credit Risk for more discussion and analysis about the FHLBanks' exposure to credit risk and their management of this risk.)

Financial difficulties at one FHLBank could require the other FHLBanks to make payment of principal and interest on the consolidated obligations issued on that FHLBank's behalf, which could adversely affect the FHLBanks' financial condition and results of operations.

Under the FHLBank Act and FHFA regulations, each FHLBank is jointly and severally liable with the other FHLBanks for the consolidated obligations issued by the FHLBanks through the Office of Finance. As such, while each FHLBank is primarily liable for its portion of consolidated obligations (i.e., those issued on its behalf), each FHLBank is also jointly and severally liable with the other FHLBanks for the payment of principal and interest on all consolidated obligations issued by the FHLBanks. Although it has never occurred, the FHFA, at its discretion, may require any FHLBank to make principal or interest payments due on any consolidated obligation whether or not the consolidated obligation represents a primary liability of that FHLBank. Additionally, if an FHLBank were to default on its obligation to pay principal or interest on any consolidated obligations, the FHFA may allocate the outstanding liabilities of that FHLBank among the remaining FHLBanks on a pro-rata basis or on any other basis determined by the FHFA. Accordingly, the FHLBanks could incur significant liability beyond their primary obligations due to the failure of an FHLBank to meet its obligations. This could adversely affect the financial condition and results of operations of one or more FHLBanks and the FHLBanks on a combined basis.

Market Risk

Changes in interest rates or an inability to successfully manage interest-rate risk could have a material adverse effect on the FHLBanks' net interest income.

The FHLBanks realize net interest income primarily from the spread between interest earned on their outstanding advances and investments less the interest paid on their consolidated obligations and other liabilities. The FHLBanks' businesses and results of operations are significantly affected by the monetary policies of the U.S. government and its agencies. Therefore, an FHLBank's ability to prepare for changes regarding the direction and speed of interest-rate changes or to use derivatives to hedge related exposures, such as basis risk arising from a shift in the relationship of interest rates in different financial markets or on different financial instruments, significantly affects the success of its asset and liability management activities and its level of net interest income. If an FHLBank is unable to enter into derivative instruments on acceptable terms, that FHLBank may be unable to effectively manage its interest-rate and other risks, which could adversely affect the financial condition and results of operations of that FHLBank and the FHLBanks on a combined basis.

An FHLBank may use a number of measures to monitor and manage interest-rate risk, including income simulations and duration or market value sensitivity analyses. Given the unpredictability of the financial markets, capturing all potential outcomes in these analyses is extremely difficult. Key assumptions include, but are not limited to, loan volumes and pricing, market conditions for consolidated obligations, interest-rate spreads and prepayment speeds, implied volatility of options contracts, and cash flows on mortgage-related assets. These assumptions are inherently uncertain and they cannot precisely estimate net interest income and the market value of equity. Actual results may differ from simulated results due to the timing, magnitude, and frequency of interest-rate changes and changes in market conditions and management strategies, among other factors. In addition, volatility and disruption in the capital markets may result in a higher level of volatility in an FHLBank's interest-rate risk profile and could negatively affect that FHLBank's ability to manage interest-rate risk effectively.

Interest-rate changes can exacerbate prepayment and extension risks. Decreases in interest rates typically cause mortgage prepayments to increase and may result in lower interest income and substandard performance in an FHLBank's mortgage portfolio, as there are generally limited reinvestment opportunities at similar interest rates. In addition, while these prepayments would reduce the asset balance, the associated debt may remain outstanding and at above-market rates. Conversely, when interest rates increase, an FHLBank may experience extension risk, which is the risk that the mortgage-related investments will remain outstanding longer than expected at below-market yields. Therefore, any changes in interest rates could adversely affect an FHLBank's net interest income. (See [Quantitative and Qualitative Disclosures about Market Risk](#) for additional discussion and analysis regarding the FHLBanks' sensitivity to interest-rate changes and the use of derivatives to manage their exposure to interest-rate risk.)

Changes to the credit ratings of consolidated obligations could adversely affect the FHLBanks' ability to access the capital markets, their primary source of funding, on acceptable terms, which could adversely affect the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

The FHLBanks' consolidated obligations are rated AA+/A-1+ with a stable outlook by S&P and Aaa/P-1 with a stable outlook by Moody's. Rating agencies may from time to time change a rating or outlook or issue negative reports. Investors should not take the FHLBanks' historical or current ratings as an indication of future ratings for the FHLBanks' consolidated obligations. Because the FHLBanks are jointly and severally liable for consolidated obligations, negative developments at any FHLBank may affect these credit ratings or result in the issuance of a negative report regardless of the financial condition and results of operations of the other FHLBanks. In addition, because of the FHLBanks' GSE status, the credit ratings of the FHLBank System, the FHLBanks, and consolidated obligations are directly influenced by the sovereign credit rating of the United States. For example, downgrades to the U.S. sovereign credit rating or outlook may occur if the U.S. government fails to adequately address, based on

the credit rating agencies' criteria, its fiscal budget deficit or statutory debt limits, including as a result of fiscal or other policy measures taken in response to the COVID-19 pandemic. As a result, if the U.S. sovereign credit ratings or outlook were downgraded, similar downgrades in the credit ratings or outlook of the FHLBanks and consolidated obligations would most likely occur, even though the consolidated obligations are not obligations of, or guaranteed by, the United States.

Future downgrades in credit ratings or outlook may result in higher funding costs, higher volatilities, or other disruptions in the FHLBanks' access to capital markets, including additional collateral posting requirements under certain derivative instrument arrangements. (See [Note 7 - Derivatives and Hedging Activities - Managing Credit Risk on Derivatives](#) to the accompanying combined financial statements for more information about the FHLBanks' additional collateral requirements.) Furthermore, member demand for certain FHLBank products could weaken. To the extent that the FHLBanks cannot access funding when needed on acceptable terms to effectively manage their cost of funds, the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis and the value of FHLBank membership could be negatively affected.

Liquidity Risk

Disruptions in the short-term capital markets or changes to the regulatory environment could have an adverse effect on the FHLBanks' ability to refinance their consolidated obligations or to manage their liquidity positions to meet members' needs on acceptable terms.

Each FHLBank's ability to operate its business, meet its obligations, and generate net interest income depends primarily on its ability to issue debt continuously to meet member demand and to refinance existing outstanding debt at attractive rates, maturities, and call features when needed. The FHLBanks' primary source of funds is the sale of consolidated obligations in the capital markets through the Office of Finance. The FHLBanks' ability to obtain funds through the sale of consolidated obligations generally depends on prevailing conditions in the capital markets, and, in particular, their ability to access the short-term capital markets due to their preference for short-term funding.

Access to short-term debt markets has been supported by continued demand as investors, driven by increased liquidity preferences and risk aversion, have sought the FHLBanks' short-term debt as an asset of choice. This has led to advantageous funding opportunities and increased utilization of debt maturing in one year or less. There are inherent risks in utilizing short-term funding to support longer-dated assets and the FHLBanks may be exposed to refinancing risk. Refinancing risk includes the risk that the FHLBanks could have difficulty rolling over short-term obligations when market conditions change or investor demand for short-term consolidated obligations declines. In managing and monitoring the amounts of financial assets that require refinancing, the FHLBanks consider their contractual maturities, as well as certain assumptions regarding expected cash flows (i.e., estimated prepayments, embedded call optionality, and scheduled amortizations).

The FHLBanks are also exposed to liquidity risk if there is any significant disruption in the short-term debt markets. Without access to the short-term debt markets on acceptable terms, the alternative longer-term funding, if available, would increase funding costs and interest-rate risk exposure and could cause the FHLBanks to increase advance rates, potentially affecting demand for advances. If this disruption is prolonged, the FHLBanks may not be able to obtain funding on acceptable terms and this could adversely affect their ability to support and continue their operations. As a result, an FHLBank's inability to manage its liquidity position or its contingency liquidity plan to meet its obligations, as well as the credit and liquidity needs of its members, could adversely affect the financial condition and results of operations of that FHLBank and the FHLBanks on a combined basis as well as the value of FHLBank membership.

Additionally, changes to the regulatory environment that affect FHLBanks' investors and dealers of consolidated obligations, particularly changes related to capital and liquidity requirements and money market fund reforms, have affected, and will continue to affect, the FHLBanks' ability to access the capital markets on acceptable terms.

For example, the SEC's implementation of money market fund reforms from 2010 to 2016 resulted in a significant increase in demand for U.S. government and agency debt, including the FHLBanks' short-term consolidated obligations. The holding of the FHLBanks' consolidated obligations by money market funds, as a percentage of the total outstanding consolidated obligations, generally increased as a result of these reforms until recent periods. While demand from this investor class benefited the FHLBanks' ability to access short-term funding at attractive costs, this demand could change if money market investor risk and return preferences and money market regulatory requirements shift over time. A decrease in this demand could, due to the FHLBanks' concentration in money market investors, lead to significant investor outflows and unfavorable market conditions. Policymakers and regulators in the U.S. have been examining potential policy measures intended to improve the resilience of money market funds and broader short-term funding markets in recent years, including in response to the market stress experienced by short-term funding markets in March 2020, amid the COVID-19 pandemic, and the SEC proposed additional money market fund reforms in December 2021, designed to improve the resilience and transparency of money market funds. As such, changes in regulatory requirements governing money market funds, including any reversal of prior money market fund reforms, could have a negative effect on FHLBank short-term funding costs and adversely affect the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

See [Financial Discussion and Analysis - Liquidity and Capital Resources](#) for more discussion regarding the FHLBanks' liquidity requirements and [Financial Discussion and Analysis - Liquidity and Capital Resources - Liquidity - Refinancing Risk and Investor Concentration Risk](#) for the percentage of consolidated obligations held by money market funds.

Operational Risk

A failure of the FHLBanks' business and financial models to produce reliable results could adversely affect the FHLBanks' businesses, financial condition, results of operations, and risk management.

Each FHLBank makes significant use of business and financial models for managing, measuring, and monitoring different risks, including interest rate, prepayment, and other market risks, as well as credit risk. Each FHLBank also uses models in determining the fair value of financial instruments when independent price quotations are not available or reliable. The information provided by these models is also used in making business decisions relating to strategies, initiatives, risk management, transactions and products, and for financial reporting. Because models use assumptions to project future trends and performance, they are inherently imperfect predictors of actual results.

Changes in business or financial models or in their underlying assumptions, judgments, or estimates may cause the results generated by the models to be materially different. If the models are not reliable, an FHLBank could make poor business decisions, including poor asset and liability management decisions, that could result in an adverse financial effect on that FHLBank's business. Furthermore, strategies that an FHLBank employs to manage the risks associated with the use of models may not be effective. The models used by each FHLBank to determine the fair values of its assets and liabilities, including derivatives, may differ from the models used by the other FHLBanks. The use of different models or assumptions by individual FHLBanks, as well as changes in market conditions, could result in materially different valuation estimates or other estimates even when similar or identical assets and liabilities are being measured, and could have materially different effects on the net income and retained earnings of each of the FHLBanks.

Although each FHLBank adjusts its internal models when necessary to reflect changes in economic conditions, housing markets, and other key factors, the risk remains that an FHLBank's internal models could produce unreliable results or estimates that vary materially from actual results. (See [Financial Discussion and Analysis - Critical Accounting Estimates](#) for more discussion about the FHLBanks' use of financial models in determining critical accounting estimates.)

Failures of critical vendors and other third parties could disrupt the FHLBanks' and the Office of Finance's ability to conduct and manage their businesses.

Each of the FHLBanks and the Office of Finance relies on vendors and other third parties to perform certain critical services. For instance, due to their reliance on the book-entry system of the Federal Reserve Banks for debt issuance and servicing operations, the FHLBanks and the Office of Finance have critical dependency on certain third parties, including their fiscal agent, the Federal Reserve Bank of New York, and one or more settlement agents to issue and make payments of principal and interest on consolidated obligations.

A failure or interruption of one or more of those services, including as a result of breaches, cyber-attacks, system malfunctions or failures, or other technological risks, could negatively affect the business operations of the FHLBanks and the Office of Finance. If one or more of these key external parties were not able to perform their functions for a period of time, at an acceptable service level, or for increased volumes, the FHLBanks' and the Office of Finance's business operations could be constrained, disrupted, or otherwise negatively affected. For instance, the Federal Reserve Banks suffered a widespread outage on February 24, 2021, which resulted in disruptions to its payment services and other financial services across the U.S., including services used by the FHLBanks and the Office of Finance. Additionally, the use of vendors and other third parties also exposes the FHLBanks and the Office of Finance to the risk of a loss of data, intellectual property, or confidential information, or other harm. To the extent that vendors do not conduct their activities under appropriate standards, the FHLBanks and the Office of Finance could also be exposed to reputational risk.

While each of the FHLBanks and the Office of Finance has a business continuity plan in place, the FHLBanks' and the Office of Finance's ability to conduct and manage their businesses may be constrained by a critical vendor or a third-party failure.

Failures at the Office of Finance could disrupt the FHLBanks' ability to conduct and manage their businesses.

The Office of Finance is a joint office of the FHLBanks established to facilitate, among other things, the issuance and servicing of consolidated obligations. Pursuant to FHFA regulations, the Office of Finance, in conjunction with the FHLBanks, has adopted policies and procedures for the purposes of facilitating and approving the issuance and servicing of consolidated obligations.

A failure or interruption of the Office of Finance's services, including as a result of breaches, cyber-attacks, system malfunctions or failures, or other technological risks, could negatively affect the business operations of the FHLBanks, including disruptions to the FHLBanks' access to funding through the sale of consolidated obligations. Although the Office of Finance has business continuity and security incident response plans in place, the FHLBanks' funding and business operations could be constrained, disrupted, or otherwise negatively affected if the Office of Finance were not able to perform its functions for any period of time. Additionally, operational failures at the Office of Finance could also expose the FHLBanks to the risk of a loss of data or confidential information or other harm, including reputational damage.

Failures or circumventions of the financial reporting controls and procedures that each of the FHLBanks and the Office of Finance maintains, and that the Office of Finance relies upon to prepare the Combined Financial Report, could adversely affect the accuracy and meaningfulness of the information contained in this Combined Financial Report.

Each FHLBank is responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting with respect to the information and financial data provided to the Office of Finance. The Office of Finance is not required to establish and maintain disclosure controls and procedures and internal control over financial reporting in the same manner as those maintained by each FHLBank. Instead, the Office of Finance relies on each FHLBank management's certification and representation regarding the accuracy and completeness, in all material respects, of its data submitted to the Office of Finance. The Office of Finance has established controls and procedures concerning: (1) each FHLBank's submission of information and financial data

to the Office of Finance, (2) the process of combining the financial statements of the individual FHLBanks, and (3) the review of such information. However, an FHLBank's or the Office of Finance's failure to detect material weaknesses or circumventions of its respective key controls could have an adverse effect on the accuracy and meaningfulness of the Combined Financial Reports. (See [Controls and Procedures](#) for more information regarding each FHLBank's management assessment of its individual internal control over financial reporting and evaluation of its disclosure controls and procedures, and the Office of Finance's controls and procedures that apply to the preparation of the Combined Financial Reports.)

General

A failure, breach, or cyber-attack of the information systems of the FHLBanks or the Office of Finance could disrupt the FHLBanks' businesses or result in significant losses or reputational damage.

Each of the FHLBanks and the Office of Finance relies heavily on its information systems and technology to conduct and manage its business. A failure, breach, or cyber-attack of these systems or technologies could disrupt and prevent the FHLBanks and the Office of Finance from conducting and managing their businesses effectively. Moreover, such failure or breach could result in significant losses, including a loss of data, intellectual property, or confidential information, reputational damage, or other harm. Cyber-attacks, in particular those on financial institutions and financial market infrastructures, have also become more frequent, sophisticated, and increasingly difficult to detect or prevent. The threat of cyber-attacks may increase as a result of geopolitical conflicts.

Each of the FHLBanks and the Office of Finance employs processes and technologies to mitigate the risk associated with cyber threats and attacks that seek to compromise the security of its information or otherwise disrupt information systems. Although each of the FHLBanks and the Office of Finance takes measures designed to protect the security of its information systems, the security measures may not be able to prevent or mitigate certain failures, breaches, or attacks, or the negative effects of certain failures, breaches, or attacks.

The inability to attract and retain skilled key personnel could adversely affect the businesses and operations of the FHLBanks and the Office of Finance.

The FHLBanks and the Office of Finance rely on key personnel to manage their businesses and conduct their operations. Competition from within the financial services industry and from businesses outside the financial services industry, including the technology industry, for skilled key personnel often has been intense. For instance, certain FHLBanks and the Office of Finance experienced higher employee turnover or increased competition in hiring and retaining skilled key personnel in 2021, as the ongoing COVID-19 pandemic brought about significant disruptions and changes to the U.S. labor market. Failure to attract and retain skilled key personnel, or failure to develop and implement an effective succession plan, could adversely affect the businesses and operations of the FHLBanks and the Office of Finance.

Natural disasters, including those resulting from significant climate change, could adversely affect the members and business of one or more FHLBanks.

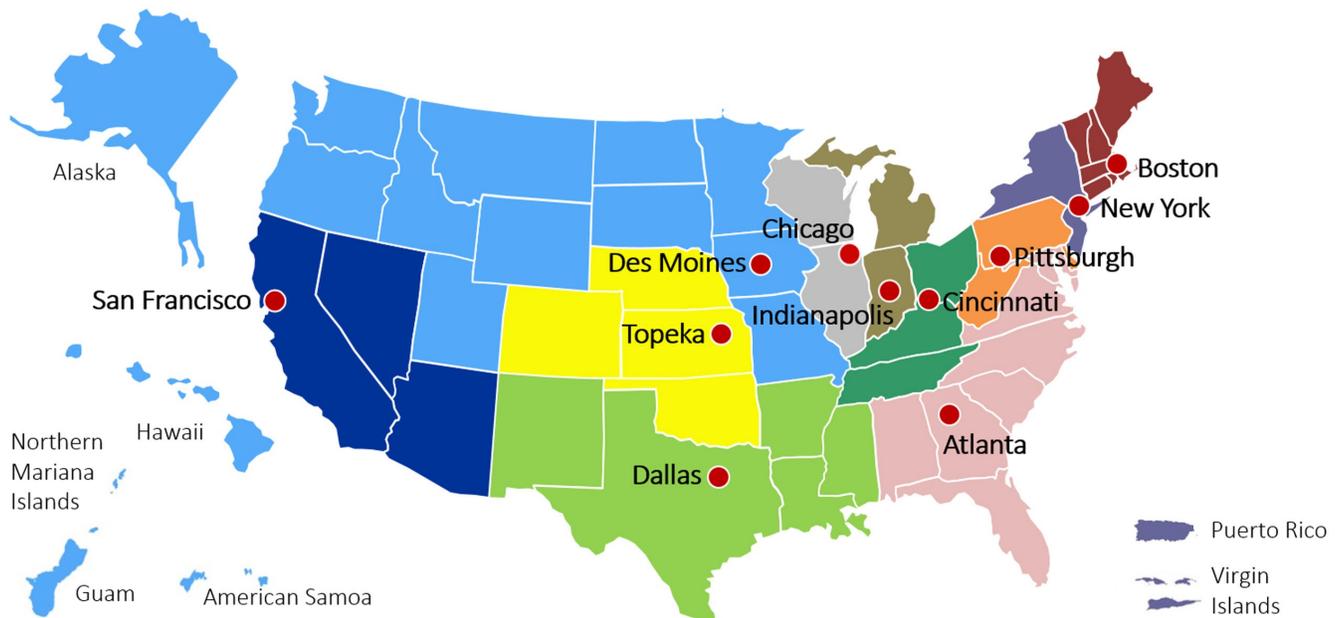
Regions in which the FHLBanks operate are subject to natural disasters, including risks from hurricanes, tornadoes, floods, wild fire, drought and other natural disasters. The frequency, intensity, and duration of extreme weather and climate-related disaster events have increased. These natural disasters, including those resulting from significant climate change, could destroy or damage the facilities or other properties of the FHLBanks or FHLBank members (such as collateral that members have pledged to secure advances or mortgages), disrupt the business of the FHLBanks or FHLBank members, increase the probability of power or other outages, negatively affect the livelihood of borrowers of FHLBank members, or otherwise cause significant economic dislocation in the affected regions. Any of these situations may adversely affect the financial condition and results of operations of an FHLBank and the FHLBanks on a combined basis.

PROPERTIES AND GEOGRAPHIC DISTRIBUTION

The FHLBanks operate in all 50 states, the District of Columbia, and U.S. territories, and had 6,577 members at December 31, 2021. See [Market for Capital Stock and Related Stockholder Matters](#) for more information on FHLBank members. Each FHLBank serves members whose principal place of business is located in its specifically-defined geographic district. In addition to their principal business location, each of the FHLBanks and the Office of Finance also maintain off-site back-up facilities (leased or owned), and may also maintain additional office space.

Table 2 - Properties and Geographic Distribution

FHLBank	Principal Business Address	Owned/Leased	States and Territories	Number of Members
Boston	800 Boylston Street 9th Floor Boston, MA 02199	Leased	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	423
New York	101 Park Avenue New York, NY 10178-0601	Leased	New Jersey, New York, Puerto Rico, U.S. Virgin Islands	332
Pittsburgh	601 Grant Street Pittsburgh, PA 15219	Leased	Delaware, Pennsylvania, West Virginia	281
Atlanta	1475 Peachtree St., N.E. Atlanta, GA 30309	Owned	Alabama, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia	812
Cincinnati	221 East Fourth St. Suite 600 Cincinnati, OH 45202	Leased	Kentucky, Ohio, Tennessee	618
Indianapolis	8250 Woodfield Crossing Blvd. Indianapolis, IN 46240	Owned	Indiana, Michigan	348
Chicago	433 West Van Buren Street Suite 501S Chicago, IL 60607	Leased	Illinois, Wisconsin	676
Des Moines	909 Locust Street Des Moines, IA 50309	Owned	Alaska, American Samoa, Guam, Hawaii, Idaho, Iowa, Minnesota, Missouri, Montana, North Dakota, Commonwealth of the Northern Mariana Islands, Oregon, South Dakota, Utah, Washington, Wyoming	1,280
Dallas	8500 Freeport Parkway South Irving, TX 75063	Owned	Arkansas, Louisiana, Mississippi, New Mexico, Texas	798
Topeka	500 S.W. Wanamaker Road Topeka, KS 66606-2444	Owned	Colorado, Kansas, Nebraska, Oklahoma	678
San Francisco	333 Bush Street Suite 2700 San Francisco, CA 94104	Leased	Arizona, California, Nevada	331
Office of Finance	1818 Library Street Suite 420 Reston, VA 20190	Leased	N/A	N/A



LEGAL PROCEEDINGS

The FHLBanks are subject to various pending legal proceedings arising in the normal course of business. The FHLBanks and the Office of Finance do not believe they are a party to, or subject to, any pending legal proceedings where the ultimate liability of the FHLBanks, if any, arising out of these proceedings is likely to have a material effect on the results of operations, financial condition, or liquidity of the FHLBanks on a combined basis or that are otherwise material to the FHLBanks on a combined basis.

The FHLBank of Des Moines has been involved in pending litigation with a current member stemming from alleged breaches by the member under the FHLBank's MPF program and the member's failure to repay its outstanding advances owed to the FHLBank. During the second quarter of 2021, all litigation related to this member's failure to repay its outstanding advances was resolved. After consultation with legal counsel, the FHLBank of Des Moines' management does not anticipate that the ultimate liability, if any, arising out of the remaining MPF litigation with this member will have a material adverse effect on the FHLBank's financial condition or results of operations.

See each FHLBank's 2021 SEC Form 10-K under *Part I. Item 3 - Legal Proceedings* for additional information, including updates, to its legal proceedings.

MARKET FOR CAPITAL STOCK AND RELATED STOCKHOLDER MATTERS

As a cooperative, each FHLBank conducts its advances business and mortgage loan programs almost exclusively with its members. Members and certain former members own all of the FHLBanks’ capital stock. There is no established marketplace for the FHLBanks’ stock and it is not publicly traded. FHLBank stock is purchased by members at the stated par value of \$100 per share and may be redeemed/repurchased at its stated par value of \$100 per share, subject to applicable redemption periods and certain conditions and limitations. (See [Business - Capital, Capital Rules, and Dividends](#) for more information on the restrictions on capital stock redemptions and repurchases.)

At December 31, 2021, the FHLBanks had 255 million shares of capital stock outstanding, including mandatorily redeemable capital stock. The FHLBanks are not required to register their securities under the Securities Act of 1933, as amended; however, each FHLBank is required to register a class of its stock under the Securities Exchange Act of 1934, as amended. (See [Note 11 - Capital](#) to the accompanying combined financial statements for additional information on regulatory capital stock and mandatorily redeemable capital stock.)

Table 3 presents combined regulatory capital stock, which includes mandatorily redeemable capital stock, held by type of member and FHLBank membership by type of member.

Table 3 - Regulatory Capital Stock Held and Membership by Type of Member
(dollars in millions)

	December 31, 2021		December 31, 2020	
	Regulatory Capital Stock Amount	Number of Members	Regulatory Capital Stock Amount	Number of Members
Commercial banks	\$ 10,335	3,807	\$ 13,168	3,916
Insurance companies	6,550	542	6,287	528
Credit unions	4,368	1,560	3,997	1,559
Savings institutions	3,793	600	3,927	630
Community development financial institutions	19	68	19	64
Total	25,065	6,577	27,398	6,697
Mandatorily redeemable capital stock	398		772	
Total combined regulatory capital stock	\$ 25,463		\$ 28,170	

Figures 3 and 4 present the percentage of regulatory capital stock held, and membership, by type of member at December 31, 2021.

Figure 3 - Percentage of Regulatory Capital Stock Held by Type of Member

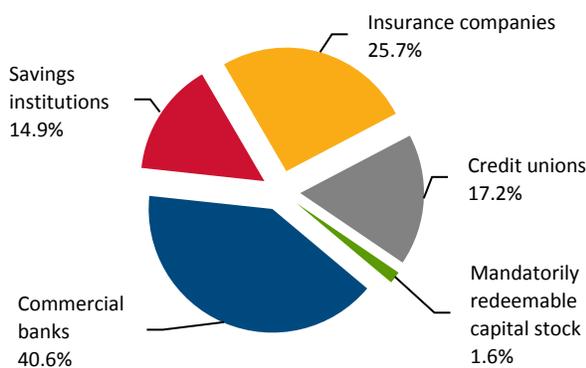
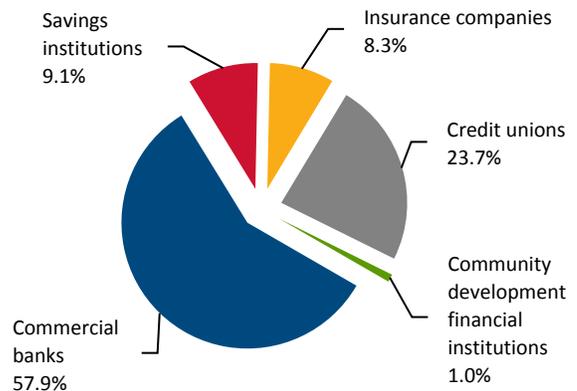


Figure 4 - Percentage of Membership by Type of Member



The information on regulatory capital stock presented in Table 4 is accumulated at the holding-company level. The percentage of total regulatory capital stock identified in Table 4 for each holding company was computed by dividing all regulatory capital stock owned by subsidiaries of that holding company by total combined regulatory capital stock. These percentage concentrations do not represent ownership concentrations in an individual FHLBank.

Table 4 - Top 10 Regulatory Capital Stockholders by Holding Company at December 31, 2021

(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Regulatory Capital Stock(3)	Percentage of Total Regulatory Capital Stock	Mandatorily Redeemable Capital Stock
MetLife, Inc.	New York	\$ 769	3.0 %	\$ —
New York Community Bancorp, Inc.	New York	734	2.9 %	—
TIAA	Atlanta, New York	463	1.8 %	—
Midland Financial Co.	Topeka	414	1.6 %	—
MP (Thrift) LLC	Indianapolis	377	1.5 %	—
Citigroup Inc.	New York	338	1.3 %	—
Bank of America Corporation	Atlanta, San Francisco, Boston, Des Moines	319	1.3 %	4
Equitable Holdings, Inc.	New York	311	1.2 %	—
JPMorgan Chase & Co.	Chicago, Cincinnati, Des Moines, San Francisco	295	1.2 %	253
Ally Financial Inc.	Pittsburgh	289	1.1 %	—
		\$ 4,309	16.9 %	\$ 257

- (1) Holding company information was obtained from the Federal Reserve System's web site, the National Information Center (NIC), and SEC filings. The NIC is a central repository of data about banks and other institutions for which the Federal Reserve System has a supervisory, regulatory, or research interest, including both domestic and foreign banking organizations operating in the United States.
- (2) At December 31, 2021, each holding company had subsidiaries with regulatory capital stock holdings in these FHLBank districts.
- (3) Includes FHLBank capital stock that is considered to be mandatorily redeemable, which is classified as a liability under GAAP.

Table 5 presents information on the five largest regulatory capital stockholders by FHLBank at December 31, 2021. The information presented on capital stock in Table 5 is for individual FHLBank regulatory capital stockholders. The data is not aggregated to the holding-company level. Some of the institutions listed may be affiliates of the same holding company, and some of the institutions listed may have affiliates that are regulatory capital stockholders that are not listed in the table. Each FHLBank describes its risk management policies, including disclosures about its concentration risk, if any, in its periodic reports filed with the SEC. (See [Explanatory Statement about Federal Home Loan Banks Combined Financial Report](#).)

Table 5 - Top 5 Regulatory Capital Stockholders by FHLBank at December 31, 2021

(dollars in millions)

District	Name	Holding Company Name(1)	Regulatory Capital Stock	Percentage of FHLBank Regulatory Capital Stock(2)	Mandatorily Redeemable Capital Stock
Boston	Massachusetts Mutual Life Insurance Company		\$ 75	7.7 %	\$ —
	Voya Retirement Insurance and Annuity Company		47	4.9 %	—
	People's United Bank, National Association		36	3.7 %	—
	Hingham Institution for Savings		30	3.1 %	—
	Salem Five Cents Savings Bank		29	3.0 %	—
			\$ 217	22.4 %	\$ —

District	Name	Holding Company Name(1)	Regulatory Capital Stock	Percentage of FHLBank Regulatory Capital Stock(2)	Mandatorily Redeemable Capital Stock
New York	New York Community Bank	New York Community Bancorp, Inc.	\$ 734	16.3 %	\$ —
	Metropolitan Life Insurance Company	MetLife, Inc.	718	15.9 %	—
	Citibank, N.A.	Citigroup Inc.	338	7.5 %	—
	Equitable Financial Life Insurance Company	Equitable Holdings, Inc.	311	6.9 %	—
	Teachers Insurance and Annuity Association of America	TIAA	186	4.1 %	—
			\$ 2,287	50.7 %	\$ —
Pittsburgh	Ally Bank	Ally Financial Inc.	\$ 289	23.1 %	\$ —
	TD Bank, N.A.		160	12.8 %	—
	First National Bank of Pennsylvania		122	9.7 %	—
	PNC Bank, National Association		45	3.6 %	—
	Santander Bank, N.A.		37	3.0 %	—
			\$ 653	52.2 %	\$ —
Atlanta	Bank of America, National Association	Bank of America Corporation	\$ 298	12.5 %	\$ —
	TIAA, FSB	TIAA	277	11.6 %	—
	Pentagon Federal Credit Union		234	9.8 %	—
	Navy Federal Credit Union		190	8.0 %	—
	BankUnited, National Association		88	3.7 %	—
			\$ 1,087	45.6 %	\$ —
Cincinnati	U.S. Bank National Association(3)		\$ 186	7.4 %	\$ —
	Third Federal Savings and Loan Association of Cleveland		163	6.5 %	—
	Protective Life Insurance Company		143	5.7 %	—
	Nationwide Life Insurance Company		143	5.7 %	—
	Western-Southern Life Assurance Company(3)		90	3.6 %	—
			\$ 725	28.9 %	\$ —
Indianapolis	Flagstar Bank, FSB(3)	MP (Thrift) LLC	\$ 377	16.4 %	\$ —
	The Lincoln National Life Insurance Company		195	8.5 %	—
	Jackson National Life Insurance Company		125	5.5 %	—
	Old National Bank		101	4.4 %	—
	Forethought Life Insurance Company		81	3.5 %	—
			\$ 879	38.3 %	\$ —
Chicago	JPMorgan Chase Bank, National Association	JPMorgan Chase & Co.	\$ 245	10.2 %	\$ 245
	BMO Harris Bank, National Association		137	5.7 %	—
	State Farm Mutual Automobile Insurance Company		113	4.7 %	—
	Alliant Credit Union		112	4.7 %	—
	The Northwestern Mutual Life Insurance Company		92	3.9 %	—
			\$ 699	29.2 %	\$ 245

District	Name	Holding Company Name(1)	Regulatory Capital Stock	Percentage of FHLBank Regulatory Capital Stock(2)	Mandatorily Redeemable Capital Stock
Des Moines	EquiTrust Life Insurance Company		\$ 182	5.4 %	\$ —
	Principal Life Insurance Company		180	5.3 %	—
	Midland National Life Insurance Company		133	3.9 %	—
	Transamerica Life Insurance Company		130	3.8 %	—
	Athene Annuity and Life Company		105	3.1 %	—
				\$ 730	21.5 %
Dallas	American General Life Insurance Company		\$ 158	7.2 %	\$ —
	Security Service Federal Credit Union		96	4.4 %	—
	Texas Capital Bank, National Association		96	4.4 %	—
	Randolph-Brooks Federal Credit Union		79	3.6 %	—
	Life Insurance Company of the Southwest		74	3.4 %	—
				\$ 503	23.0 %
Topeka	MidFirst Bank	Midland Financial Co.	\$ 414	27.6 %	\$ —
	Capitol Federal Savings Bank		75	5.0 %	—
	United of Omaha Life Insurance Company		72	4.8 %	—
	Security Life of Denver Insurance Company		66	4.4 %	—
	Colorado Federal Savings Bank		41	2.7 %	—
				\$ 668	44.5 %
San Francisco	First Republic Bank		\$ 115	5.6 %	\$ —
	MUFG Union Bank, National Association		68	3.3 %	—
	First Technology Federal Credit Union(3)		56	2.7 %	—
	Luther Burbank Savings(3)		23	1.1 %	—
	Pacific Premier Bank		17	0.8 %	—
				\$ 279	13.5 %

- (1) The holding company name is only shown for each Top 5 regulatory capital stockholder that has its holding company listed in Table 4 - Top 10 Regulatory Capital Stockholders by Holding Company at December 31, 2021.
- (2) For consistency with the individual FHLBank's presentation of its Top 5 regulatory capital stockholders at December 31, 2021, amounts used to calculate percentages of FHLBank regulatory capital stock may be based on numbers in thousands. Accordingly, recalculations using the amounts in millions as presented in Table 5 may not produce the same results.
- (3) Indicates that an officer or director of the stockholder was an FHLBank director within that district at December 31, 2021.

SELECTED FINANCIAL DATA

<i>(dollars in millions)</i>	2021	2020	2019	2018	2017
Selected Statement of Condition Data at December 31,					
Investments(1)	\$ 308,471	\$ 305,865	\$ 374,995	\$ 306,790	\$ 307,280
Advances	351,278	422,639	641,519	728,767	731,544
Mortgage loans held for portfolio	55,497	62,842	72,492	62,534	53,827
Total assets	723,238	820,740	1,099,113	1,102,850	1,103,451
Deposits	14,303	15,340	10,404	7,560	7,789
Consolidated obligations					
Discount notes	210,897	274,804	404,035	426,034	391,480
Bonds	441,024	473,714	622,161	603,491	641,601
Total consolidated obligations	651,921	748,518	1,026,196	1,029,525	1,033,081
Mandatorily redeemable capital stock	398	772	1,378	1,062	1,272
Capital					
Total capital stock(2)	25,065	27,398	34,495	38,498	37,657
Retained earnings	22,760	21,998	20,588	19,504	18,099
Accumulated other comprehensive income (loss)	1,297	784	344	342	724
Total capital	49,122	50,180	55,427	58,344	56,480
Selected Statement of Income Data for the year ended December 31,					
Net interest income	\$ 3,747	\$ 4,441	\$ 4,682	\$ 5,256	\$ 4,481
Provision (reversal) for credit losses	(15)	38	2	2	—
Net interest income after provision (reversal) for credit losses	3,762	4,403	4,680	5,254	4,481
Non-interest income (loss)	(358)	273	297	27	615
Non-interest expense	1,432	1,570	1,425	1,315	1,336
Affordable Housing Program Assessments	201	315	362	404	384
Net income	\$ 1,771	\$ 2,791	\$ 3,190	\$ 3,562	\$ 3,376
Selected Other Data for the year ended December 31,					
Cash and stock dividends	\$ 1,009	\$ 1,553	\$ 2,121	\$ 2,162	\$ 1,659
Dividend payout ratio(3)	56.97 %	55.64 %	66.49 %	60.70 %	49.14 %
Return on average equity(4)(5)	3.54 %	5.21 %	5.69 %	6.18 %	6.25 %
Return on average assets	0.23 %	0.28 %	0.29 %	0.32 %	0.31 %
Average equity to average assets(5)	6.59 %	5.30 %	5.15 %	5.20 %	5.02 %
Net interest margin(6)	0.50 %	0.44 %	0.43 %	0.48 %	0.42 %
Selected Other Data at December 31,					
GAAP capital-to-asset ratio	6.79 %	6.11 %	5.04 %	5.29 %	5.12 %
Regulatory capital-to-assets ratio(7)	6.67 %	6.11 %	5.14 %	5.36 %	5.17 %

- (1) Investments consist of interest-bearing deposits, securities purchased under agreements to resell, federal funds sold, trading securities, available-for-sale securities (AFS), and held-to-maturity securities (HTM).
- (2) FHLBank capital stock is redeemable at the request of a member subject to the statutory redemption periods and other conditions and limitations. (See [Note 11 - Capital](#) to the accompanying combined financial statements for additional information on the statutory redemption periods and other conditions and limitations.)
- (3) Dividend payout ratio is equal to dividends declared in the period expressed as a percentage of net income in the period. This ratio may not be as relevant to the combined balances because there are no shareholders at the FHLBank System-wide level.
- (4) Return on average equity is equal to net income expressed as a percentage of average total capital.
- (5) Mandatorily redeemable capital stock is not included in the calculations of return on average equity or average equity to average assets.
- (6) Net interest margin is equal to net interest income represented as a percentage of average interest-earning assets.
- (7) The regulatory capital-to-assets ratio is calculated based on the FHLBanks' regulatory capital as a percentage of total assets. (See [Note 11 - Capital](#) to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

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

Investors should read this financial discussion and analysis of combined financial condition and combined results of operations together with the combined financial statements and the accompanying notes in this Combined Financial Report of the FHLBanks. Each FHLBank discusses its financial condition and results of operations in its periodic reports filed with the SEC. Each FHLBank's Annual Report on SEC Form 10-K and Quarterly Report on SEC Form 10-Q contain, as required by applicable SEC rules, a "Management's Discussion and Analysis of Financial Condition and Results of Operations," commonly called MD&A. The SEC notes that one of the principal objectives of MD&A is "to provide a narrative explanation of a company's financial statements that enables investors to see the company through the eyes of management." Because there is no centralized management of the FHLBanks that can provide a system-wide "eyes of management" view of the FHLBanks as a whole, this Combined Financial Report does not contain a conventional MD&A. Instead, a "Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations" is prepared by the Office of Finance using information provided by each FHLBank. This Financial Discussion and Analysis does not generally include a separate discussion of how each FHLBank's operations affect the combined financial condition and combined results of operations. That level of information about each FHLBank is addressed in each respective FHLBank's periodic reports filed with the SEC. (See [Explanatory Statement about Federal Home Loan Banks Combined Financial Report](#) and [Supplemental Information - Individual Federal Home Loan Bank Selected Financial Data and Financial Ratios](#).)

The combined financial statements include the financial results of the FHLBanks. (See [Condensed Combining Schedules](#) to the accompanying combined financial statements for information regarding each FHLBank's results.) Transactions between the FHLBanks have been eliminated in accordance with combination accounting principles similar to consolidation under GAAP. (See [Note 1 - Summary of Significant Accounting Policies](#) to the accompanying combined financial statements and [Interbank Eliminations](#) for more information.)

Unless otherwise stated, dollar amounts disclosed in this Combined Financial Report represent values rounded to the nearest million. Dollar amounts rounding to less than one million are not reflected in this Combined Financial Report.

Executive Summary

This executive summary highlights selected information and may not contain all of the information that is important to readers of this Combined Financial Report. For a more complete understanding of events, trends, and uncertainties, this executive summary should be read together with the Financial Discussion and Analysis section in its entirety and the FHLBanks' combined financial statements and related notes.

Overview

The FHLBanks are GSEs, federally-chartered, but privately capitalized and independently managed. The FHLBanks together with the Office of Finance, a joint office of the FHLBanks, comprise the FHLBank System. Each of the FHLBanks and the Office of Finance operates under the supervisory and regulatory framework of the FHFA.

The FHLBanks are cooperative institutions, meaning that their stockholders are also the FHLBanks' primary customers. FHLBank capital stock is not publicly traded; it is purchased by members from, and redeemed or repurchased by, an FHLBank at the stated par value of \$100 per share. The FHLBanks expand and contract in asset size as the needs of member financial institutions and their communities change over time.

Each FHLBank's primary business is to serve as a financial intermediary between the capital markets and its members. This intermediation process involves raising funds by issuing debt, known as consolidated obligations, in the capital markets and lending those proceeds to member institutions in the form of secured loans, known as advances. Each FHLBank's funding is principally obtained from consolidated obligations issued through the Office of Finance on behalf of the FHLBanks. Consolidated obligations are joint and several obligations of each FHLBank. FHLBank debt issuance is generally driven by members' needs for advances.

The FHLBanks seek to maintain a balance between their public policy mission and their goal of providing adequate returns on member capital. The FHLBanks strive to achieve this balance by providing value to their members through advances, mortgage loan purchases, other services, and dividend payments. The FHLBanks' primary sources of earnings are the net interest spread between the yield on interest-earning assets and the average rate on interest-bearing liabilities, combined with earnings on invested capital. Due to the FHLBanks' cooperative structures, the FHLBanks generally earn a narrow net interest spread.

External Credit Ratings

The FHLBanks' ability to raise funds in the capital markets at narrow spreads to the U.S. Treasury yield curve is due largely to the FHLBanks' status as GSEs, which is reflected in their consolidated obligations receiving the same credit rating as the government bond credit rating of the United States, even though the consolidated obligations are not obligations of the United States and are not guaranteed by the United States. S&P Global Ratings (S&P), Moody's Investors Service (Moody's), or other rating organizations could downgrade or upgrade the credit rating of the U.S. government and GSEs, including the FHLBanks and their consolidated obligations. In addition to ratings on the FHLBanks' consolidated obligations, each FHLBank is rated individually by S&P and Moody's. Investors should note that a rating issued by a nationally recognized statistical rating organization is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn by the rating organization at any time. Investors should evaluate the rating of each nationally recognized statistical rating organization independently. Investors should not take the historical or current ratings of the FHLBanks or their consolidated obligations as an indication of future ratings for the FHLBanks and their consolidated obligations. (See [External Credit Ratings](#) for more information.)

Business Environment

The primary external factors that affect the FHLBanks' combined financial condition and results of operations include (1) the general state of the economy and financial markets, (2) conditions in the U.S. housing markets, (3) interest rate levels and volatility, and (4) the legislative and regulatory environment.

COVID-19 Pandemic. In March 2020, the President of the United States declared the COVID-19 pandemic a national emergency. The effects of the COVID-19 pandemic, and the governmental and public actions taken in response, on the global and U.S. economies and the FHLBanks continue to evolve, and the full duration and long-term effects of the pandemic, including the spread of new variants of the virus, remain uncertain. During the fourth quarter of 2020 and the first half of 2021, several COVID-19 vaccines were approved for emergency use in the United States. During the first half of 2021, progress on vaccinations led to a reopening of the economy and strong economic growth in the United States, supported by accommodative monetary and fiscal policy. The extraordinary governmental response to the pandemic resulted in significantly higher financial market liquidity and lower interest rates, as compared to levels before the pandemic. These market conditions have had, and may continue to have, a significant effect on the business and financial results of the FHLBanks. The extent to which the COVID-19 pandemic continues to affect the FHLBanks' businesses, financial condition, and results of operations will depend on many factors that remain highly uncertain and difficult to predict.

Throughout the COVID-19 pandemic, the FHLBanks have remained operational and have successfully executed their mission by serving as a reliable source of liquidity and funding for their members. The FHLBanks have individually and collectively responded to the evolving needs of members and communities during the COVID-19 pandemic. The FHLBanks are committed to assisting their members and their communities as the effects related to the pandemic continue to evolve. (See [Risk Factors](#) for additional information on potential risks to the FHLBanks, including those from the COVID-19 pandemic.)

Economy and Financial Markets. The FHLBanks' results of operations are influenced by the overall economy and financial markets, and, in particular, by FHLBank members' demand for advances and the FHLBanks' ability to maintain sufficient access to diverse sources of funding at relatively favorable costs. The FHLBanks' flexibility in utilizing various funding tools, in combination with their diverse investor base and their status as GSEs, has helped ensure reliable market access and demand for consolidated obligations throughout fluctuating market environments and regulatory changes affecting dealers of and investors in consolidated obligations. The Federal Reserve undertook a number of emergency actions beginning in 2020 to, among other things, help facilitate liquidity and support stability in the fixed-income markets as part of its commitment to use its full range of tools to support households, businesses, and the U.S. economy overall during the COVID-19 pandemic.

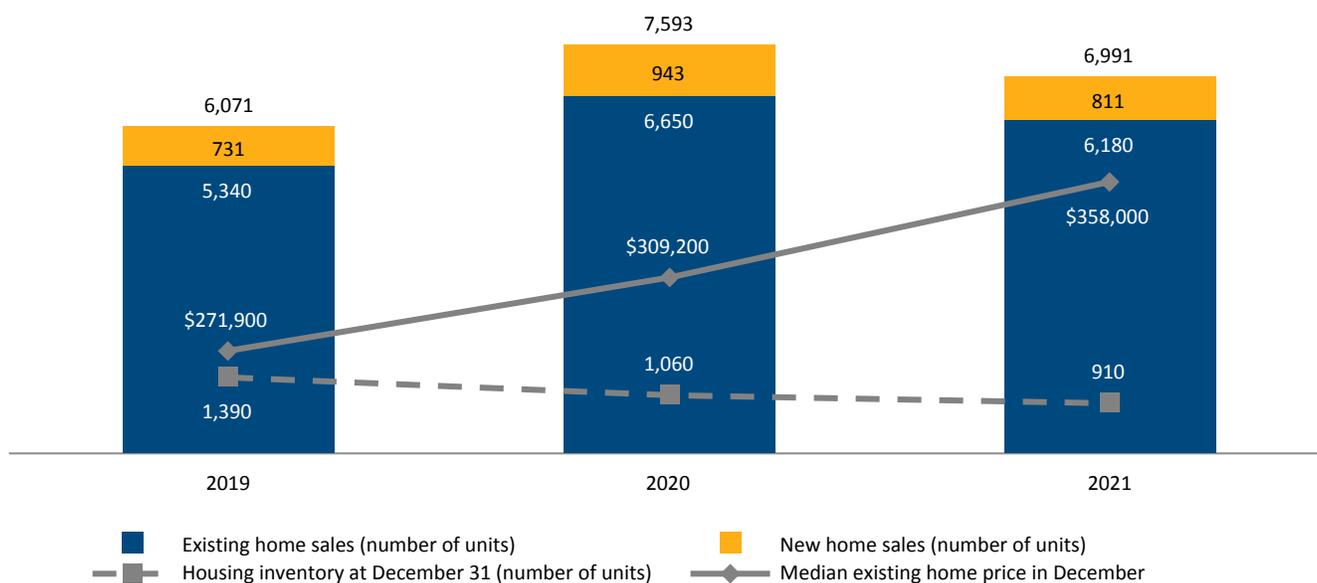
In January 2022, the Bureau of Labor Statistics reported that the U.S. unemployment rate was 3.9% in December 2021, down from 6.7% in December 2020. After a pandemic peak rate of 14.8% in April 2020, the unemployment rate has largely returned to pre-pandemic levels. The Bureau of Labor Statistics also reported that the unadjusted U.S. consumer price index increased 7.0% for the year ended December 31, 2021, compared to an increase of 1.4% for the year ended December 31, 2020.

U.S. real gross domestic product (GDP) increased at an annual rate of 7.0% in the fourth quarter of 2021, according to the second estimate reported by the Bureau of Economic Analysis, compared to the revised annual rate of 4.5% in the fourth quarter of 2020. U.S. real GDP increased 5.7% in 2021, compared to a decrease of 3.4% in 2020. Changes in unemployment and GDP during 2021 reflect the continued economic recovery, the reopening of businesses, and the continued government response related to the COVID-19 pandemic.

In late February 2022, Russia invaded Ukraine, which led to increased price volatility across financial markets, including the U.S. Treasury market. Although volatility has also increased in the market for the FHLBanks' consolidated obligations, the cost of newly-issued short-term consolidated obligations has changed only modestly and demand for consolidated obligations remains strong. Financial market participants continue to evaluate the effects of this conflict and the global response on the U.S. economy and financial markets, which remain uncertain.

Conditions in U.S. Housing Markets. Conditions in the U.S. housing markets primarily affect the FHLBanks through the creation of demand for, and yield on, advances and mortgage loans, as well as the yield on investments in MBS. Figure 5 presents U.S. home sales, inventory, and prices for the most recent three years. The seasonally adjusted annual rate of U.S. home sales declined by 8% in 2021, compared to 2020, driven by higher home prices and a lower inventory of homes. Business closures and the resulting spike in unemployment during 2020 caused many homeowners to seek relief from their mortgage payments, resulting in higher rates of mortgage loan delinquency. The federal government enacted several financial relief programs during the pandemic to help offset declines in business and family incomes. The American Rescue Plan Act of 2021, the third major COVID-19 relief bill, was passed by the U.S. Congress in March 2021. This legislation provided significant financial relief to businesses and individuals affected by the COVID-19 pandemic, including extending unemployment assistance programs to September 6, 2021. As a result of business relief efforts and progress on vaccinations, mortgage loan delinquency rates declined in 2021 as businesses reopened and the unemployment rate declined.

Figure 5 - U.S. Home Sales, Inventory, and Prices
(units in thousands and home prices in whole dollars)



Source: National Association of REALTORS® for existing home sales, housing inventory, and median existing home price.
Source: U.S. Census Bureau and the Department of Housing and Urban Development for new home sales.

Interest Rate Levels and Volatility. The level and volatility of interest rates affect FHLBank member demand for advances. In addition, credit spreads and the shape of the yield curve affect investor demand for consolidated obligations. These factors, driven in part by federal monetary and fiscal policies, also affect the FHLBanks' combined results of operations, primarily affecting net interest income and the valuation of certain assets and liabilities.

The level and volatility of interest rates and credit spreads were affected by several factors during the year ended December 31, 2021, principally the COVID-19 pandemic and efforts in response by the Federal Reserve to keep interest rates low and facilitate liquidity. Overall economic conditions and financial regulation also continue to be influencing factors.

On March 15, 2020, the Federal Open Market Committee lowered the federal funds rate in an unscheduled meeting, to a target range of 0.0% to 0.25%, noting that the COVID-19 pandemic had harmed communities and disrupted economic activity in many countries, including the United States. At its March 2022 meeting, the Federal Open Market Committee stated that indicators of economic activity and employment have continued to strengthen and it raised the target range of the federal funds rate to 0.25% to 0.50%, anticipating that ongoing increases in the target range will be appropriate. The Federal Open Market Committee noted that the implications for the U.S. economy from the Russian invasion of Ukraine are highly uncertain, but in the near term it is likely to create additional upward pressure on inflation and weigh on economic activity. In addition, the Federal Open Market Committee expects to begin reducing its holdings of Treasury securities and agency debt and agency mortgage-backed securities at a coming meeting.

Due to increases in money supply caused by federal stimulus programs, the demand for high credit quality, fixed-income investments has exceeded available supply and resulted in lower spreads for the FHLBanks' consolidated obligations relative to certain benchmark interest rates during 2021, compared to 2020. Generally, investor demand for the FHLBanks' consolidated obligations has remained strong, with market participants favoring fixed-rate and callable consolidated obligations during 2021. The FHLBanks continued to meet their funding needs during the year ended December 31, 2021.

Table 6 presents the yearly averages and period-end rates for certain key interest rates. The twelve-month averages of short-term interest rates were significantly lower during 2021, compared to 2020, affecting the FHLBanks' combined results of operations, primarily by decreasing both interest income and interest expense. At both December 31, 2021 and December 31, 2020, short-term interest rates were at historically low levels; however, long-term rates were higher at December 31, 2021, compared to long-term rates at December 31, 2020, which affected the fair values of certain assets and liabilities. The prevailing expectation of increasing interest rates from historically low levels will likely be a significant factor driving the FHLBanks' results of operations and financial condition in 2022.

Table 6 - Key Interest Rates

	Twelve-Month Average		Period End	
	December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
Federal Funds Effective	0.08 %	0.36 %	0.07 %	0.09 %
SOFR	0.04 %	0.36 %	0.05 %	0.07 %
Overnight LIBOR	0.08 %	0.37 %	0.06 %	0.08 %
1-week Overnight Indexed Swap	0.08 %	0.36 %	0.08 %	0.09 %
3-month LIBOR	0.16 %	0.65 %	0.21 %	0.24 %
3-month U.S. Treasury yield	0.04 %	0.35 %	0.04 %	0.07 %
2-year U.S. Treasury yield	0.26 %	0.39 %	0.73 %	0.12 %
10-year U.S. Treasury yield	1.44 %	0.89 %	1.51 %	0.92 %

Source: Bloomberg

Table 7 presents the average funding spreads of newly-issued consolidated obligations relative to three-month Treasury and SOFR indices, as well as the ending spread at each year end. For the year ended December 31, 2021, the cost of newly-issued, short-term and long-term consolidated obligations decreased, as measured by the average indicative spreads to three-month Treasury and SOFR indices, compared to the year ended December 31, 2020.

Table 7 - Funding Spreads to Three-Month Treasury and SOFR Indices

(in basis points)

Borrowing Term	Twelve-Month Average		Ending Spread	
	December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
Treasury				
3-months	1.4	3.6	1.5	2.3
2-years	1.9	7.7	1.5	1.0
5-years	3.1	18.4	7.0	5.3
10-years	13.7	42.7	24.0	18.5
SOFR				
3-months	1.0	5.6	(1.3)	3.8
2-years	5.2	20.0	2.7	6.6
5-years	15.4	35.4	19.6	16.6
10-years	35.1	66.3	41.0	38.2

Source: Funding spreads are derived using Office of Finance indications compared to Treasury and SOFR indices.

In July 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that after 2021 it would no longer persuade or compel banks to submit rates for the calculation of LIBOR. In response, the Federal Reserve Board and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee to identify a set of alternative reference interest rates for possible use as market benchmarks. This committee has proposed SOFR as its recommended alternative to U.S. dollar LIBOR. In March 2021, the Financial Conduct Authority further announced that LIBOR would either cease to be provided by any administrator or no longer be

representative immediately after December 31, 2021 (or, in the case of some more frequently used U.S. dollar LIBOR settings, immediately after June 30, 2023). (See [Risk Factors](#) and [Quantitative and Qualitative Disclosures about Market Risk](#) for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Legislative and Regulatory Environment. Potential legislative and regulatory changes, as well as other rules and regulations issued by the FHFA, could adversely affect the FHLBanks, FHLBank members, counterparties, and dealers of and investors in consolidated obligations. The FHLBanks' business operations, funding costs, rights, obligations, and the environment in which the FHLBanks carry out their mission could be significantly affected by these changes. (See [Legislative and Regulatory Developments](#) for more information.)

FHLBanks' Financial Highlights

Combined Financial Condition. The FHLBanks' assets expand and contract as the needs of member financial institutions and their communities change over time. Total assets were \$723.2 billion at December 31, 2021, a decrease of 12% from \$820.7 billion at December 31, 2020.

- Advances totaled \$351.3 billion at December 31, 2021, a decrease of 17% from \$422.6 billion at December 31, 2020. During 2021, advances, principally made to commercial bank members, decreased due to elevated levels of liquidity in the financial markets and elevated deposit levels at depository member institutions. While it is difficult to predict the future demand for advances, and the circumstances of the individual FHLBanks vary, advances may remain at reduced levels if the level of liquidity in the financial markets and deposit levels at members remain elevated. Commercial banks and insurance companies (excluding captive insurance companies) represented the largest segments of borrowers, each with 34% of the total principal amount of advances outstanding at December 31, 2021, compared to 43% and 27% at December 31, 2020. The top 10 advance holding borrowers by holding company represented 26% of the total principal amount of advances outstanding at December 31, 2021, compared to 27% at December 31, 2020. The FHLBanks protect against credit risk on advances by collateralizing all advances. At December 31, 2021, each FHLBank had rights to collateral with an estimated value greater than the related outstanding advances.
- Investments were \$308.5 billion at December 31, 2021, an increase of 1% from \$305.9 billion at December 31, 2020. The FHLBanks maintain investment portfolios to provide funds to meet the credit needs of their members, maintain liquidity, and earn interest income.
- Mortgage loans held for portfolio fell to \$55.5 billion at December 31, 2021, a decrease of 12% from \$62.8 billion at December 31, 2020, driven primarily by prepayments, resulting from the low mortgage interest-rate environment and reduced mortgage loan purchase volume. Principal repayments of \$21.0 billion outpaced mortgage loan purchases of \$14.2 billion. An FHLBank may purchase mortgage loans to support its housing mission, provide an additional source of liquidity to its members, diversify its investments, and generate additional earnings.

Total liabilities were \$674.1 billion at December 31, 2021, a decrease of 13% compared to \$770.6 billion at December 31, 2020.

- Consolidated obligations totaled \$651.9 billion at December 31, 2021, a decrease of 13% from \$748.5 billion at December 31, 2020, in line with the decrease in total assets and consisting of a 23% decrease in consolidated discount notes and a 7% decrease in consolidated bonds. Consolidated obligations are the principal funding source used by the FHLBanks to make advances and to purchase mortgage loans and investments. The future amounts and types of consolidated obligations issued depend primarily on the demand for the FHLBanks' advances.

Total GAAP capital was \$49.1 billion at December 31, 2021, a decrease of 2% from \$50.2 billion at December 31, 2020. The GAAP capital-to-assets ratio was 6.79% and the regulatory capital-to-assets ratio was 6.67% at December 31, 2021, compared to 6.11% for both ratios at December 31, 2020. Each FHLBank was in compliance with FHFA regulatory capital requirements at December 31, 2021.

- Capital stock was \$25.1 billion at December 31, 2021, a decrease of 9% from \$27.4 billion at December 31, 2020, due to the net repurchases and redemptions of activity-based capital stock, driven primarily by the decrease in advances, and the reclassification of capital stock to mandatorily redeemable capital stock.
- Retained earnings grew to \$22.8 billion at December 31, 2021, an increase of 3% from \$22.0 billion at December 31, 2020, resulting principally from net income of \$1,771 million, partially offset by dividends of \$1,009 million.

Combined Results of Operations. Net income was \$1,771 million for the year ended December 31, 2021, a decrease of \$1,020 million, or 37%, compared to the year ended December 31, 2020, resulting primarily from decreases in net interest income and non-interest income.

Net interest income was \$3,747 million for the year ended December 31, 2021, a decrease of \$694 million, or 16%, compared to the year ended December 31, 2020. Net interest margin was 0.50% for the year ended December 31, 2021, an increase of 6 basis points compared to the year ended December 31, 2020, driven primarily by the lower cost of consolidated obligations, resulting from the tightening of spreads relative to certain benchmark interest rates during 2021, supported by high demand for consolidated obligations by investors. Also contributing to the increase in net interest margin compared to the year ended December 31, 2020, was the lower net interest margin for the year ended December 31, 2020, which was driven by several factors associated with the decline in interest rates that occurred in March 2020, during the onset of the COVID-19 pandemic. Both interest income and interest expense were lower for the year ended December 31, 2021, compared to the year ended December 31, 2020, primarily as a result of the low interest-rate environment; however, lower average balances of interest-earning assets, principally advances, and lower average balance of consolidated obligations were also contributing factors. The future level of net interest income of the FHLBanks will depend, in part, upon the level and volatility of interest rates, demand for advances, cost of consolidated obligations, fiscal or monetary stimulus, as well as the timing and shape of the economic recovery.

Non-interest income was a loss of \$358 million for the year ended December 31, 2021, driven by changes in the fair value of investment securities, derivatives, and financial instruments held under fair value option resulting primarily from changes in interest rates. Non-interest income was a gain of \$273 million for the year ended December 31, 2020.

Non-interest expense was \$1,432 million for the year ended December 31, 2021, a decrease of \$138 million, or 9%, compared to the year ended December 31, 2020, due primarily to lower compensation and benefits expenses, lower other operating expenses, and lower other expenses.

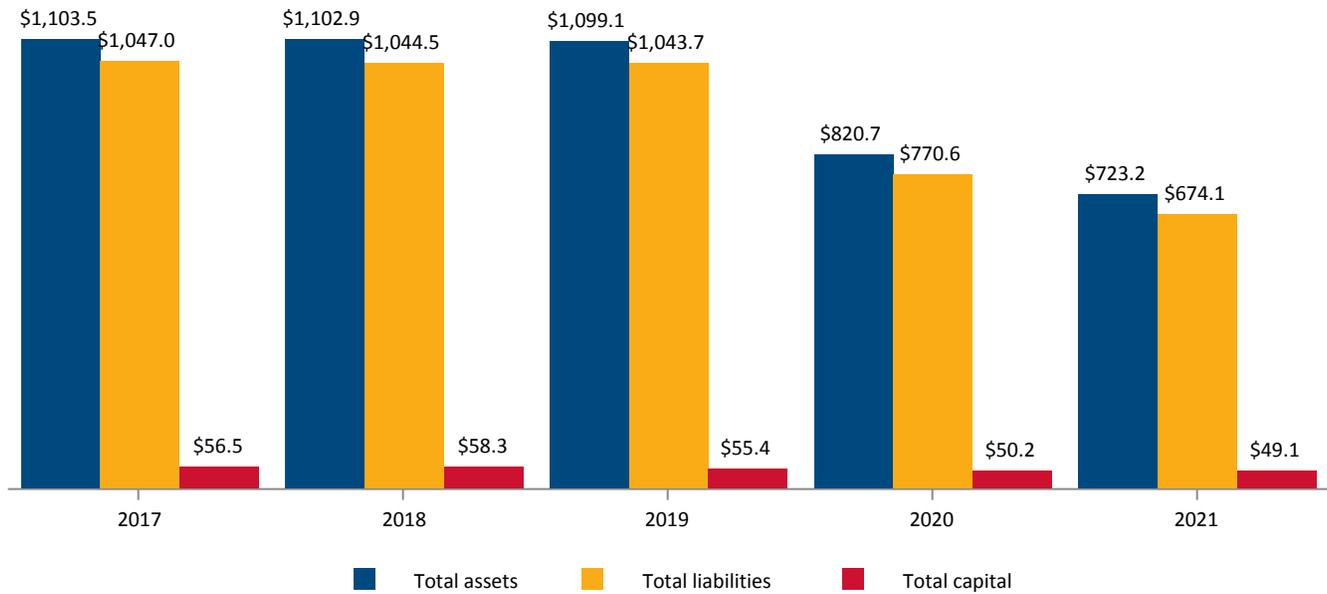
Affordable Housing Program assessments result from individual FHLBank income subject to assessment. Affordable Housing Program assessments were \$201 million for the year ended December 31, 2021, a decrease of \$114 million, or 36%, compared to the year ended December 31, 2020.

See [Combined Financial Condition](#) and [Combined Results of Operations](#) for further information.

Combined Financial Condition

The FHLBanks’ asset composition includes cash and due from banks, investments, advances, mortgage loans held for portfolio, and other assets. The FHLBanks’ liability composition includes deposits, consolidated discount notes, consolidated bonds, mandatorily redeemable capital stock, and other liabilities. The FHLBanks’ capital composition includes capital stock, retained earnings, and accumulated other comprehensive income (loss) (AOCI). Figure 6 presents the total assets, liabilities, and capital for the most recent five years.

Figure 6 - Total Assets, Liabilities, and Capital at Year-end (dollars in billions)



Figures 7 and 8 present the total assets and total liabilities and capital composition at December 31, 2021.

Figure 7 - Total Assets (dollars in billions)

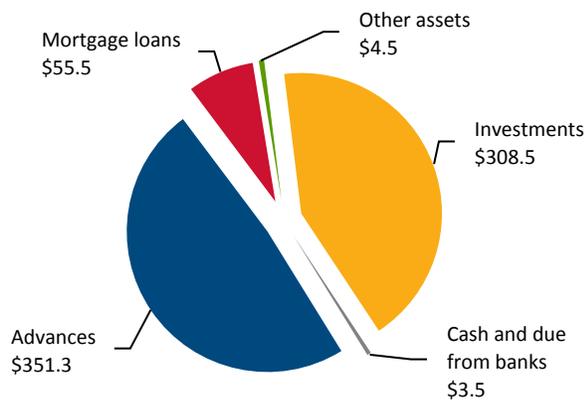
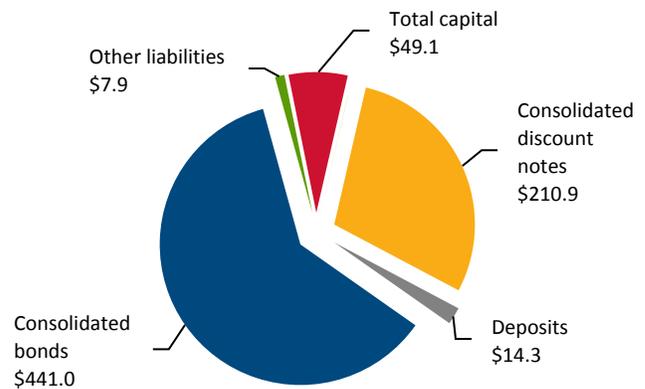


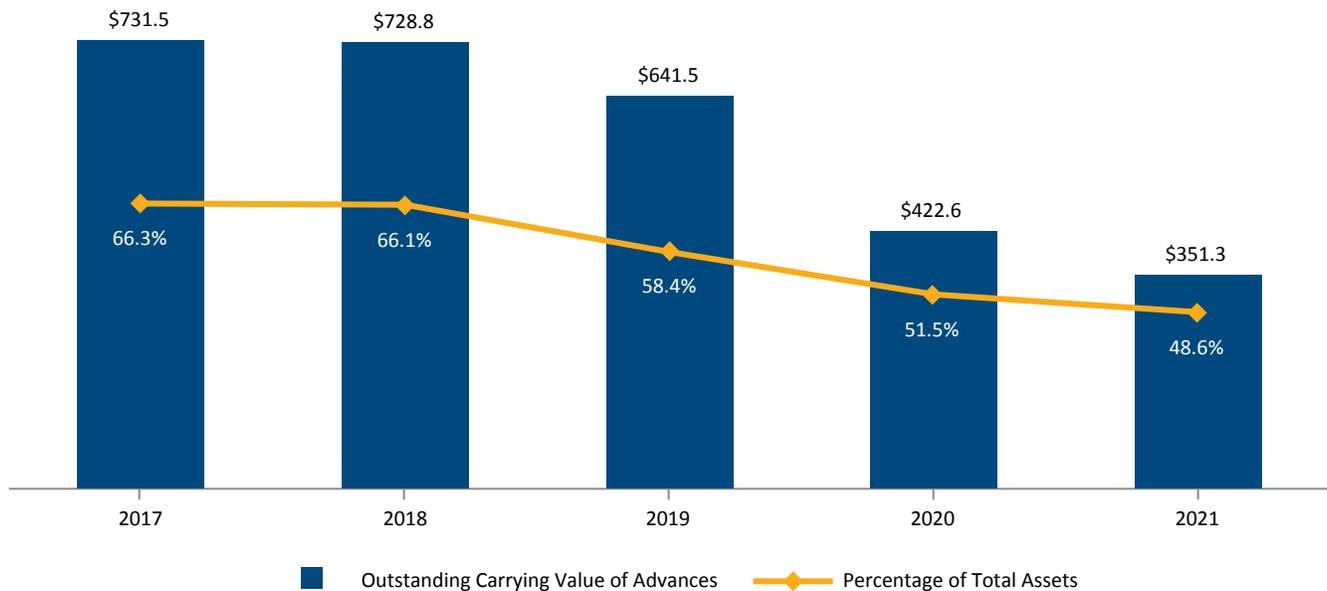
Figure 8 - Total Liabilities and Capital (dollars in billions)



Advances

The FHLBanks provide funding to members and housing associates through secured loans (advances), which may be used for residential mortgages, community investments, and other services for housing and community development. Each FHLBank makes advances based on the security of mortgage loans and other types of eligible collateral pledged by, and the creditworthiness and financial condition of, the borrowing institutions. Figure 9 presents advances for the most recent five years.

**Figure 9 - Advances Outstanding at Year-end (Carrying Value)
(dollars in billions)**



The outstanding carrying value of advances totaled \$351.3 billion at December 31, 2021, a decrease of \$71.4 billion, or 17%, from \$422.6 billion at December 31, 2020, principally attributable to those made to commercial bank members. The decrease in advances to the top 25 advance holders at each FHLBank, in aggregate, represented over 70% of the total decrease in the principal amount of advances outstanding at December 31, 2021, compared to December 31, 2020.

The FHLBanks expand and contract in asset size as the needs of member financial institutions and their communities change over time. As individuals, businesses, and state and local governments received federal stimulus payments and sought financial safety during the COVID-19 pandemic, financial institutions experienced substantial deposit growth. For example, the Federal Deposit Insurance Corporation (FDIC) reported that FDIC-insured depository institutions experienced deposit growth of \$3.3 trillion in 2020, and another \$1.9 trillion in 2021. These increases in deposits have led to reduced demand from depository members for FHLBank advances, principally those made to large depository members. While it is difficult to predict the future demand for advances and the circumstances of the individual FHLBanks vary, advances may remain at reduced levels if the level of liquidity in the financial markets and deposit levels at members remain elevated. Due to the COVID-19 pandemic, certain FHLBanks began offering temporary relief programs providing subsidized advances and grants, and \$3.6 billion and \$4.9 billion of these advances were outstanding at December 31, 2021 and December 31, 2020.

The percentage of members with outstanding advances was 46% at December 31, 2021, compared to 52% at December 31, 2020. Figures 10 and 11 present the principal amount of advances by product type and by redemption term for the most recent five years.

Figure 10 - Advances by Product Type at Year-end (dollars in billions)

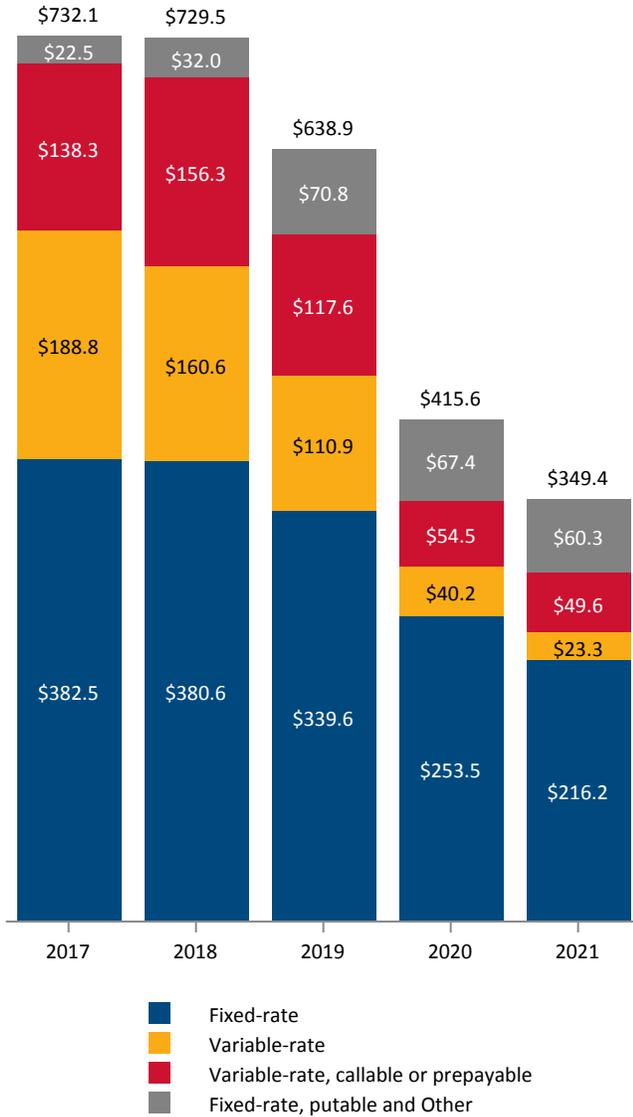


Figure 11 - Advances by Redemption Term at Year-end (dollars in billions)



Table 8 presents advances outstanding by product type and redemption term, some of which include advances that contain embedded put or call options. A member can either sell an embedded option to an FHLBank or purchase an embedded option from an FHLBank. (See [Note 5 - Advances](#) to the accompanying combined financial statements for additional information on puttable and callable advances and their potential effects on advance redemptions.)

Table 8 - Types of Advances by Redemption Term

(dollars in millions)

	December 31, 2021		December 31, 2020		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Fixed-rate						
Due in 1 year or less	\$ 119,061	34.1 %	\$ 139,146	33.5 %	\$ (20,085)	(14.4)%
Due after 1 year through 3 years	48,628	13.9 %	59,445	14.3 %	(10,817)	(18.2)%
Due after 3 years through 5 years	30,520	8.7 %	36,389	8.8 %	(5,869)	(16.1)%
Due after 5 years through 15 years	16,847	4.8 %	17,205	4.2 %	(358)	(2.1)%
Thereafter	1,152	0.3 %	1,303	0.3 %	(151)	(11.6)%
Total principal amount	216,208	61.8 %	253,488	61.1 %	(37,280)	(14.7)%
Fixed-rate, puttable						
Due in 1 year or less	300	0.1 %	215	0.1 %	85	39.5 %
Due after 1 year through 3 years	2,977	0.9 %	1,892	0.5 %	1,085	57.3 %
Due after 3 years through 5 years	2,330	0.7 %	4,151	1.0 %	(1,821)	(43.9)%
Due after 5 years through 15 years	27,555	7.9 %	28,154	6.8 %	(599)	(2.1)%
Thereafter	—	—	—	—	—	— %
Total principal amount	33,162	9.6 %	34,412	8.4 %	(1,250)	(3.6)%
Variable-rate						
Due in 1 year or less	16,428	4.7 %	31,109	7.5 %	(14,681)	(47.2)%
Due after 1 year through 3 years	3,304	0.9 %	7,621	1.8 %	(4,317)	(56.6)%
Due after 3 years through 5 years	2,084	0.6 %	412	0.1 %	1,672	405.8 %
Due after 5 years through 15 years	1,530	0.4 %	30	—	1,500	5,000.0 %
Thereafter	—	—	1,000	0.2 %	(1,000)	(100.0)%
Total principal amount	23,346	6.6 %	40,172	9.6 %	(16,826)	(41.9)%
Variable-rate, callable or prepayable(1)						
Due in 1 year or less	6,220	1.8 %	7,526	1.8 %	(1,306)	(17.4)%
Due after 1 year through 3 years	22,191	6.4 %	17,646	4.2 %	4,545	25.8 %
Due after 3 years through 5 years	14,866	4.3 %	16,617	3.9 %	(1,751)	(10.5)%
Due after 5 years through 15 years	5,814	1.7 %	12,054	2.9 %	(6,240)	(51.8)%
Thereafter	557	0.2 %	703	0.2 %	(146)	(20.8)%
Total principal amount	49,648	14.4 %	54,546	13.0 %	(4,898)	(9.0)%
Other(2)						
Due in 1 year or less	3,090	0.9 %	4,215	1.0 %	(1,125)	(26.7)%
Due after 1 year through 3 years	5,674	1.6 %	8,214	1.9 %	(2,540)	(30.9)%
Due after 3 years through 5 years	6,432	1.8 %	7,058	1.7 %	(626)	(8.9)%
Due after 5 years through 15 years	11,690	3.3 %	13,400	3.3 %	(1,710)	(12.8)%
Thereafter	133	—	138	—	(5)	(3.6)%
Total principal amount	27,019	7.6 %	33,025	7.9 %	(6,006)	(18.2)%
Overdrawn and overnight deposit accounts						
	—	—	3	—	(3)	(100.0)%
Total principal amount advances	349,383	100.0 %	415,646	100.0 %	\$ (66,263)	(15.9)%
Other adjustments, net(3)						
	1,895		6,993			
Total advances	\$ 351,278		\$ 422,639			

(1) Prepayable advances are those advances that may be contractually prepaid by the borrower on specified dates without incurring prepayment or termination fees.

(2) Includes hybrid, fixed-rate amortizing/mortgage matched, convertible, fixed-rate callable or prepayable, and other advances.

(3) Consists of hedging and fair value option valuation adjustments and unamortized premiums, discounts, and commitment fees.

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Table 9 presents the principal amount of advances indexed to a variable interest rate at December 31, 2021 and 2020. (See [Quantitative and Qualitative Disclosures about Market Risk](#) for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 9 - Advances Indexed to a Variable Interest Rate⁽¹⁾

(dollars in millions)

	December 31, 2021	December 31, 2020
LIBOR	\$ 15,142	44,449
SOFR	13,755	6,149
Other ⁽²⁾	45,268	45,611
Total principal amount of advances indexed to a variable interest rate	\$ 74,165	\$ 96,209

(1) Includes fixed-rate advances that have cap/floor optionality linked to an interest-rate Index.

(2) Consists primarily of advances indexed to consolidated obligation yields.

Table 10 presents cash flows related to advance originations and advance repayments. During the year ended December 31, 2021, advance repayments exceeded originations, resulting in lower advances outstanding. Both the advance originations and advance repayments decreased during the year ended December 31, 2021, compared to the year ended December 31, 2020, due to a decrease in short-term advance activity, driven by elevated levels of liquidity in the financial markets and elevated deposits at depository member institutions.

Table 10 - Advance Originations and Repayments

(dollars in millions)

	Year Ended December 31,			Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Advances originated	\$ 3,078,054	\$ 4,345,823	\$ 8,599,011	\$ (1,267,769)	\$ (4,253,188)
Advances repaid	3,144,356	4,569,177	8,689,592	(1,424,821)	(4,120,415)
Net change	\$ (66,302)	\$ (223,354)	\$ (90,581)		

The FHLBanks make advances primarily to their members. At December 31, 2021, advances to depository members (commercial banks, savings institutions, and credit unions) decreased by 24% while advances to insurance company members (excluding captive insurance companies) grew by 4% compared to December 31, 2020. The decrease in advances to depository members was driven by elevated levels of liquidity in the financial markets and elevated deposits at depository member institutions. Table 11 presents the principal amount of advances by type of borrower and member.

Table 11 - Advances by Type of Borrower and Member

(dollars in millions)

	December 31, 2021		December 31, 2020	
	Principal Amount	Number of Members	Principal Amount	Number of Members
Commercial bank members	\$ 118,271	1,908	\$ 177,387	2,231
Insurance company members	117,237	223	113,249	220
Savings institution members	58,903	373	64,400	428
Credit union members	40,711	486	43,253	559
Community development financial institution members	290	29	297	29
Total	335,412	3,019	398,586	3,467
Non-members ⁽¹⁾	12,383		15,976	
Housing associates	1,588		1,084	
Total principal amount	\$ 349,383		\$ 415,646	
Total members		6,577		6,697

(1) Includes \$11.3 billion and \$11.7 billion of principal amount of advances outstanding to captive insurance companies at December 31, 2021 and 2020, which had their memberships terminated no later than February 19, 2021. The December 31, 2020 presentation has been revised to include captive insurance companies within Non-members to conform to the December 31, 2021 presentation.

Figures 12 and 13 present the percentage of principal amount of advances by type of borrower and percentage of member borrowers by type of member at December 31, 2021. Commercial banks and insurance companies (excluding captive insurance companies) represented the largest segments of borrowers, each with 34% of the total principal amount of advances outstanding at December 31, 2021, compared to 43% and 27% at December 31, 2020.

Figure 12 - Percentage of Principal Amount of Advances by Type of Borrower

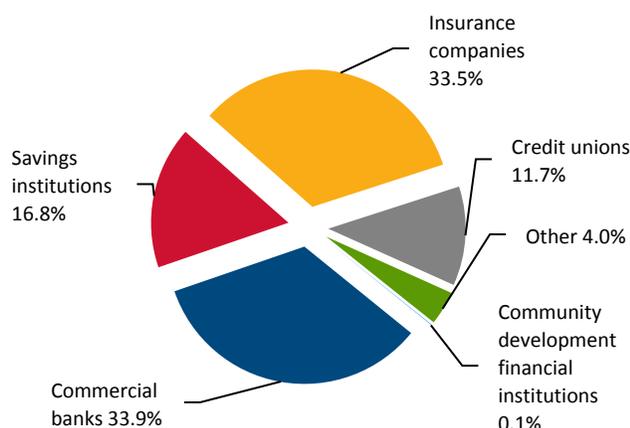


Figure 13 - Percentage of Member Borrowers by Type of Member

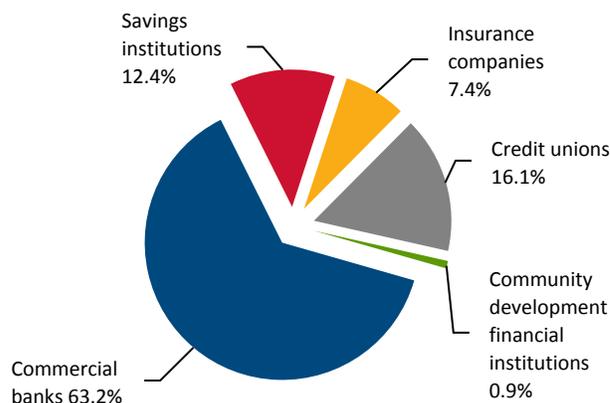


Table 12 presents the FHLBanks' top 10 advance holding borrowers by holding company on a combined basis based on the principal amount of advances outstanding at December 31, 2021. The percentage of total advances for each holding company was computed by dividing the principal amount of advances by subsidiaries of that holding company by the principal amount of total combined advances. These percentage concentrations do not represent borrowing concentrations in an individual FHLBank. The top 10 advance holding borrowers by holding company represented 26% of the total principal amount of advances outstanding at December 31, 2021, compared to 27% at December 31, 2020.

Table 12 - Top 10 Advance Holding Borrowers by Holding Company at December 31, 2021

(dollars in millions)

Holding Company Name(1)	FHLBank Districts(2)	Principal Amount	Percentage of Total Principal Amount of Advances
MetLife, Inc.	New York	\$ 15,750	4.5 %
New York Community Bancorp, Inc.	New York	15,105	4.3 %
JPMorgan Chase & Co.	Chicago, Des Moines, San Francisco	11,089	3.2 %
TIAA	Atlanta, New York	9,101	2.6 %
Midland Financial Co.	Topeka	9,045	2.6 %
Bank of America Corporation	Atlanta, San Francisco, Boston, Des Moines	7,840	2.2 %
Equitable Holdings, Inc.	New York	6,643	1.9 %
Ally Financial Inc.	Pittsburgh	6,275	1.8 %
Pentagon Federal Credit Union	Atlanta	5,889	1.7 %
Sammons Enterprises, Inc. Employee Stock Ownership Trust	Des Moines, Indianapolis	5,584	1.6 %
		\$ 92,321	26.4 %

(1) Holding company information was obtained from the Federal Reserve System's web site, the National Information Center (NIC), and SEC filings. The NIC is a central repository of data about banks and other institutions for which the Federal Reserve System has a supervisory, regulatory, or research interest, including both domestic and foreign banking organizations operating in the United States.

(2) At December 31, 2021, each holding company had subsidiaries with advance borrowings in these FHLBank districts.

Table 13 presents information on the five largest borrowers from each FHLBank at December 31, 2021. The information presented on borrowings in Table 13 is for individual FHLBank advance holding borrowers. The data is not aggregated to the holding-company level. Some of the institutions listed may be affiliates of the same holding company, and some of the institutions listed may have affiliates that are advance holding borrowers that are not listed in the table. Each FHLBank describes its risk management policies, including disclosures about its concentration risk, if any, in its periodic reports filed with the SEC. (See [Explanatory Statement about Federal Home Loan Banks Combined Financial Report](#).)

Table 13 - Top 5 Advance Holding Borrowers by FHLBank at December 31, 2021

(dollars in millions)

District	Name	Holding Company Name(1)	Principal Amount	Percentage of FHLBank Total Principal Amount of Advances(2)
Boston	Massachusetts Mutual Life Insurance Company		\$ 1,500	12.1 %
	Voya Retirement Insurance and Annuity Company		925	7.5 %
	Hingham Institution for Savings		665	5.4 %
	Salem Five Cents Savings Bank		580	4.7 %
	People's United Bank, National Association		563	4.6 %
			\$ 4,233	34.3 %
New York	New York Community Bank	New York Community Bancorp, Inc.	\$ 15,105	21.2 %
	Metropolitan Life Insurance Company	MetLife, Inc.	14,745	20.7 %
	Equitable Financial Life Insurance Company	Equitable Holdings, Inc.	6,643	9.3 %
	Citibank, N.A.		5,250	7.4 %
	Investors Bank(3)		3,075	4.3 %
			\$ 44,818	62.9 %
Pittsburgh	Ally Bank	Ally Financial Inc.	\$ 6,275	44.6 %
	First National Bank of Pennsylvania		1,030	7.3 %
	Customers Bank		700	5.0 %
	American Heritage Federal Credit Union		505	3.6 %
	Brighthouse Life Insurance Company (DE)		500	3.6 %
			\$ 9,010	64.1 %
Atlanta	Bank of America, National Association	Bank of America Corporation	\$ 7,506	16.7 %
	TIAA, FSB	TIAA	6,946	15.5 %
	Pentagon Federal Credit Union	Pentagon Federal Credit Union	5,889	13.1 %
	Navy Federal Credit Union		4,625	10.3 %
	BankUnited, National Association		1,905	4.2 %
			\$ 26,871	59.8 %
Cincinnati	U.S. Bank National Association(3)		\$ 3,272	14.3 %
	Third Federal Savings and Loan Association of Cleveland		3,179	13.9 %
	Protective Life Insurance Company		2,800	12.2 %
	Nationwide Life Insurance Company		2,702	11.8 %
	Western-Southern Life Assurance Company(3)		1,487	6.5 %
			\$ 13,440	58.7 %

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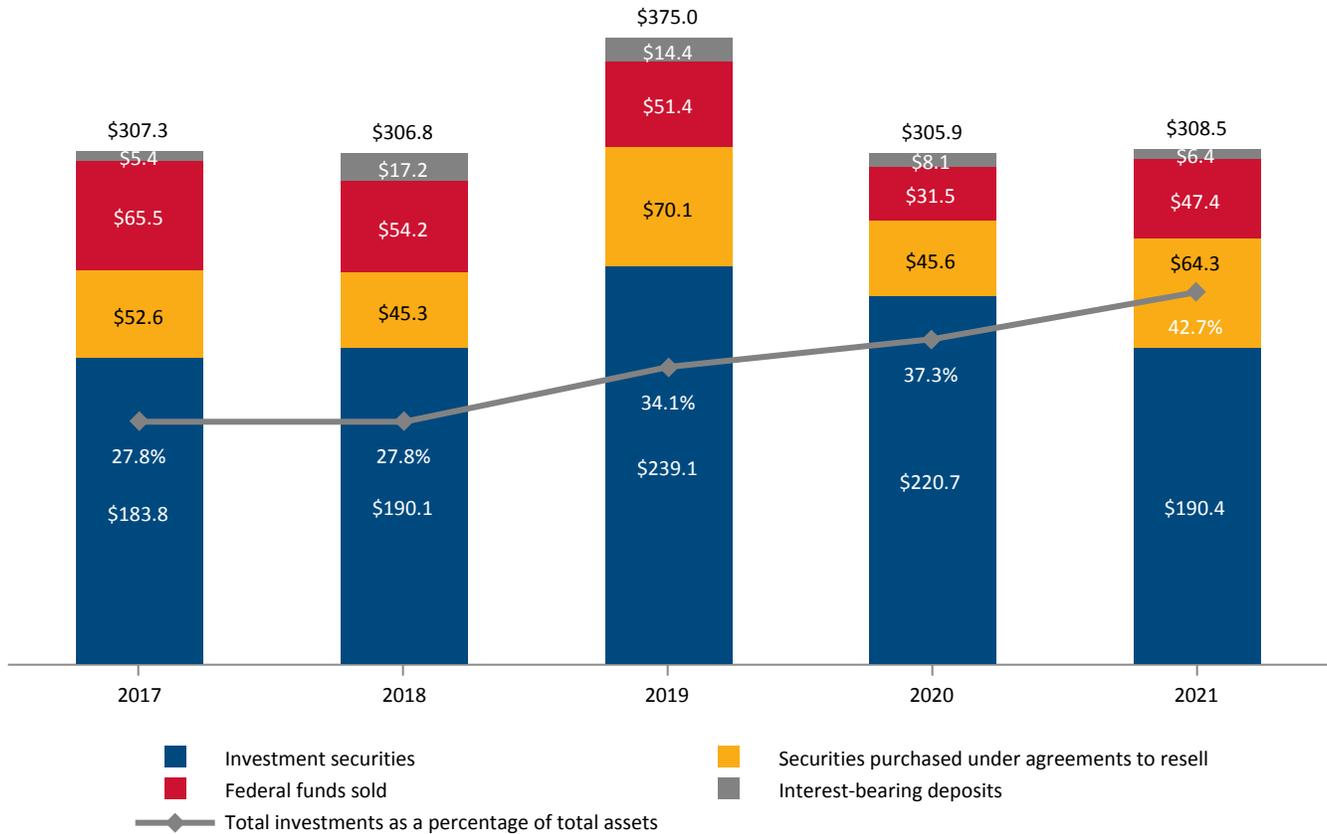
District	Name	Holding Company Name(1)	Principal Amount	Percentage of FHLBank Total Principal Amount of Advances(2)
Indianapolis	The Lincoln National Life Insurance Company		\$ 3,130	11.5 %
	Flagstar Bank, FSB(3)		3,000	11.0 %
	Jackson National Life Insurance Company		2,017	7.4 %
	Old National Bank		1,903	7.0 %
	Forethought Life Insurance Company		1,592	5.8 %
			\$ 11,642	42.7 %
Chicago	JPMorgan Chase Bank, National Association	JPMorgan Chase & Co.	\$ 11,000	23.1 %
	The Northern Trust Company		3,505	7.3 %
	BMO Harris Bank, National Association		3,000	6.3 %
	State Farm Mutual Automobile Insurance Company		2,515	5.3 %
	The Northwestern Mutual Life Insurance Company		2,051	4.3 %
			\$ 22,071	46.3 %
Des Moines	EquiTrust Life Insurance Company		\$ 4,300	9.7 %
	Principal Life Insurance Company		4,250	9.6 %
	Midland National Life Insurance Company	Sammons Enterprises, Inc. Employee Stock Ownership Trust	3,073	7.0 %
	Transamerica Life Insurance Company		2,995	6.8 %
	Athene Annuity and Life Company		2,381	5.4 %
			\$ 16,999	38.5 %
Dallas	American General Life Insurance Company		\$ 3,148	12.9 %
	Texas Capital Bank, National Association		2,200	9.0 %
	Life Insurance Company of the Southwest		2,049	8.4 %
	NexBank SSB		1,395	5.7 %
	Simmons First National Bank		1,306	5.4 %
			\$ 10,098	41.4 %
Topeka	MidFirst Bank	Midland Financial Co.	\$ 9,045	38.6 %
	United of Omaha Life Insurance Company		1,598	6.8 %
	Capitol Federal Savings Bank		1,590	6.8 %
	Security Life of Denver Insurance Company		1,445	6.2 %
	Colorado Federal Savings Bank		745	3.2 %
			\$ 14,423	61.6 %
San Francisco	First Republic Bank		\$ 3,700	21.9 %
	MUFG Union Bank, National Association		2,050	12.2 %
	First Technology Federal Credit Union(3)		1,819	10.8 %
	Luther Burbank Savings(3)		752	4.5 %
	Pacific Premier Bank		550	3.3 %
			\$ 8,871	52.7 %

- (1) The holding company name is only shown for each Top 5 advance holding borrower that has its holding company listed in Table 12 - Top 10 Advance Holding Borrowers by Holding Company at December 31, 2021.
- (2) For consistency with the individual FHLBank's presentation of its Top 5 advance holders at December 31, 2021, amounts used to calculate percentages of FHLBank advances may be based on numbers in thousands. Accordingly, recalculations using the amounts in millions as presented in Table 13 may not produce the same results.
- (3) Indicates that an officer or director of the member was an FHLBank director within that district at December 31, 2021.

Investments

The FHLBanks maintain investment portfolios for liquidity purposes and to generate additional earnings. The income from these investment portfolios also bolsters the FHLBanks’ capacity to support affordable housing and community investment. The FHLBanks invest in investment-quality securities to mitigate credit risk inherent in these portfolios. FHFA regulations prohibit the FHLBanks from investing in certain types of securities and limit the FHLBanks’ investment in MBS and ABS. (See [Risk Management - Credit Risk - Investments](#) for additional information regarding the regulatory restrictions on investments.) Figure 14 presents total investments for the most recent five years.

**Figure 14 - Total Investments at Year-end (Carrying Value)
(dollars in billions)**



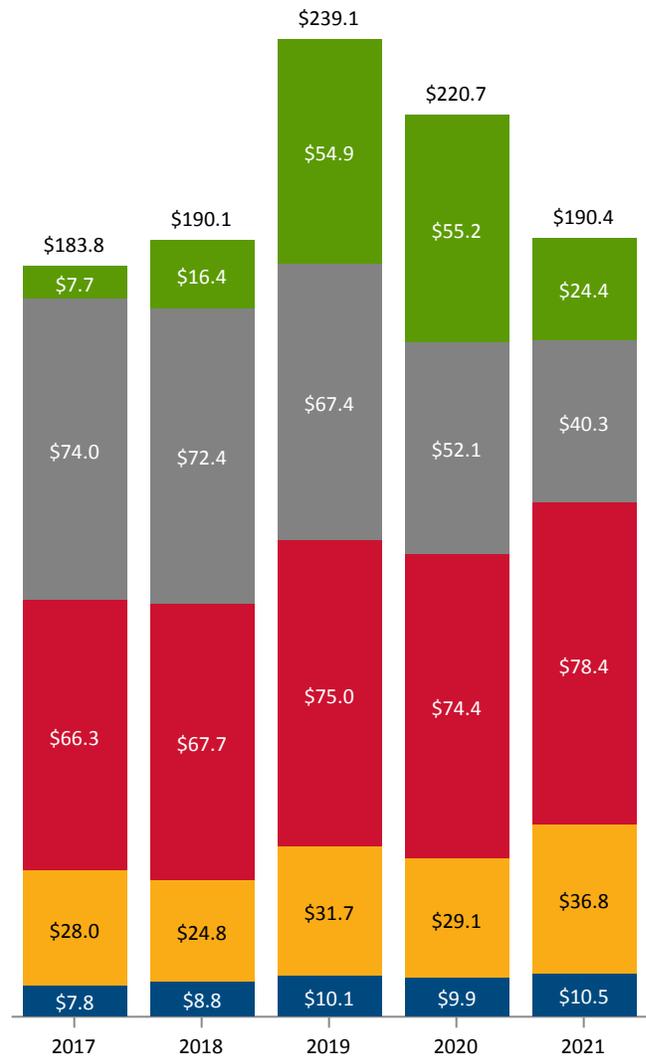
Total investments, net was \$308.5 billion at December 31, 2021, an increase of \$2.6 billion, or 1%, from \$305.9 billion at December 31, 2020. The FHLBanks classify investment securities as held-to-maturity (HTM), available-for-sale (AFS), or trading securities. Figure 15 presents the composition of investment securities by product type, and Figure 16 presents AFS and HTM securities by contractual maturity and trading securities, for the most recent five years.

Figure 15 - Investment Securities by Product Type at Year-end (Carrying Value) (dollars in billions)



- Mortgage-backed securities
- Non-mortgage-backed securities

Figure 16 - AFS and HTM Securities by Contractual Maturity and Trading Securities at Year-end (Carrying Value) (dollars in billions)



- AFS and HTM - Due in 1 year or less
- AFS and HTM - Due after 1 year through 5 years
- AFS and HTM - Due after 5 years through 10 years
- AFS and HTM - Due after 10 years
- Trading Securities

The FHLBanks maintain short-term investment portfolios, the proceeds of which may provide funds to meet the credit needs of their members and to maintain liquidity. These portfolios may include:

- interest-bearing deposits;
- securities purchased under agreements to resell;
- federal funds sold;
- certificates of deposit;
- U.S. Treasury obligations;
- Other U.S. obligations; and
- GSE obligations.

The yield earned on these short-term investments is highly correlated with short-term market interest rates. At December 31, 2021, the FHLBanks continued to maintain significant short-term investment balances as part of their ongoing investment strategy and to satisfy liquidity needs. (See [Liquidity and Capital Resources](#) for further discussion related to liquidity management.)

The FHLBanks maintain long-term investment portfolios as an additional source of liquidity and to earn interest income. These investments generally provide the FHLBanks with higher returns than those available on short-term investments. These portfolios may include:

- U.S. Treasury obligations;
- Other U.S. obligations;
- GSE obligations;
- Agency obligations; and
- Other MBS and ABS.

Table 14 presents the composition of AFS and HTM securities by year of contractual maturity and also presents the weighted-average yields of AFS and HTM securities at December 31, 2021 and 2020.

Table 14 - Total AFS and HTM Securities

(dollars in millions)

	December 31,					
	2021				2020	
	Due in 1 year or less	Due after 1 year through 5 years	Due after 5 years through 10 years	Due after 10 years	Net Carrying Value(1)	Net Carrying Value(1)
Available-for-Sale Securities						
Available-for-sale non-mortgage-backed securities						
U.S. Treasury obligations	\$ 5,027	\$ 8,857	\$ 9,998	\$ —	\$ 23,882	\$ 8,529
Other U.S. obligations	123	1,443	465	872	2,903	3,636
GSE and Tennessee Valley Authority obligations	2,237	5,219	1,992	929	10,377	11,893
State or local housing agency obligations	27	116	289	1,333	1,765	1,074
Federal Family Education Loan Program ABS(2)	—	—	—	2,772	2,772	3,034
Other	57	322	350	—	729	777
Total available-for-sale non-mortgage-backed securities	7,471	15,957	13,094	5,906	42,428	28,943
Available-for-sale mortgage-backed securities(2)						
U.S. obligations single-family	—	—	—	3,577	3,577	4,451
U.S. obligations multifamily	—	—	—	541	541	47
GSE single-family	—	26	167	4,718	4,911	5,474
GSE multifamily	521	12,203	46,625	5,801	65,150	61,920
Private-label	—	—	—	1,804	1,804	2,288
Total available-for-sale mortgage-backed securities	521	12,229	46,792	16,441	75,983	74,180
Total available-for-sale securities	\$ 7,992	\$ 28,186	\$ 59,886	\$ 22,347	\$ 118,411	\$ 103,123
Held-to-Maturity Securities						
Held-to-maturity non-mortgage-backed securities						
Certificates of deposit	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 750
U.S. Treasury obligations	47	—	—	—	47	41
Other U.S. obligations	1,223	27	259	—	1,509	1,101
GSE and Tennessee Valley Authority obligations	435	1,103	142	144	1,824	2,624
State or local housing agency obligations	1	12	198	311	522	1,491
Total held-to-maturity non-mortgage-backed securities	1,706	1,142	599	455	3,902	6,007
Held-to-maturity mortgage-backed securities(2)						
U.S. obligations single-family	—	3	3	4,171	4,177	4,466
GSE single-family	—	63	176	11,527	11,766	19,888
GSE multifamily	760	7,452	17,690	1,527	27,429	31,451
Private-label	—	1	28	369	398	538
Total held-to-maturity mortgage-backed securities	760	7,519	17,897	17,594	43,770	56,343
Total held-to-maturity securities	\$ 2,466	\$ 8,661	\$ 18,496	\$ 18,049	\$ 47,672	\$ 62,350
Weighted-average yields on(3):						
Available-for-sale securities	1.14 %	1.79 %	2.38 %	2.39 %		
Held-to-maturity securities	1.19 %	1.37 %	1.10 %	1.61 %		

- (1) The net carrying values for AFS and HTM securities includes allowance for credit losses. The net carrying value for HTM securities also includes adjustments for non-credit related losses recognized in AOCI.
- (2) MBS and Federal Family Education Loan Program ABS are presented by contractual maturity. However, their expected maturities will likely differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment fees.
- (3) The weighted average yields on AFS and HTM securities are calculated as the sum of each debt security using the period end balances (less any applicable interbank adjustments) multiplied by the coupon rate adjusted by the effect of amortization and accretion of premiums and discounts, divided by the total debt securities in the applicable AFS or HTM portfolio. The result is then multiplied by 100 to express it as a percentage.

The interest-rate and prepayment risks associated with investment securities are managed through a combination of debt issuance and derivatives. (See [Note 7 - Derivatives and Hedging Activities](#) to the accompanying combined financial statements and [Quantitative and Qualitative Disclosure About Market Risk - Use of Derivatives to Manage Interest-Rate Risk](#) for additional information.) Figure 17 summarizes the interest-rate payment terms of investment securities by product type for the most recent five years, with trading securities presented at fair value and AFS and HTM securities presented at amortized cost.

Figure 17 - Interest-Rate Payment Terms of Investment Securities by Product Type at Year-end (dollars in billions)

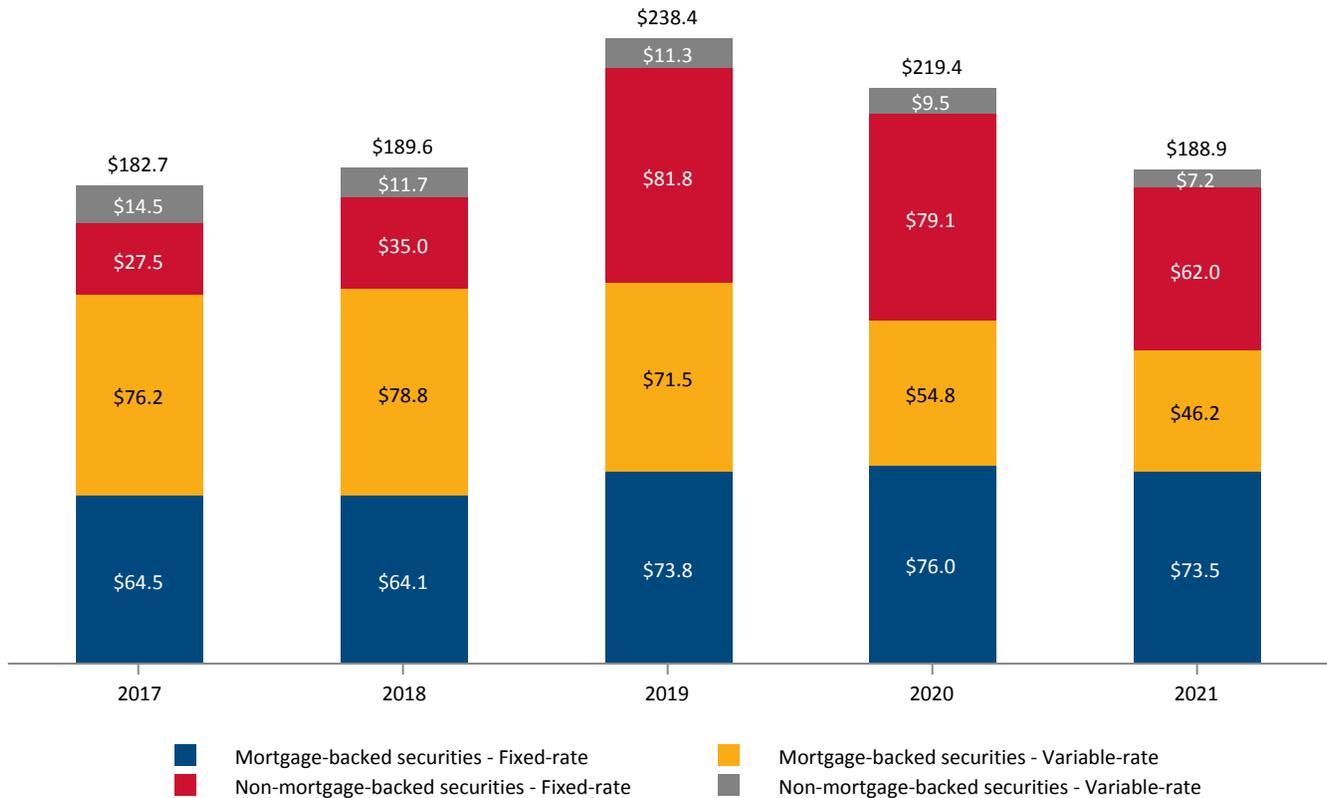


Table 15 presents the interest-rate payment terms of investment securities at December 31, 2021 and 2020.

Table 15 - Interest-Rate Payment Terms of Investment Securities

(dollars in millions)

	December 31, 2021	December 31, 2020
Trading Securities at Fair Value		
Trading non-mortgage-backed securities		
Fixed-rate	\$ 23,230	\$ 51,711
Variable-rate	—	2,218
Total trading non-mortgage-backed securities	23,230	53,929
Trading mortgage-backed securities		
Fixed-rate	1,085	1,235
Variable-rate	39	54
Total trading mortgage-backed securities	1,124	1,289
Total trading securities	\$ 24,354	\$ 55,218
Available-for-Sale Securities at Amortized Cost		
Available-for-sale non-mortgage-backed securities		
Fixed-rate	\$ 36,260	\$ 23,935
Variable-rate	5,798	4,643
Total available-for-sale non-mortgage-backed securities	42,058	28,578
Available-for-sale mortgage-backed securities		
Fixed-rate	58,948	57,323
Variable-rate	15,816	15,870
Total available-for-sale mortgage-backed securities	74,764	73,193
Total available-for-sale securities	\$ 116,822	\$ 101,771
Held-to-Maturity Securities at Amortized Cost		
Held-to-maturity non-mortgage-backed securities		
Fixed-rate	\$ 2,508	\$ 3,411
Variable-rate	1,394	2,596
Total held-to-maturity non-mortgage-backed securities	3,902	6,007
Held-to-maturity mortgage-backed securities		
Fixed-rate	13,447	17,473
Variable-rate	30,329	38,884
Total held-to-maturity mortgage-backed securities	43,776	56,357
Total held-to-maturity securities	\$ 47,678	\$ 62,364

Table 16 presents the principal amount of variable-rate investment securities by interest-rate index at December 31, 2021 and 2020. (See [Quantitative and Qualitative Disclosures about Market Risk](#) for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 16 - Variable-Rate Investment Securities by Interest-Rate Index

(dollars in millions)

	December 31, 2021			December 31, 2020		
	Non-mortgage- backed securities	Mortgage-backed securities	Total	Non-mortgage- backed securities	Mortgage-backed securities	Total
LIBOR	\$ 5,089	\$ 39,338	\$ 44,427	\$ 6,886	\$ 53,895	\$ 60,781
SOFR	861	6,679	7,540	75	887	962
Other(1)	1,235	293	1,528	2,490	408	2,898
Total principal amount of variable- rate investment securities	\$ 7,185	\$ 46,310	\$ 53,495	\$ 9,451	\$ 55,190	\$ 64,641

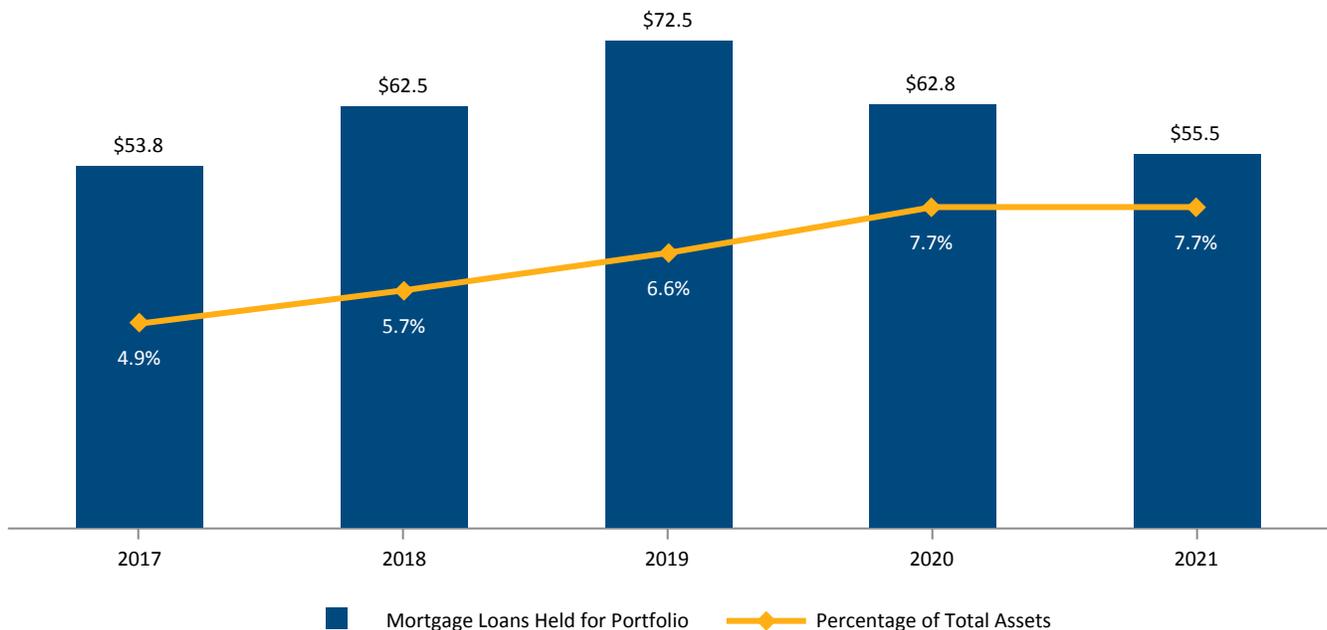
(1) Consists primarily of investments indexed to Treasury rates.

Limits on Certain Investments. FHFA regulations prohibit an FHLBank from purchasing MBS/ABS if its investment in these securities exceeds 300% of that FHLBank’s previous month-end regulatory capital on the day it intends to purchase the securities. During the year ended December 31, 2021, each of the FHLBanks was in compliance with this regulatory requirement at the time of its respective securities purchases. However, at December 31, 2021, the FHLBank of Indianapolis exceeded the 300% regulatory limit and was precluded from purchasing additional MBS/ABS investments until its MBS/ABS to total regulatory capital percentage declined below 300%. The FHLBank of Indianapolis was not required by the FHFA to sell any previously purchased securities. On a combined basis, the FHLBanks’ percentage of MBS/ABS (net of regulatory excluded MBS) was 252% of total combined regulatory capital at December 31, 2021.

Mortgage Loans Held for Portfolio

An FHLBank may purchase fixed-rate mortgage loans to support the FHLBank’s housing mission, provide an additional source of liquidity to FHLBank members, diversify its investments, and generate additional earnings. The two primary programs are the Mortgage Purchase Program (MPP) and the Mortgage Partnership Finance® (MPF®) Program. In addition, the FHLBank of New York implemented the Mortgage Asset Program (MAP®) in order to replace its participation in the MPF Program beginning in March 2021. (See [Business - Mortgage Loans](#) and [Risk Management - Credit Risk - Mortgage Loans Held for Portfolio](#) for more information.) Figure 18 presents mortgage loans held for portfolio (designated as held for investment for accounting purposes) for the most recent five years.

**Figure 18 - Mortgage Loans Held for Portfolio at Year-end (Carrying Value)
(dollars in billions)**



Mortgage loans, excluding the allowance for credit losses, were \$55.5 billion at December 31, 2021, a decrease of \$7.4 billion, or 12%, from \$62.9 billion at December 31, 2020, driven primarily by prepayments resulting from the low mortgage interest-rate environment and reduced mortgage loan purchase volume. Principal repayments of \$21.0 billion outpaced mortgage loan purchases of \$14.2 billion. The allowance for credit losses on mortgage loans was \$23 million at December 31, 2021, a decrease of \$10 million from \$33 million at December 31, 2020. The FHLBanks utilize credit enhancements on conventional mortgage loans held for portfolio, which help to mitigate expected credit losses.

Table 17 presents mortgage loans held for portfolio outstanding by redemption term, according to their predetermined amortization schedules at December 31, 2021.

Table 17 - Mortgage Loans Held for Portfolio by Redemption Term
(dollars in millions)

Redemption Term	December 31, 2021
Due in 1 year or less	\$ 1,987
Due after 1 year through 5 years	8,380
Due after 5 years through 15 years	21,399
Thereafter	22,747
Total unpaid principal balance	54,513
Other adjustments, net(1)	1,007
Total mortgage loans held for portfolio	55,520
Allowance of credit losses on mortgage loans	(23)
Mortgage loans held for portfolio, net	\$ 55,497

(1) Consists of premiums, discounts, and hedging adjustments.

Figure 19 presents the unpaid principal balance (UPB) of mortgage loans held for portfolio by redemption term at December 31, 2021.

Figure 19 - Mortgage Loans Held for Portfolio by Redemption Term
(dollars in billions)

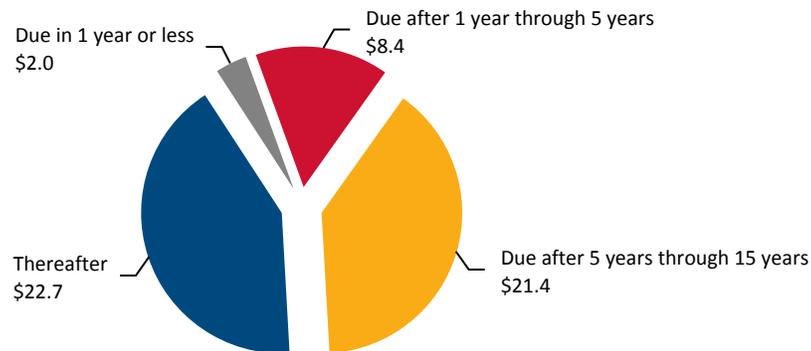


Table 18 presents metrics and ratios of mortgage loans held for portfolio. Periodically, each FHLBank evaluates the allowance for credit losses for its mortgage loans based on its policies and procedures to determine if an allowance for credit losses is necessary.

Table 18 - Mortgage Loans Held for Portfolio - Metrics and Ratios

(dollars in millions)

	December 31,	
	2021	2020
Average loans outstanding during the period (UPB)	\$ 56,498	\$ 69,361
Mortgage loans held for portfolio (UPB)	54,513	61,709
Non-accrual loans (UPB)	350	863
Allowance of credit losses on mortgage loans held for portfolio	23	33
(Charge-offs), net of recoveries	1	(8)
Ratio of charge-offs, net of recoveries to average loans outstanding during the period	— % ^(a)	0.01 %
Ratio of allowance for credit losses to mortgage loans held for portfolio	0.04 %	0.05 %
Ratio of non-accrual loans to mortgage loans held for portfolio	0.64 %	1.40 %
Ratio of allowance for credit losses to non-accrual loans	6.57 %	3.82 %

(a) Represents percentage amount that is less than 0.01%.

The FHLBanks' servicers granted a forbearance period to eligible borrowers who requested forbearance based on COVID-19 related difficulties regardless of the status of the loan at the time of the request. The amount of mortgage loans on non-accrual status, as well as those subject to forbearance due to COVID-19 relief, declined by \$513 million and \$767 million during 2021 as borrowers received modifications or past due amounts were resolved. (See [Note 1 - Summary of Significant Accounting Policies](#) and [Note 6 - Mortgage Loans](#) to the accompanying combined financial statements for more information.)

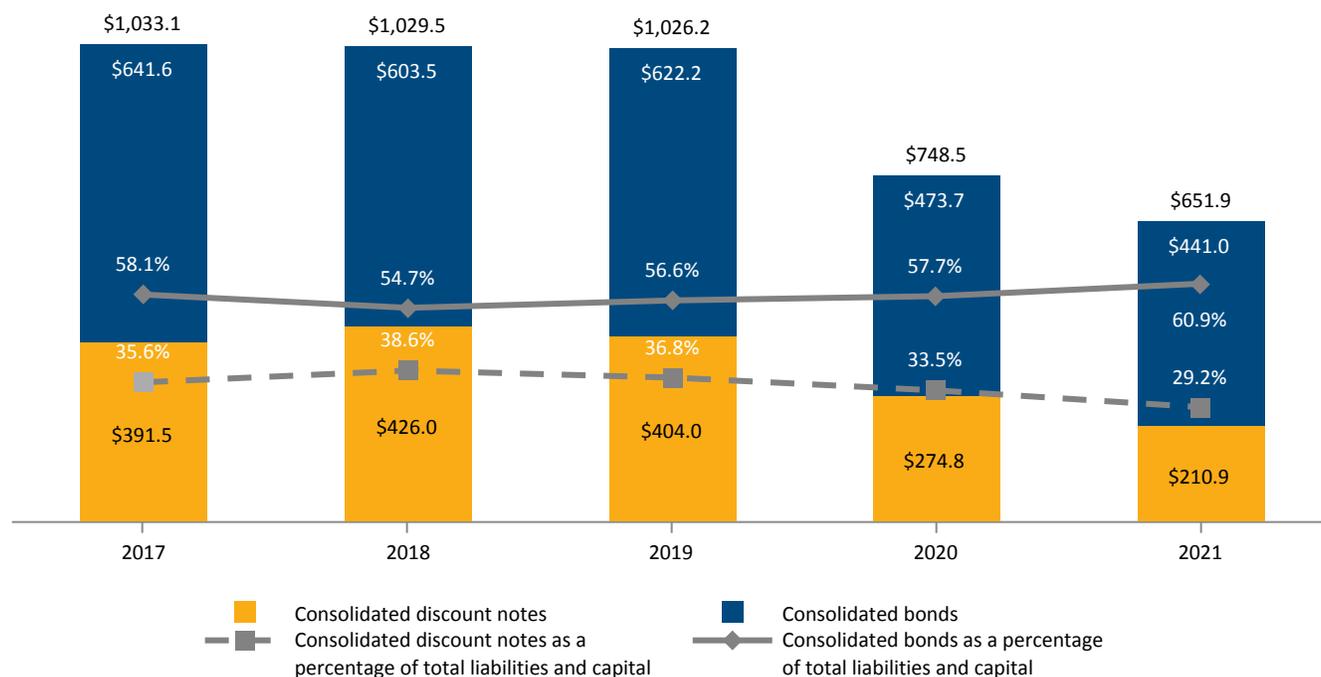
MPF Xtra[®] Conventional Mortgage Loans. In addition to mortgage loans purchased by the FHLBanks and held for portfolio, the FHLBank of Chicago also purchases eligible conventional loans from participating financial institutions (PFIs) located in its district, and in other MPF FHLBank districts under the MPF Xtra[®] product. PFIs are not required to provide credit enhancement and do not receive credit enhancement fees in connection with this off-balance sheet mortgage loan product. Upon purchase from the PFIs, the FHLBank of Chicago concurrently sells the mortgage loans to Fannie Mae. During the years ended December 31, 2021 and 2020, the FHLBank of Chicago purchased and concurrently delivered \$6.7 billion and \$13.8 billion in UPB of these loans to Fannie Mae. The FHLBank of Chicago is exposed to mortgage repurchase liability in connection with loans sold to Fannie Mae. If a loan origination representation or other warranty or covenant is breached, Fannie Mae could require the FHLBank of Chicago to repurchase the loan or provide an indemnity. If the PFI from which the FHLBank of Chicago purchased the ineligible or warrantied loan is viable, the FHLBank of Chicago can require the PFI to repurchase that MPF loan or indemnify the FHLBank of Chicago for related losses. If the PFI is not viable or does not indemnify the FHLBank of Chicago, then the FHLBank of the PFI's district indemnifies the FHLBank of Chicago. If the loan was purchased from a PFI in the FHLBank of Chicago's district, then the FHLBank of Chicago would incur losses to the extent not recovered from PFI collateral or through resolution of the failed PFI. At December 31, 2021 and 2020, there were \$25.1 billion and \$24.2 billion of off-balance sheet MPF Xtra[®] loans outstanding. During the years ended December 31, 2021 and 2020, the amount of repurchase demands associated with MPF Xtra[®] mortgage loans was not significant. (See [Business - Mortgage Loans](#) and [Legislative and Regulatory Developments](#) for more information about MPF Xtra[®] mortgage loans.)

Consolidated Obligations

Consolidated obligations consist of consolidated bonds and consolidated discount notes, which are joint and several obligations of all FHLBanks. The FHLBanks issue consolidated obligations through the Office of Finance as their agent. Consolidated obligations are the principal funding source used by the FHLBanks to make advances and to purchase mortgage loans and investments. The outstanding balance and types of consolidated obligations issued will fluctuate based on the funding requirements of the FHLBanks. The future amounts and types of consolidated obligations issued depend primarily on the demand for advances and could also be affected by

current economic conditions resulting from the COVID-19 pandemic and the timing and shape of the economic recovery. Figure 20 presents consolidated bonds and consolidated discount notes for the most recent five years.

**Figure 20 - Consolidated Obligations Outstanding at Year-end (Carrying Value)
(dollars in billions)**



The carrying value of consolidated obligations totaled \$651.9 billion at December 31, 2021, a decrease of \$96.6 billion, or 13%, from \$748.5 billion at December 31, 2020, in line with the decrease in total assets. The decrease in consolidated obligations was comprised of a 23% decrease in consolidated discount notes and a 7% decrease in consolidated bonds.

Consolidated bonds may be issued to raise short-, intermediate-, or long-term funds. Consolidated bonds are issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms that are indexed to specified indices, such as SOFR, and have maturities ranging from three months to 30 years. The carrying value of consolidated bonds was \$441.0 billion at December 31, 2021, a decrease of \$32.7 billion, or 7%, from \$473.7 billion at December 31, 2020. In addition to the decrease in the carrying value of consolidated bonds at December 31, 2021, there was a change in the mix of consolidated bonds. The principal amount of variable-rate bonds declined to \$90.1 billion at December 31, 2021, from \$249.7 billion at December 31, 2020, a decrease of \$159.6 billion, or 64%, and the principal amount of fixed-rate, callable bonds rose to \$156.6 billion at December 31, 2021, from \$37.3 billion at December 31, 2020, an increase of \$119.2 billion, or 319%, driven by the lower cost of issuing fixed-rate, callable bonds compared to alternative types of consolidated bonds during the year ended December 31, 2021. Consolidated bonds represented 68% and 63% of total consolidated obligations outstanding at December 31, 2021 and 2020.

Consolidated discount notes are issued to provide short-term funding and have a maturity range of one day to one year. They are generally issued below face value and mature at face value. A significant portion of consolidated discount note activity typically results from the refinancing of maturing discount notes. The carrying value of consolidated discount notes was \$210.9 billion at December 31, 2021, a decrease of \$63.9 billion, or 23%, from \$274.8 billion at December 31, 2020, driven by a decrease in short-term advance activity and an increase in the issuance of longer-term fixed-rate, callable consolidated bonds. Consolidated discount notes represented 32% and 37% of total consolidated obligations outstanding at December 31, 2021 and 2020.

Figures 21 and 22 present the principal amount of consolidated obligations by product type and by contractual maturity for the most recent five years.

Figure 21 - Consolidated Obligations by Product Type at Year-end (dollars in billions)

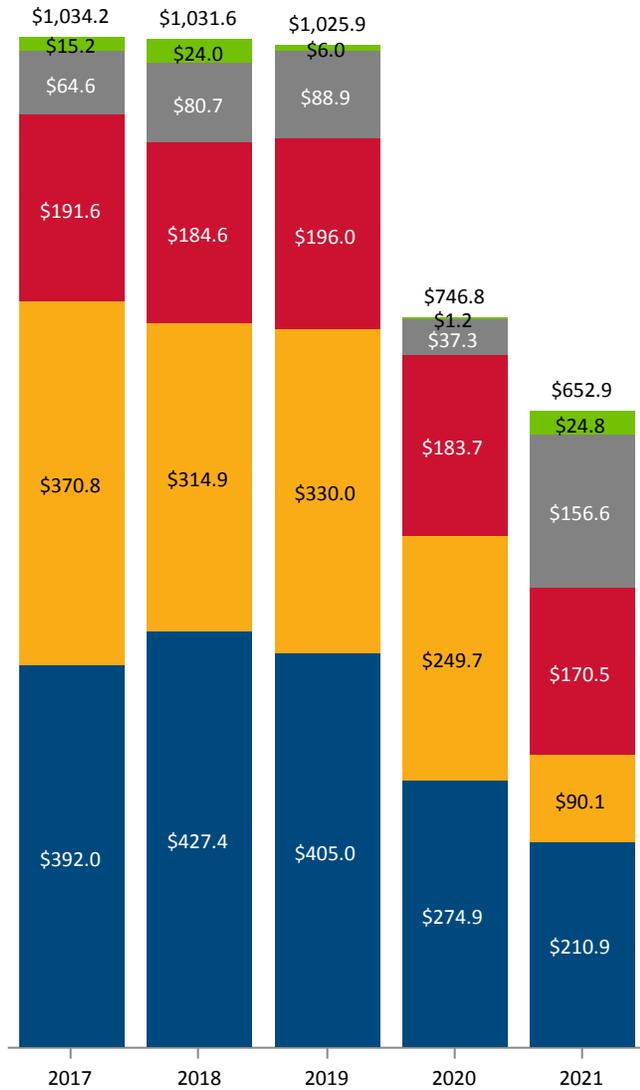
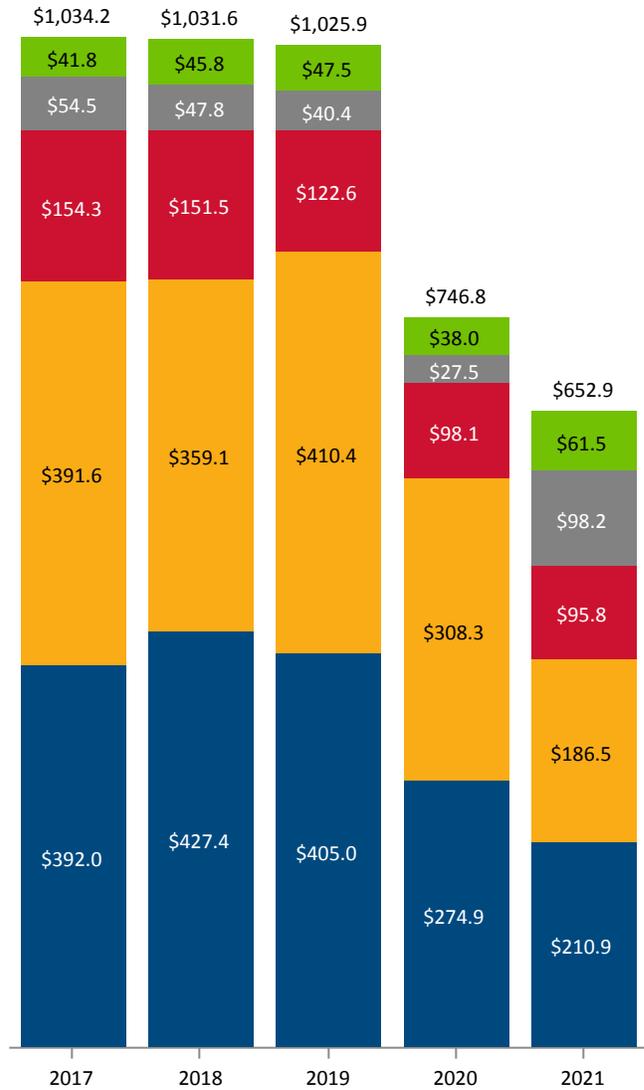


Figure 22 - Consolidated Obligations by Contractual Maturity at Year-end (dollars in billions)



- Discount notes
- Variable-rate bonds (non-capped)
- Fixed-rate, non-callable bonds
- Fixed-rate, callable bonds
- Other

- Discount notes
- Bonds due in 1 year or less
- Bonds due after 1 year through 3 years
- Bonds due after 3 years through 5 years
- Bonds due thereafter

Table 19 presents the composition of consolidated obligations by product type and by contractual maturity at December 31, 2021 and 2020.

Table 19 - Types of Consolidated Obligations by Contractual Maturity

(dollars in millions)

	December 31, 2021		December 31, 2020		Change	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Consolidated Discount Notes						
Overnight	\$ 2,050	0.3 %	\$ —	—	\$ 2,050	—
Due after 1 day through 30 days	75,231	11.5 %	99,563	13.3 %	(24,332)	(24.4)%
Due after 30 days through 90 days	102,276	15.7 %	129,194	17.3 %	(26,918)	(20.8)%
Due after 90 days through 1 year	31,369	4.8 %	46,096	6.2 %	(14,727)	(31.9)%
Total principal amount	210,926	32.3 %	274,853	36.8 %	(63,927)	(23.3)%
Consolidated Bonds						
Fixed-rate, non-callable						
Due in 1 year or less	101,114	15.5 %	99,473	13.3 %	1,641	1.6 %
Due after 1 year through 3 years	40,859	6.3 %	48,168	6.4 %	(7,309)	(15.2)%
Due after 3 years through 5 years	14,597	2.2 %	19,532	2.6 %	(4,935)	(25.3)%
Thereafter	13,885	2.1 %	16,528	2.2 %	(2,643)	(16.0)%
Total principal amount	170,455	26.1 %	183,701	24.5 %	(13,246)	(7.2)%
Fixed-rate, callable						
Due in 1 year or less	2,365	0.4 %	4,150	0.6 %	(1,785)	(43.0)%
Due after 1 year through 3 years	46,892	7.2 %	4,338	0.6 %	42,554	981.0 %
Due after 3 years through 5 years	67,865	10.4 %	7,400	1.0 %	60,465	817.1 %
Thereafter	39,444	6.0 %	21,439	2.9 %	18,005	84.0 %
Total principal amount	156,566	24.0 %	37,327	5.1 %	119,239	319.4 %
Variable-rate (non-capped)						
Due in 1 year or less	82,939	12.7 %	204,107	27.3 %	(121,168)	(59.4)%
Due after 1 year through 3 years	6,230	1.0 %	45,478	6.1 %	(39,248)	(86.3)%
Due after 3 years through 5 years	788	0.1 %	110	—	678	616.4 %
Thereafter	150	—	—	—	150	—
Total principal amount	90,107	13.8 %	249,695	33.4 %	(159,588)	(63.9)%
Step-up/step-down, callable						
Due in 1 year or less	—	—	—	—	—	—
Due after 1 year through 3 years	1,837	0.3 %	—	—	1,837	—
Due after 3 years through 5 years	14,518	2.2 %	480	0.1 %	14,038	2,924.6 %
Thereafter	8,020	1.2 %	63	—	7,957	12,630.2 %
Total principal amount	24,375	3.7 %	543	0.1 %	23,832	4,389.0 %
Other						
Due in 1 year or less	125	—	530	0.1 %	(405)	(76.4)%
Due after 1 year through 3 years	—	—	125	—	(125)	(100.0)%
Due after 3 years through 5 years	308	0.1 %	—	—	308	—
Thereafter	—	—	—	—	—	—
Total principal amount	433	0.1 %	655	0.1 %	(222)	(33.9)%
Total principal amount consolidated bonds	441,936	67.7 %	471,921	63.2 %	(29,985)	(6.4)%
Total principal amount	652,862	100.0 %	746,774	100.0 %	\$ (93,912)	(12.6)%
Other adjustments, net(1)	(941)		1,744			
Total consolidated obligations	\$ 651,921		\$ 748,518			

(1) Consists of hedging and fair value option valuation adjustments, unamortized premiums and discounts, and combining adjustments.

Table 20 presents the principal amount of variable-rate consolidated bonds by interest-rate index at December 31, 2021 and 2020. (See [Quantitative and Qualitative Disclosures about Market Risk](#) for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 20 - Variable-Rate Consolidated Bonds by Interest-Rate Index

(dollars in millions)

	December 31, 2021	December 31, 2020
SOFR	\$ 89,857	\$ 196,291
LIBOR	250	53,418
Other	—	50
Total principal amount of variable-rate consolidated bonds	\$ 90,107	\$ 249,759

Table 21 presents cash flows related to consolidated obligations, which illustrates payments exceeding proceeds for the year ended December 31, 2021, resulting in lower consolidated obligations outstanding. The volume of both net proceeds and total payments of consolidated obligations decreased during the year ended December 31, 2021, compared to the year ended December 31, 2020, due primarily to a decrease in the issuance of discount notes, driven by a decrease in short-term advance activity and an increase in the issuance of longer-term fixed-rate, callable consolidated bonds.

Table 21 - Net Proceeds and Payments for Consolidated Obligations

(dollars in millions)

	Year Ended December 31,			Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Net proceeds from issuance of consolidated obligations					
Discount notes	\$ 3,314,895	\$ 4,135,082	\$ 6,633,748	\$ (820,187)	\$ (2,498,666)
Bonds	429,963	505,445	614,243	(75,482)	(108,798)
Net proceeds	3,744,858	4,640,527	7,247,991	\$ (895,669)	\$ (2,607,464)
Payments for maturing and retiring consolidated obligations					
Discount notes	3,378,712	4,263,664	6,655,363	\$ (884,952)	\$ (2,391,699)
Bonds	459,861	654,260	597,239	(194,399)	57,021
Total payments	3,838,573	4,917,924	7,252,602	\$ (1,079,351)	\$ (2,334,678)
Net change	\$ (93,715)	\$ (277,397)	\$ (4,611)		

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

Table 22 presents the bond types the FHLBanks issued for their bond funding needs. The types of consolidated bonds issued can fluctuate based on comparative changes in their cost levels, supply and demand conditions, advance demand, and the FHLBanks' individual balance sheet management strategies. During the year ended December 31, 2021, the total issuance of consolidated bonds decreased compared to the year ended December 31, 2020, in line with the decrease in demand for advances. In addition, during the year ended December 31, 2021, there was a shift in issuance from single-index, variable-rate consolidated bonds to fixed-rate consolidated bonds, driven by the lower cost of issuing fixed-rate consolidated bonds compared to variable-rate consolidated bonds during the year.

Table 22 - Percentage of Total Consolidated Bonds Issued by Bond Type

	Year Ended December 31,		
	2021	2020	2019
Fixed-rate, non-callable	41.3 %	22.1 %	18.2 %
Fixed-rate, callable	36.7 %	10.5 %	17.1 %
Single-index, variable-rate(1)	15.8 %	67.3 %	64.5 %
Step-up/step-down(2)	6.2 %	0.1 %	0.2 %
Total	100.0 %	100.0 %	100.0 %

(1) Includes SOFR-linked consolidated bonds of \$65.8 billion, \$258.9 billion, and \$152.5 billion, which represented 96.7%, 76.1%, and 38.5% of the single-index variable-rate consolidated bonds issued during the years ended December 31, 2021, 2020, and 2019.

(2) Primarily consists of callable step-up bonds.

The FHLBanks may use callable swaps to hedge against the interest-rate risk associated with callable bonds. A hedged callable bond is generally called if the call feature of the derivative is exercised. These call features could result in the need for FHLBanks to refinance a substantial portion of outstanding liabilities during times of decreasing interest rates. Call options on unhedged callable bonds generally are exercised when the bond can be replaced at a lower cost. Callable bonds enable an FHLBank to meet its funding needs at costs not otherwise directly attainable solely through the issuance of non-callable debt.

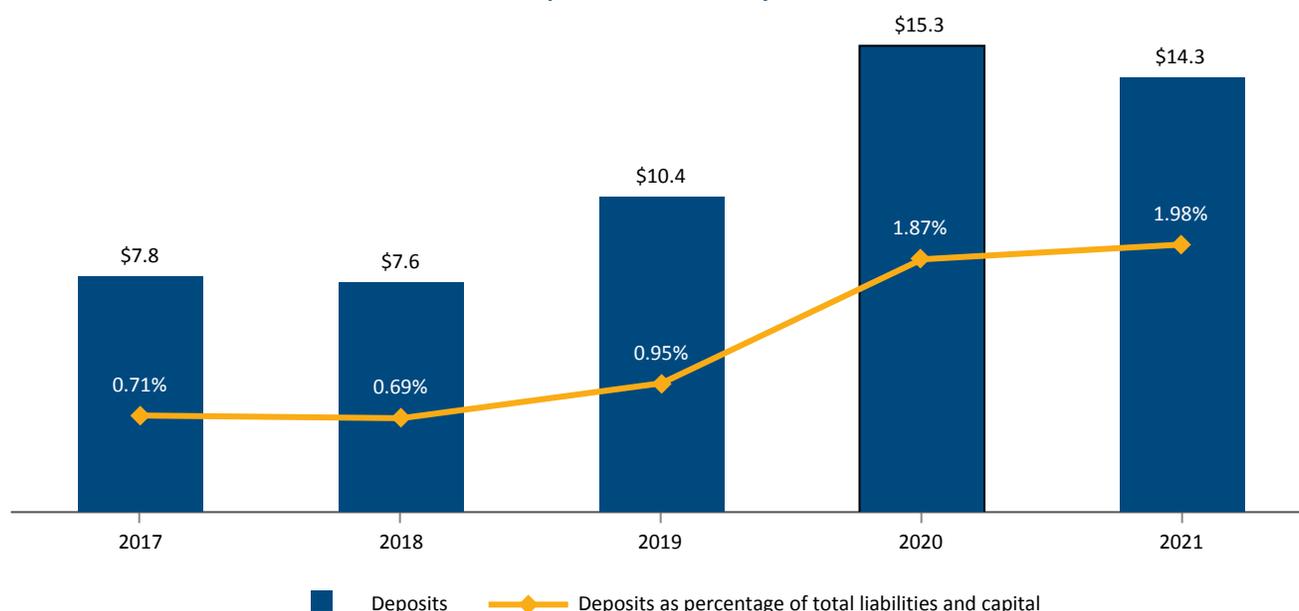
The FHLBanks have diversified sources and channels of funding from the capital markets based on the need for funding. Consolidated bonds can be negotiated individually, auctioned competitively through approved dealers, offered through the floating-rate note window, or issued directly to investors without the use of a dealer of consolidated obligations. The FHLBanks began to issue SOFR-linked variable-rate consolidated bonds through the floating-rate note window in 2020. (See [Business - Consolidated Obligations](#) for additional information on consolidated bonds transaction types.) Table 23 presents the transaction types through which the FHLBanks issue consolidated bonds.

Table 23 - Percentage of Total Consolidated Bonds Issued by Transaction Type

	Year Ended December 31,		
	2021	2020	2019
Negotiated transactions	81.2 %	65.6 %	93.3 %
Window transactions	15.1 %	24.2 %	—
Competitive bid	3.7 %	10.2 %	6.7 %
Total	100.0 %	100.0 %	100.0 %

Deposits

The FHLBanks offer demand and overnight deposit programs to members and to qualifying non-members. In addition, certain FHLBanks offer short-term interest-bearing deposit programs to members, and in certain cases, to qualifying non-members. Figure 23 presents deposits for the most recent five years.

**Figure 23 - Deposits at Year-end
(dollars in billions)**

Deposits represent a relatively small portion of the FHLBanks' funding, totaling \$14.3 billion at December 31, 2021, a decrease of \$1.0 billion, or 7%, from December 31, 2020. All FHLBank deposits are uninsured and deposit balances vary depending on market factors, such as the attractiveness of the FHLBanks' deposit pricing relative to the rates available on alternative money market instruments, FHLBank members' investment preferences with respect to the maturity of their investments, and FHLBank members' liquidity. Interest-bearing demand and overnight deposits represented 94% and 89% of deposits at December 31, 2021 and 2020, with the remaining deposits primarily being term deposits and non-interest-bearing deposits.

Interest-bearing demand and overnight deposits pay interest based on a daily interest rate. The average balances of demand and overnight deposits were \$15.2 billion, \$13.0 billion, and \$8.1 billion, and the weighted-average interest rates paid on demand and overnight deposits were 0.01%, 0.21%, and 1.86% during the years ended December 31, 2021, 2020, and 2019. Term deposits pay interest based on a fixed rate determined at the issuance of the deposit. The average balances of term deposits were \$267 million, \$299 million, and \$310 million, and the weighted-average interest rates paid on term deposits were 0.09%, 0.48%, and 2.08% during the years ended December 31, 2021, 2020, and 2019.

Table 24 presents uninsured term deposits at December 31, 2021 and 2020.

Table 24 - Uninsured Term Deposits

(dollars in millions)

	December 31, 2021	December 31, 2020
3 months or less	\$ 143	\$ 192
Over 3 months through 6 months	19	48
Over 6 months through 12 months	9	20
Over 12 months	23	2
Total	\$ 194	\$ 262

Capital

GAAP capital consists of capital stock, retained earnings, and accumulated other comprehensive income (loss). Figure 24 presents GAAP capital and the GAAP capital-to-assets ratio for the most recent five years.

Figure 24 - GAAP Capital at Year-end
(dollars in billions)

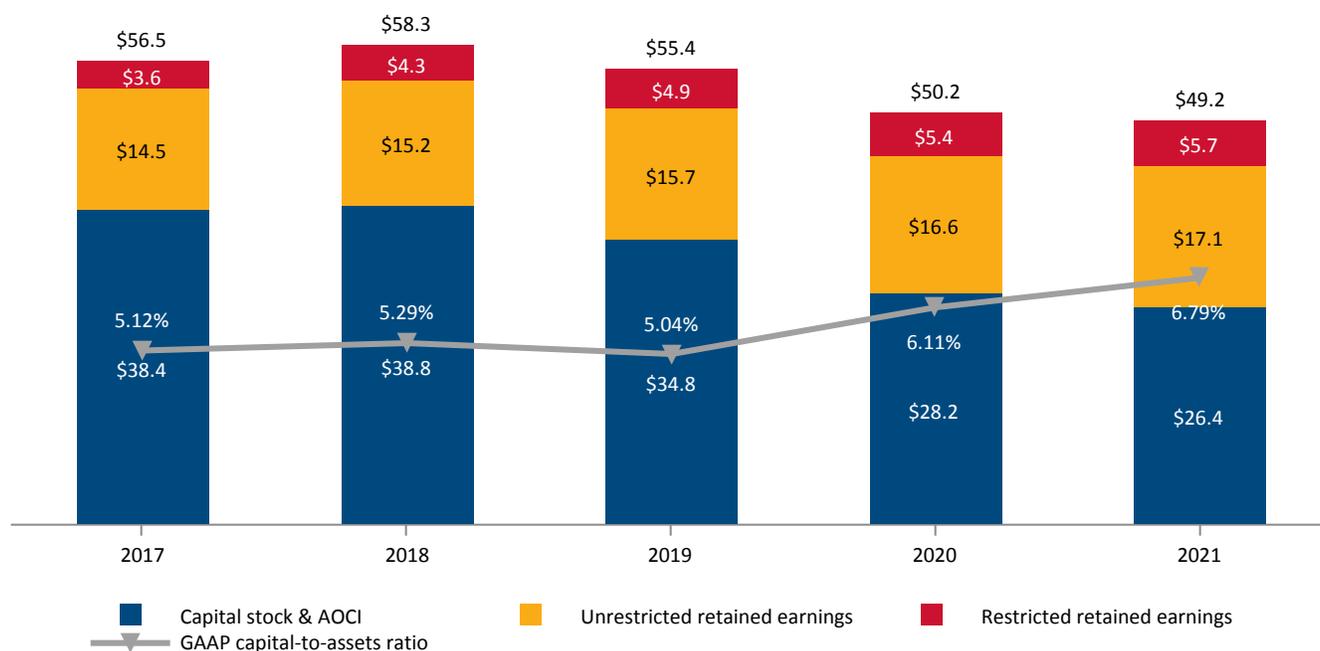


Table 25 - Total Capital and Capital-to-Assets Ratios
(dollars in millions)

	December 31, 2021	December 31, 2020	Change
Capital stock	\$ 25,065	\$ 27,398	\$ (2,333)
Retained earnings:			
Unrestricted	17,110	16,564	546
Restricted(1)	5,650	5,434	216
Total retained earnings	22,760	21,998	762
AOCI	1,297	784	513
Total GAAP capital	49,122	50,180	(1,058)
Exclude: AOCI	(1,297)	(784)	(513)
Add: Mandatorily redeemable capital stock	398	772	(374)
Total combined regulatory capital(2)	\$ 48,223	\$ 50,168	\$ (1,945)
Total assets	\$ 723,238	\$ 820,740	\$ (97,502)
Combined GAAP capital-to-assets ratio	6.79 %	6.11 %	
Combined regulatory capital-to-assets ratio(3)	6.67 %	6.11 %	

- (1) Restricted retained earnings was established through the Capital Agreement, as amended, and is intended to enhance the capital position of each FHLBank. (See [Note 11 - Capital](#) to the accompanying combined financial statements for additional information about the Capital Agreement and restricted retained earnings.)
- (2) Regulatory capital requirements apply to individual FHLBanks, and the combined amounts are for analysis only. The sum of the individual FHLBank regulatory capital amounts does not agree to the total combined regulatory capital due to combining adjustments.
- (3) The combined regulatory capital-to-assets ratio is calculated based on the FHLBanks' combined regulatory capital as a percentage of combined total assets. (See [Note 11 - Capital](#) to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

GAAP Capital. Total GAAP capital was \$49.1 billion at December 31, 2021, a decrease of \$1.1 billion, or 2%, from \$50.2 billion at December 31, 2020, due primarily to a decrease in capital stock. The combined GAAP capital-to-assets ratio was 6.79% at December 31, 2021, an increase of 68 basis points from 6.11% at December 31, 2020.

Capital Stock. Capital stock was \$25.1 billion at December 31, 2021, a decrease of \$2.3 billion, or 9%, from \$27.4 billion at December 31, 2020, due to the net repurchases and redemptions of activity-based capital stock, driven primarily by the decrease in advances, and the reclassification of capital stock to mandatorily redeemable capital stock.

Retained Earnings. Retained earnings grew to \$22.8 billion at December 31, 2021, an increase of \$0.8 billion, or 3%, from \$22.0 billion at December 31, 2020, resulting principally from net income of \$1.8 billion, partially offset by dividends of \$1.0 billion. Unrestricted retained earnings were \$17.1 billion at December 31, 2021, an increase of \$0.5 billion, or 3%, from \$16.6 billion at December 31, 2020. Restricted retained earnings were \$5.7 billion at December 31, 2021, an increase of \$0.2 billion, or 4%, from \$5.4 billion at December 31, 2020.

Accumulated Other Comprehensive Income (Loss). AOCI grew to \$1.3 billion at December 31, 2021, an increase of \$0.5 billion, or 65%, from \$0.8 billion at December 31, 2020, primarily consisting of net unrealized gains on MBS classified as AFS securities and net unrealized gains relating to hedging activities.

Figures 25 and 26 present the components of capital as a percentage of total GAAP capital at December 31, 2021 and 2020.

Figure 25 - Capital Components as a Percentage of Total GAAP Capital at December 31, 2021

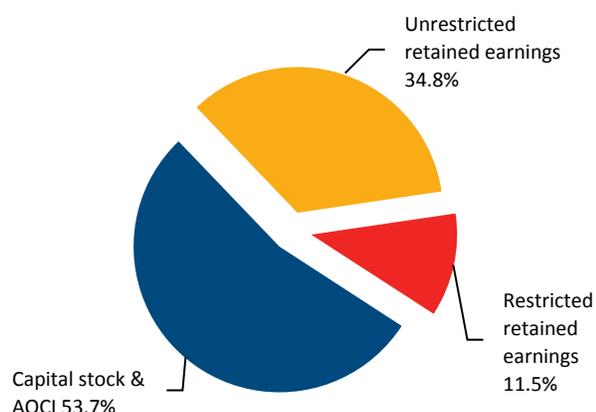
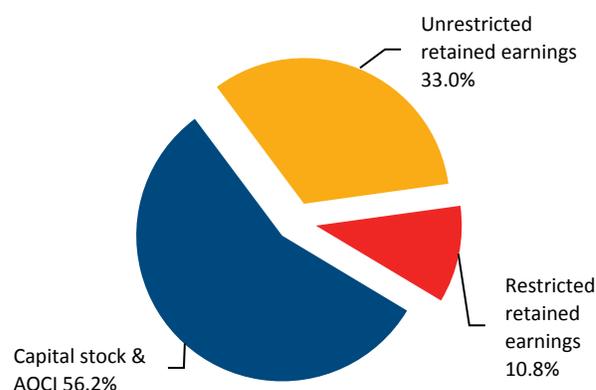


Figure 26 - Capital Components as a Percentage of Total GAAP Capital at December 31, 2020

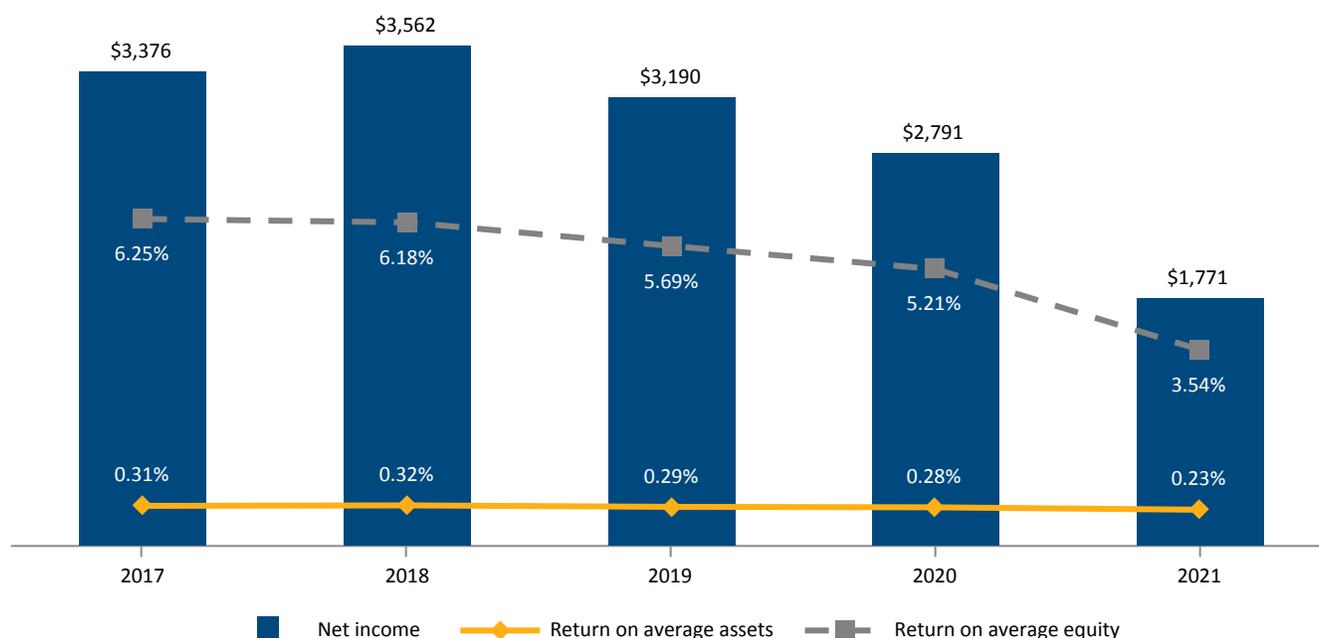


Regulatory Capital. Total combined regulatory capital was \$48.2 billion at December 31, 2021, a decrease of \$1.9 billion, or 4%, from \$50.2 billion at December 31, 2020, due primarily to a decrease in capital stock.

Combined Results of Operations

Net Income

The primary source of each FHLBank’s earnings is net interest income, which is the interest income on advances, mortgage loans, and investments, less the interest expense on consolidated obligations, deposits, and mandatorily redeemable capital stock. The expenses of the FHLBanks, other than interest expense, primarily consist of employee compensation and benefits, other operating expenses, and Affordable Housing Program assessments. The FHLBanks may also recognize non-interest gains and losses, such as gains and losses on derivatives and hedging activities and gains and losses on investment securities. Due to the FHLBanks’ cooperative structure, the FHLBanks generally earn a narrow net interest spread. Accordingly, the FHLBanks’ net income is relatively small compared to total assets and total liabilities. Figure 27 presents net income, return on average assets, and return on average equity for the most recent five years.

Figure 27 - Net Income
(dollars in millions)

The following discussion is of the combined results of operations for the year ended December 31, 2021, compared to the year ended December 31, 2020. For a discussion of the combined results of operations for the year ended December 31, 2020, compared to the year ended December 31, 2019, see the Financial Discussion and Analysis of Combined Financial Condition and Combined Results of Operations included in the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2020.

Net income was \$1,771 million for the year ended December 31, 2021, a decrease of 37% compared to the year ended December 31, 2020, resulting primarily from decreases in net interest income after provision for credit losses and non-interest income.

Table 26 - Changes in Net Income

(dollars in millions)

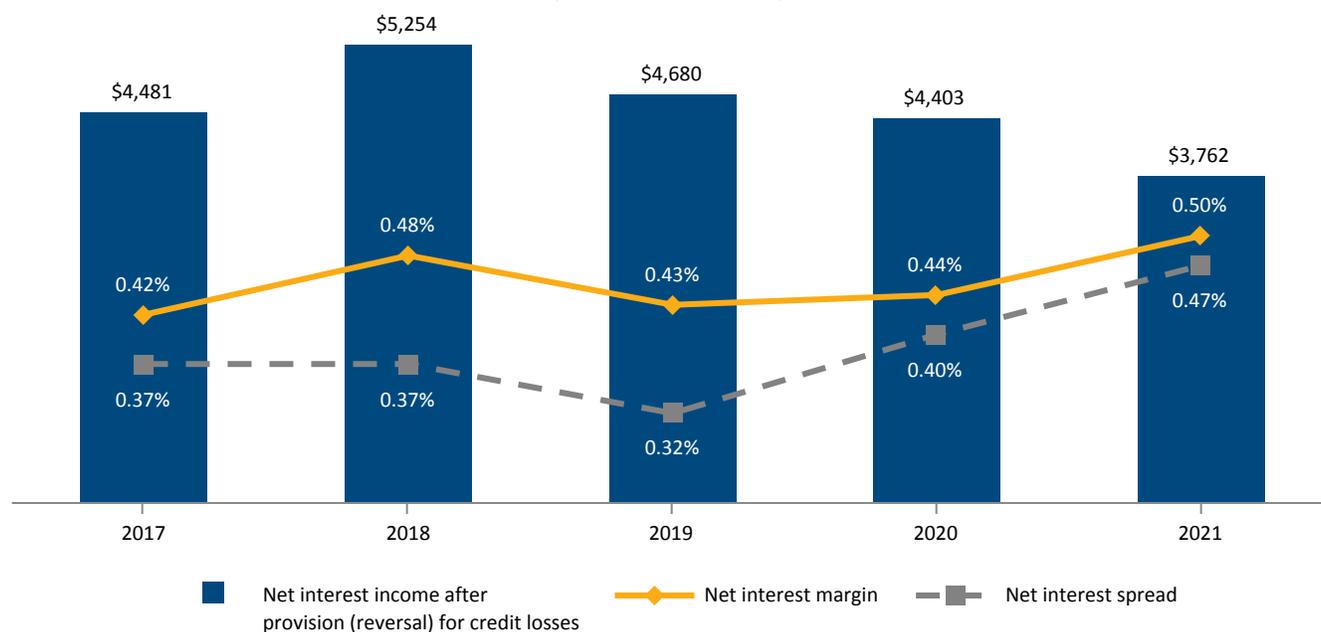
	Year Ended December 31,			Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Net interest income after provision (reversal) for credit losses	\$ 3,762	\$ 4,403	\$ 4,680	\$ (641)	\$ (277)
Non-interest income (loss)	(358)	273	297	(631)	(24)
Non-interest expense	1,432	1,570	1,425	(138)	145
Affordable Housing Program assessments	201	315	362	(114)	(47)
Net income	\$ 1,771	\$ 2,791	\$ 3,190	\$ (1,020)	\$ (399)

Net Interest Income after Provision (Reversal) for Credit Losses

The primary source of each FHLBank's earnings is net interest income, which is the interest income on advances, mortgage loans, and investments, less the interest expense on consolidated obligations, deposits, and mandatorily redeemable capital stock. The net interest income of the FHLBanks is affected by several external factors, including changes in interest rates, liquidity levels and demand for advances from member institutions, the general state of the economy, and fiscal and monetary policies. The COVID-19 pandemic and the efforts in response by the Federal Reserve have resulted in historically low interest rates and high levels of market liquidity. The future level of net

interest income of the FHLBanks will depend, in part, upon the level and volatility of interest rates, demand for advances, cost of consolidated obligations, fiscal or monetary stimulus, as well as the timing and shape of the economic recovery. Figure 28 presents net interest income after provision (reversal) for credit losses, net interest margin, and net interest spread for the most recent five years.

Figure 28 - Net Interest Income after Provision (Reversal) for Credit Losses
(dollars in millions)



Net interest income after provision (reversal) for credit losses was \$3,762 million for the year ended December 31, 2021, a decrease of 15% compared to the year ended December 31, 2020, resulting primarily from the reduced demand for advances due to elevated levels of liquidity in the financial markets and elevated deposit levels at depository member institutions.

Table 27 - Net Interest Income after Provision (Reversal) for Credit Losses

(dollars in millions)

	Year Ended December 31,			Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Interest income					
Advances	\$ 2,634	\$ 6,654	\$ 16,856	\$ (4,020)	\$ (10,202)
Investments and other	2,412	4,291	9,174	(1,879)	(4,883)
Mortgage loans held for portfolio	1,425	1,862	2,234	(437)	(372)
Total interest income	6,471	12,807	28,264	(6,336)	(15,457)
Interest expense					
Consolidated obligations - Discount notes	226	2,535	9,028	(2,309)	(6,493)
Consolidated obligations - Bonds	2,473	5,748	14,319	(3,275)	(8,571)
Total consolidated obligations	2,699	8,283	23,347	(5,584)	(15,064)
Deposits and mandatorily redeemable capital stock	25	83	235	(58)	(152)
Total interest expense	2,724	8,366	23,582	(5,642)	(15,216)
Net interest income	3,747	4,441	4,682	(694)	(241)
Provision (reversal) for credit losses	(15)	38	2	(53)	36
Net interest income after provision (reversal) for credit losses	\$ 3,762	\$ 4,403	\$ 4,680	\$ (641)	\$ (277)

Table 28 presents average balances of and average yields/rates on the major categories of interest-earning assets and interest-bearing liabilities, net interest spread, and net interest margin. Due to the FHLBanks' cooperative structure, the FHLBanks generally earn a narrow net interest spread.

Table 28 - Analysis of Interest Income/Expense and Average Yield/Rate

(dollars in millions)

	Year Ended December 31,								
	2021			2020			2019		
	Average Balance	Interest Income/Expense	Average Yield/Rate	Average Balance	Interest Income/Expense	Average Yield/Rate	Average Balance	Interest Income/Expense	Average Yield/Rate
Assets									
Interest-bearing deposits and other	\$ 10,167	\$ 16	0.16 %	\$ 18,132	\$ 88	0.49 %	\$ 14,882	\$ 338	2.27 %
Securities purchased under agreements to resell	21,235	14	0.07 %	38,705	199	0.51 %	54,090	1,205	2.23 %
Federal funds sold	68,492	53	0.08 %	64,848	265	0.41 %	70,990	1,564	2.20 %
Investment securities(1)(2)	195,160	2,329	1.19 %	234,293	3,739	1.60 %	212,711	6,067	2.85 %
Advances	395,486	2,634	0.67 %	572,720	6,654	1.16 %	660,847	16,856	2.55 %
Mortgage loans(3)	57,718	1,425	2.47 %	70,848	1,862	2.63 %	66,949	2,234	3.34 %
Total interest-earning assets	748,258	6,471	0.86 %	999,546	12,807	1.28 %	1,080,469	28,264	2.62 %
Other non-interest-earning assets	7,484			8,839			6,769		
Fair-value adjustment on investment securities(2)	3,734			3,613			2,757		
Total assets	\$ 759,476			\$1,011,998			\$1,089,995		
Liabilities and Capital									
Consolidated obligations - Discount notes	\$ 239,863	226	0.09 %	\$ 382,765	2,535	0.66 %	\$ 401,009	9,028	2.25 %
Consolidated obligations - Bonds	444,148	2,473	0.56 %	549,227	5,748	1.05 %	613,368	14,319	2.33 %
Deposits and mandatorily redeemable capital stock	16,287	25	0.15 %	14,541	83	0.57 %	9,799	235	2.40 %
Total interest-bearing liabilities	700,298	2,724	0.39 %	946,533	8,366	0.88 %	1,024,176	23,582	2.30 %
Non-interest-bearing liabilities	9,113			11,863			9,729		
Total liabilities	709,411			958,396			1,033,905		
Capital	50,065			53,602			56,090		
Total liabilities and capital	\$ 759,476			\$1,011,998			\$1,089,995		
Net interest income		\$ 3,747			\$ 4,441			\$ 4,682	
Net interest spread			0.47 %			0.40 %			0.32 %
Net interest margin			0.50 %			0.44 %			0.43 %
Total interest-earning assets to total interest-bearing liabilities	106.85 %			105.60 %			105.50 %		

(1) Investment securities consist of Trading, AFS, and HTM securities.

(2) The average balances of AFS securities and HTM securities are reflected at amortized cost. (See [Note 4 - Investments](#) to the accompanying combined financial statements for additional information.)

(3) Non-accrual loans are included in the average balances used to determine average yield/rate.

Changes in both average interest rates and average balances of interest-earning assets and interest-bearing liabilities have a direct influence on changes in net interest income, net interest margin, and net interest spread. Table 29 presents changes in interest income and interest expense due to rate-related and volume-related factors. Changes in interest income and interest expense not identifiable as either rate-related or volume-related, but rather attributable to both rate and volume changes, have been allocated to the rate and volume categories based on the proportion of the absolute value of the rate and volume changes.

Table 29 - Rate and Volume Analysis*(dollars in millions)*

	2021 vs. 2020			2020 vs. 2019		
	Volume	Rate	Total	Volume	Rate	Total
Interest Income						
Interest-bearing deposits and other	\$ (28)	\$ (44)	\$ (72)	\$ 61	\$ (311)	\$ (250)
Securities purchased under agreements to resell	(64)	(121)	(185)	(271)	(735)	(1,006)
Federal funds sold	14	(226)	(212)	(125)	(1,174)	(1,299)
Investment securities ⁽¹⁾	(556)	(854)	(1,410)	562	(2,890)	(2,328)
Advances	(1,700)	(2,320)	(4,020)	(2,005)	(8,197)	(10,202)
Mortgage loans	(329)	(108)	(437)	124	(496)	(372)
Total interest income	(2,663)	(3,673)	(6,336)	(1,654)	(13,803)	(15,457)
Interest Expense						
Consolidated obligations - Discount notes	(697)	(1,612)	(2,309)	(392)	(6,101)	(6,493)
Consolidated obligations - Bonds	(952)	(2,323)	(3,275)	(1,370)	(7,201)	(8,571)
Deposits and mandatorily redeemable capital stock	9	(67)	(58)	80	(232)	(152)
Total interest expense	(1,640)	(4,002)	(5,642)	(1,682)	(13,534)	(15,216)
Changes in net interest income	\$ (1,023)	\$ 329	\$ (694)	\$ 28	\$ (269)	\$ (241)

(1) Investment securities consist of Trading, AFS, and HTM securities.

Net interest income was \$3,747 million for the year ended December 31, 2021, a decrease of 16% compared to the year ended December 31, 2020. Both interest income and interest expense were significantly lower for the year ended December 31, 2021, compared to the year ended December 31, 2020, primarily as a result of the low interest-rate environment resulting from the COVID-19 pandemic and the reduced demand for advances due to elevated levels of liquidity in the financial markets and elevated deposit levels at depository member institutions.

- Interest income was \$6,471 million for the year ended December 31, 2021, a decrease of 49% compared to the year ended December 31, 2020, resulting from decreases in both the average yield on, and the average balance of, interest-earning assets, principally advances. The average yield on interest-earning assets was 0.86% for the year ended December 31, 2021, a decrease of 42 basis points compared to the year ended December 31, 2020. The average balance of interest-earning assets was \$748.3 billion for the year ended December 31, 2021, a decrease of 25% compared to the year ended December 31, 2020.
- Interest expense was \$2,724 million for the year ended December 31, 2021, a decrease of 67% compared to the year ended December 31, 2020, due to the lower average rate on, and the lower average balance of, consolidated obligations. The average rate on consolidated obligations was 0.39% for the year ended December 31, 2021, a decrease of 50 basis points compared to the year ended December 31, 2020. The average balance of consolidated obligations was \$684.0 billion for the year ended December 31, 2021, a decrease of 27% compared to the year ended December 31, 2020.

Net interest margin was 0.50% for the year ended December 31, 2021, an increase of 6 basis points compared to the year ended December 31, 2020. The increase in net interest margin during the year ended December 31, 2021, was driven primarily by the lower cost of consolidated obligations, resulting primarily from the tightening of spreads relative to certain benchmark interest rates during this period, supported by high demand for consolidated obligations by investors. Also contributing to the increase in net interest margin compared to the year ended December 31, 2020, was the lower net interest margin for the year ended December 31, 2020, which was driven by several factors associated with the decline in interest rates that occurred in March 2020, during the onset of the COVID-19 pandemic.

Factors Affecting Net Interest Income.

Advances. Interest income on advances was \$2,634 million for the year ended December 31, 2021, a decrease of 60% compared to the year ended December 31, 2020, resulting from decreases in both the average yield on, and the average balance of, advances. The average yield on advances was 0.67% for the year ended December 31, 2021, a decrease of 49 basis points compared to the year ended December 31, 2020. The decrease in the average yield on advances was the result of lower interest rates on advances driven by the low interest-rate environment, including the effect of derivatives and hedging activities on interest income from advances, the decrease in prepayment fees on advances, and the runoff of higher-yielding advances and replacement of these advances in the low interest-rate environment. (See *Table 30* for additional information regarding the effect of derivatives and hedging activities on net interest income.) The average balance of advances was \$395.5 billion for the year ended December 31, 2021, a decrease of 31% compared to the year ended December 31, 2020. The decline in the average balance of advances was principally attributable to those made to commercial bank members, driven by elevated levels of liquidity in the financial markets and elevated deposit levels at depository member institutions.

Mortgage Loans. Interest income on mortgage loans was \$1,425 million for the year ended December 31, 2021, a decrease of 23% compared to the year ended December 31, 2020, resulting primarily from a decrease in the average balance of mortgage loans. The average balance of mortgage loans was \$57.7 billion for the year ended December 31, 2021, a decrease of 19% compared to the year ended December 31, 2020, driven primarily by prepayments, resulting from the low mortgage interest-rate environment and reduced mortgage loan purchase volume.

Total Investments. Interest income on investments was \$2,412 million for the year ended December 31, 2021, a decrease of 44% compared to the year ended December 31, 2020, resulting from decreases in both the average yield on, and the average balance of, investments. The average yield on investments was 0.82%, a decrease of 39 basis points compared to the year ended December 31, 2020. The decrease in the average yield on investments was the result of lower interest rates on investments in the low interest-rate environment, including the effect of derivatives and hedging activities on interest income from investments, and the runoff of higher-yielding investments and replacement of these investments in the low interest-rate environment, including a decrease in the yields on short-term investments funded by member capital and short-term debt, partially offset by a reduction of premium amortization on MBS. (See *Table 30* for additional information regarding the effect of derivatives and hedging activities on net interest income and [Liquidity and Capital Resources](#) for more discussion regarding the FHLBanks' liquidity requirements.) The average balance of investments was \$295.1 billion for the year ended December 31, 2021, a decrease of 17% compared to the year ended December 31, 2020, due primarily to decreases in the average balances of trading securities, HTM securities, and securities purchased under agreements to resell.

Consolidated Obligations. Interest expense on consolidated obligations was \$2,699 million for the year ended December 31, 2021, a decrease of 67% compared to the year ended December 31, 2020, due to the lower average rate on, and the lower average balance of, consolidated obligations. The average rate on consolidated obligations was 0.39% for the year ended December 31, 2021, a decrease of 50 basis points compared to the year ended

December 31, 2020. The decrease in the average rate on consolidated obligations was driven by the low interest-rate environment, the tightening of spreads relative to certain benchmark interest rates, the runoff of higher-rate consolidated obligations and replacement of these consolidated obligations in the low interest-rate environment, and the effect of derivatives and hedging activities on interest expense from consolidated obligations resulting from an increase in net interest settlement payments on derivatives. (See *Table 30* for additional information regarding the effect of derivatives and hedging activities on net interest income.) The average balance of consolidated obligations was \$684.0 billion for the year ended December 31, 2021, a decrease of 27% compared to the year ended December 31, 2020, principally resulting from decreases in the average balance of advances and investments.

Effect of Derivatives and Hedging Activities on Net Interest Income.

Net interest income includes components related to the effect of derivatives and hedging activities resulting from the FHLBanks' hedging strategies. If a hedging relationship is designated and qualifies for hedge accounting treatment, the net interest settlements of interest receivables or payables related to derivatives designated in fair value or cash flow hedge relationships are recognized as adjustments to interest income or expense of the designated hedged item. When hedge accounting is discontinued, the cumulative basis adjustment on the hedged item is amortized or accreted into net interest income over the remaining life of the hedged item using a level-yield methodology. In addition, changes in fair value of the derivative and the hedged item for designated fair value hedges are recorded in net interest income in the same line as the hedged item. (See [Note 7 - Derivatives and Hedging Activities](#) to the accompanying combined financial statements for additional information on the effect of derivatives and hedging activities.) Table 30 presents the effect of derivatives and hedging activities on net interest income.

Table 30 - Effect of Derivatives and Hedging Activities on Net Interest Income

(dollars in millions)

	Year Ended December 31, 2021					
	Advances	Investment Securities	Mortgage Loans(1)	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	\$ (237)	\$ (187)	\$ (28)	\$ (9)	\$ —	\$ (461)
Net gains (losses) on derivatives and hedged items	135	99	—	(6)	—	228
Net interest settlements on derivatives	(1,940)	(1,202)	—	1,147	(80)	(2,075)
Total effect on net interest income	\$ (2,042)	\$ (1,290)	\$ (28)	\$ 1,132	\$ (80)	\$ (2,308)
	Year Ended December 31, 2020					
	Advances	Investment Securities	Mortgage Loans(1)	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	\$ (219)	\$ (68)	\$ (29)	\$ (10)	\$ (5)	\$ (331)
Net gains (losses) on derivatives and hedged items	21	(6)	—	7	1	23
Net interest settlements on derivatives	(1,824)	(1,013)	—	700	(5)	(2,142)
Total effect on net interest income	\$ (2,022)	\$ (1,087)	\$ (29)	\$ 697	\$ (9)	\$ (2,450)

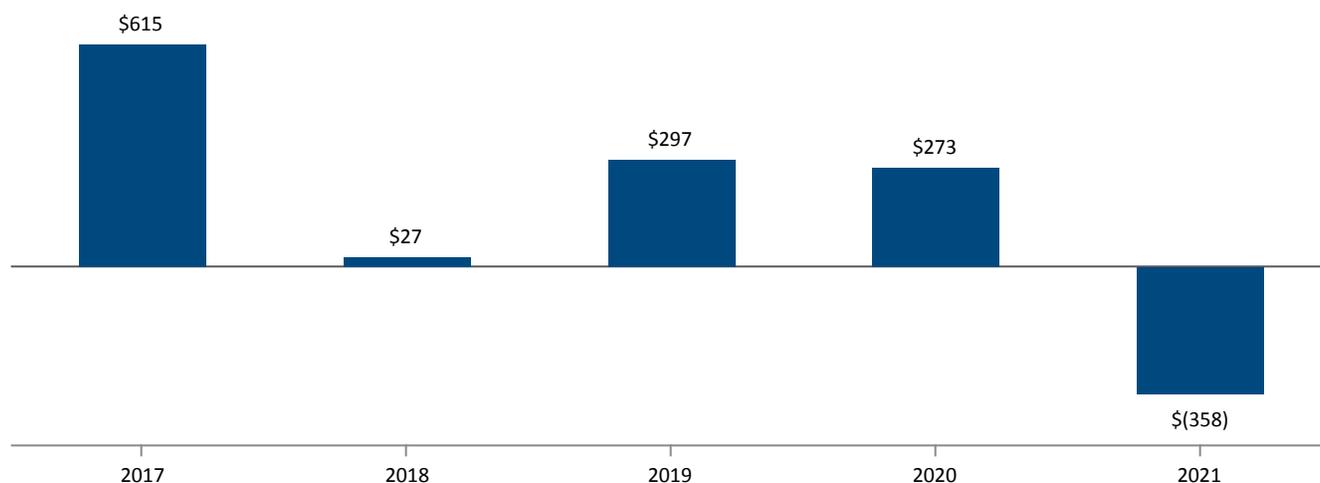
	Year Ended December 31, 2019					
	Advances	Investment Securities	Mortgage Loans ⁽¹⁾	Consolidated Bonds	Consolidated Discount Notes	Total
Net interest income						
Amortization and accretion of hedging activities in net interest income	\$ (49)	\$ (9)	\$ (13)	\$ (19)	\$ (9)	(99)
Net gains (losses) on derivatives and hedged items	26	(19)	—	(14)	—	(7)
Net interest settlements on derivatives	541	(48)	—	(402)	(20)	71
Total effect on net interest income	\$ 518	\$ (76)	\$ (13)	\$ (435)	\$ (29)	\$ (35)

(1) Includes standalone mortgage delivery commitments.

Non-Interest Income

Non-interest income consists of realized and unrealized gains (losses) on investment securities, derivatives activities, financial instruments held under fair value option, and other non-interest-earning activities. Figure 29 presents non-interest income for the most recent five years.

Figure 29 - Non-Interest Income
(dollars in millions)



Non-interest income was a loss of \$358 million for the year ended December 31, 2021, driven by changes in the fair value of investment securities, derivatives, and financial instruments held under fair value option resulting primarily from changes in interest rates. Non-interest income was a gain of \$273 million for the year ended December 31, 2020.

Table 31 - Changes in Non-Interest Income

(dollars in millions)

	Year Ended December 31,			Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Net gains (losses) on investment securities	\$ (708)	\$ 761	\$ 464	\$ (1,469)	\$ 297
Net gains (losses) on financial instruments held under fair value option	(67)	138	78	(205)	60
Net gains (losses) on derivatives	195	(1,094)	(449)	1,289	(645)
Gains on litigation settlements, net	15	146	30	(131)	116
Other, net	207	322	174	(115)	148
Total non-interest income (loss)	\$ (358)	\$ 273	\$ 297	\$ (631)	\$ (24)

Gains (Losses) on Investment Securities. The FHLBanks classify investment securities as AFS, HTM, or trading securities. The realized gains (losses) from the sale of AFS and HTM securities are recognized in current period earnings. Trading securities are recorded at fair value, with changes in fair value reflected in non-interest income. There are a number of factors that affect the fair value of investment securities, including current and projected levels of interest rates, credit spreads, and volatility, as well as the passage of time. Net losses on investment securities were \$708 million for the year ended December 31, 2021, compared to a net gain of \$761 million for the year ended December 31, 2020, due primarily to fair value losses on U.S. Treasury obligations classified as trading securities, driven by changes in interest rates.

Gains (Losses) on Financial Instruments Held under Fair Value Option. Certain FHLBanks elect the fair value option for certain financial assets and certain financial liabilities, and these FHLBanks recognize the changes in fair value on these assets and liabilities as unrealized gains and losses in current period earnings. The use of the fair value option allows these FHLBanks to mitigate potential income statement volatility that can arise when an economic derivative is adjusted for changes in fair value, but the related hedged item is not. The net loss on financial instruments held under fair value options was \$67 million for the year ended December 31, 2021, compared to a net gain of \$138 million for the year ended December 31, 2020, resulting primarily from a decrease in the fair value of advances held under the fair value option, partially offset by an increase in the fair value of consolidated obligations held under the fair value option. These changes in fair value of both advances and consolidated obligations were driven by changes in interest rates. (See *Table 32* and [Note 14 - Fair Value](#) to the accompanying combined financial statements for additional information regarding the gains (losses) on financial instruments held under fair value option.)

Gains (Losses) on Derivatives. Gains (losses) on derivatives are primarily comprised of the change in fair value of economic hedges, which are derivatives hedging specific or non-specific underlying assets, liabilities, or firm commitments that do not qualify, or were not designated, for fair value or cash flow hedge accounting. Gains (losses) on derivatives fluctuate with changes in market conditions and are based on a wide range of factors, including current and projected levels of interest rates, credit spreads, and volatility, as well as the passage of time.

The net gain on derivatives was \$195 million for the year ended December 31, 2021, compared to a net loss of \$1,094 million for the year ended December 31, 2020, due primarily to fair value gains on economic hedges which hedge trading securities and advances, partially offset by economic hedges which hedge consolidated obligations. *Table 32* presents the effect of derivatives on non-interest income.

Table 32 - Effect of Derivatives on Non-Interest Income

(dollars in millions)

	Year Ended December 31, 2021							
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Balance Sheet	Intermediary Positions and Other	Total
Net gains (losses) on derivatives								
Gains (losses) related to derivatives not designated as hedging instruments	\$ 88	\$ 163	\$ (10)	\$ (30)	\$ (2)	\$ —	\$ (15)	\$ 194
Price alignment amount	—	—	—	—	—	—	1	1
Total net gains (losses) on derivatives	88	163	(10)	(30)	(2)	—	(14)	195
Net gains (losses) on trading securities(1)	—	(697)	—	—	—	—	—	(697)
Net gains (losses) on financial instruments under fair value option	(111)	—	(3)	43	4	—	—	(67)
Total effect on non-interest income	\$ (23)	\$ (534)	\$ (13)	\$ 13	\$ 2	\$ —	\$ (14)	\$ (569)

Year Ended December 31, 2020								
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Balance Sheet	Intermediary Positions and Other	Total
Net gains (losses) on derivatives								
Gains (losses) related to derivatives not designated as hedging instruments	\$ (209)	\$ (1,195)	\$ (23)	\$ 105	\$ 93	\$ 92	\$ 35	\$ (1,102)
Price alignment amount	—	—	—	—	—	—	8	8
Total net gains (losses) on derivatives	(209)	(1,195)	(23)	105	93	92	43	(1,094)
Net gains (losses) on trading securities(1)	—	456	—	—	—	—	—	456
Net gains (losses) on financial instruments under fair value option	150	—	(1)	(10)	(1)	—	—	138
Total effect on non-interest income	\$ (59)	\$ (739)	\$ (24)	\$ 95	\$ 92	\$ 92	\$ 43	\$ (500)

Year Ended December 31, 2019								
	Advances	Investment Securities	Mortgage Loans	Consolidated Bonds	Consolidated Discount Notes	Balance Sheet	Intermediary Positions and Other	Total
Net gains (losses) on derivatives								
Gains (losses) related to derivatives not designated as hedging instruments	\$ (149)	\$ (405)	\$ 3	\$ 119	\$ (40)	\$ (21)	\$ 24	\$ (469)
Price alignment amount	—	—	—	—	—	—	20	20
Total net gains (losses) on derivatives	(149)	(405)	3	119	(40)	(21)	44	(449)
Net gains (losses) on trading securities(1)	—	434	—	—	—	—	—	434
Net gains (losses) on financial instruments under fair value option	165	—	(1)	(85)	(1)	—	—	78
Total effect on non-interest income	\$ 16	\$ 29	\$ 2	\$ 34	\$ (41)	\$ (21)	\$ 44	\$ 63

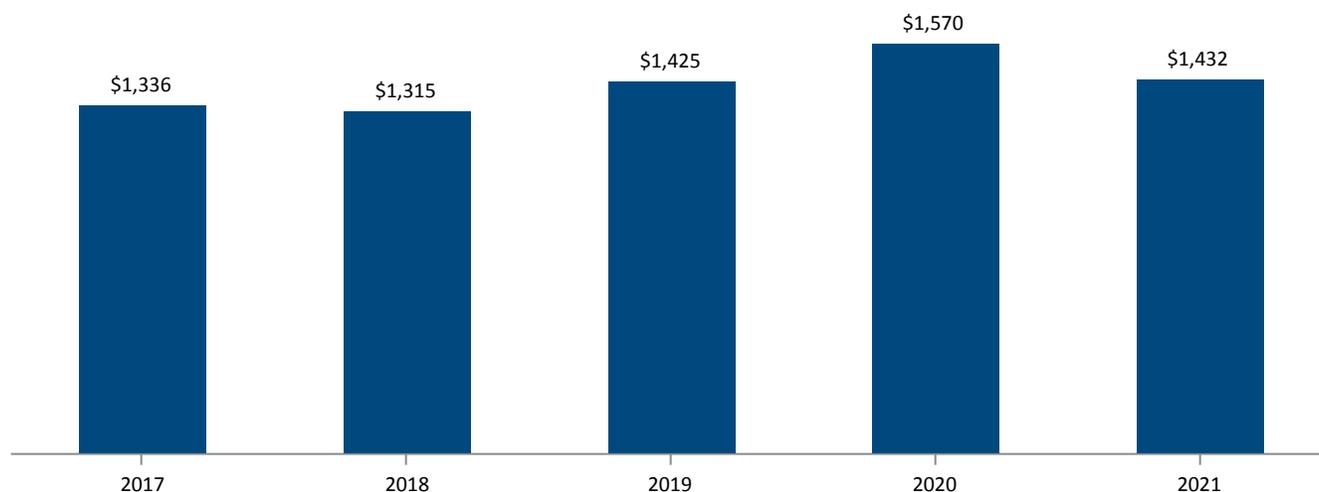
(1) Includes only those gains (losses) on trading securities that have been economically hedged.

Other, net. Other, net was \$207 million for the year ended December 31, 2021, a decrease of \$115 million compared to the year ended December 31, 2020, resulting principally from disgorgement proceeds of \$85 million received by the FHLBank of San Francisco from an SEC enforcement action during the year ended December 31, 2020.

Non-Interest Expense

Non-interest expense consists of compensation and benefits, other operating expenses, FHFA expenses, Office of Finance expenses, and other expenses. Figure 30 presents non-interest expense for the most recent five years.

Figure 30 - Non-Interest Expense
(dollars in millions)



Non-interest expense was \$1,432 million for the year ended December 31, 2021, a decrease of 9% compared to the year ended December 31, 2020. The decrease in non-interest expense resulted primarily from lower compensation and benefits, including a reduction in pension-related expenses, lower other operating expenses, mainly a decrease in professional services costs, and lower other expenses, driven by lower costs related to COVID-19 relief programs.

Table 33 - Changes in Non-Interest Expense

(dollars in millions)

	Year Ended December 31,			Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Compensation and benefits	\$ 749	\$ 841	\$ 718	\$ (92)	\$ 123
Other operating expenses	458	484	510	(26)	(26)
Federal Housing Finance Agency	84	77	72	7	5
Office of Finance	66	61	61	5	—
Other expenses	75	107	64	(32)	43
Total non-interest expense	\$ 1,432	\$ 1,570	\$ 1,425	\$ (138)	\$ 145

Compensation and Benefits. These expenses consist primarily of costs for FHLBank employees, including salaries, incentives, and health and retirement benefits.

Other Operating Expenses. These expenses consist primarily of professional and other contractual services, occupancy costs, depreciation and amortization, and information technology related costs.

FHFA Expenses. The FHLBanks fund the portion of the FHFA's operating costs and working capital fund that relate to the FHLBanks, as determined by the FHFA. These costs are based on the FHFA's annual budget and are under the sole control of the FHFA. Each FHLBank pays its pro-rata share of FHFA expenses based on the ratio of each FHLBank's minimum required regulatory capital to the aggregate minimum required regulatory capital of all FHLBanks.

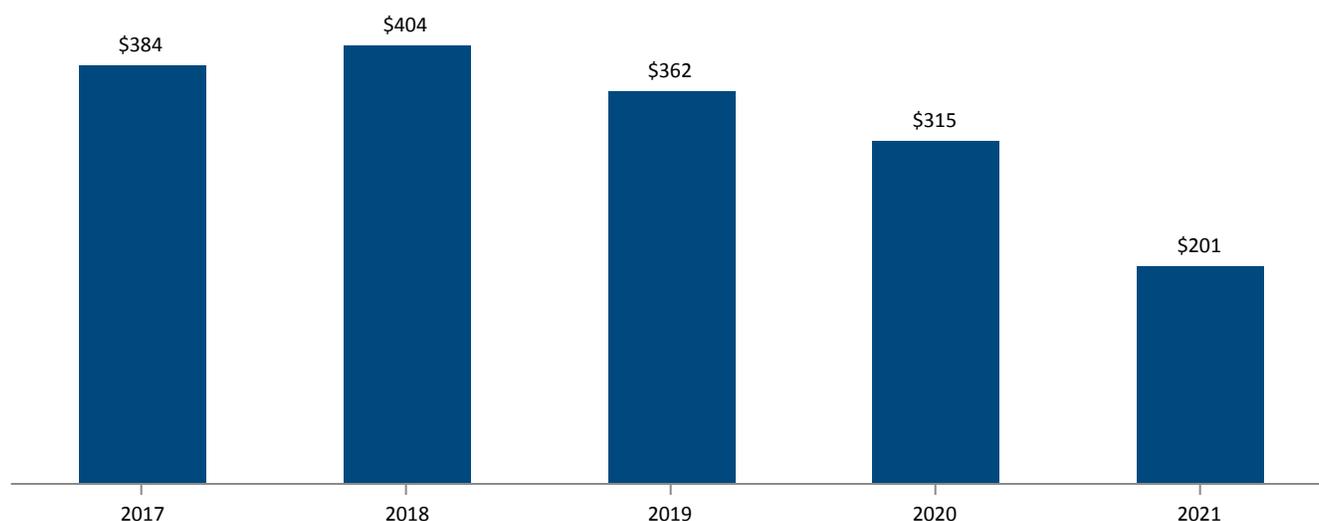
Office of Finance Expenses. The FHLBanks also fund the operating and capital expenditures of the Office of Finance, a joint office of the FHLBanks that issues and services consolidated obligations, prepares the FHLBanks' quarterly and annual combined financial reports, and performs certain other functions.

Affordable Housing Program (AHP) Assessments

Each FHLBank is required, by statute, to contribute to its AHP the greater of 10% of its annual income subject to assessment, or the prorated sum required to ensure the aggregate contribution by the FHLBanks is no less than \$100 million for each year. In addition to the required AHP assessment, an FHLBank's board of directors may elect to make voluntary contributions to the AHP. For purposes of the AHP calculation, each FHLBank's income subject to assessment is defined as the individual FHLBank's net income before assessments, plus interest expense related to mandatorily redeemable capital stock. (See [Note 10 - Affordable Housing Program](#) to the accompanying combined financial statements for additional information related to the AHP calculation and [Legislative and Regulatory Developments - Other Legislative Matter - Affordable Housing and Community Investment](#) for information about proposed legislation that may affect the FHLBanks' Affordable Housing Programs.)

AHP helps members provide subsidized and other low-cost funding, as well as grants, to create affordable rental and homeownership opportunities. All FHLBank operating costs for the AHP are included in operating expenses, so all AHP assessments go directly to support affordable housing projects. Figure 31 presents AHP assessments for the most recent five years.

Figure 31 - Affordable Housing Program Assessments
(dollars in millions)



Interbank Eliminations

Interbank eliminations on the Combined Statement of Income include:

- transfers of interbank consolidated bond liabilities;
- interest on purchased consolidated bonds, which is eliminated in interest income and interest expense; and
- fees related to the MPF Program that are eliminated in non-interest income and non-interest expense.

See [Note 1 - Summary of Significant Accounting Policies - Basis of presentation](#) to the accompanying combined financial statements for additional information on the accounting for interbank eliminations.

The amount of total interbank consolidated bonds transferred during a period depends on a variety of factors, including (1) whether an assuming FHLBank can obtain equal or lower funding costs through interbank transfers as compared to issuing new debt, (2) an FHLBank's overall asset/liability management strategy, and (3) current market conditions. Total consolidated bonds with an aggregate principal amount of \$171 million and \$985 million were transferred from an FHLBank to another FHLBank during the years ended December 31, 2021 and 2020.

Table 34 presents the effect of combining adjustments, which include interbank eliminations and rounding adjustments, on the Combined Statement of Income.

Table 34 - Effect of Combining Adjustments on Combined Statement of Income
(dollars in millions)

Effect on	Year Ended December 31,		
	2021	2020	2019
Interest income	\$ (3)	\$ (2)	\$ (5)
Interest expense	13	(1)	(3)
Provision (reversal) for credit losses	1	—	—
Net interest income after provision (reversal) for credit losses	(17)	(1)	(2)
Non-interest income	(29)	(24)	(29)
Non-interest expense	(34)	(39)	(32)
Affordable Housing Program assessments	—	1	—
Net income	\$ (12)	\$ 13	\$ 1

Comprehensive Income

Comprehensive income is comprised of net income and other comprehensive income. Other comprehensive income is reported on the Combined Statement of Comprehensive Income and presents the net change in the accumulated other comprehensive income (loss) balances.

Other comprehensive income was \$513 million for the year ended December 31, 2021, compared to \$440 million for the year ended December 31, 2020, primarily consisting of net unrealized gains on MBS classified as AFS securities and net unrealized gains relating to hedging activities.

Table 35 - Comprehensive Income

(dollars in millions)

	Year Ended December 31,			Change	
	2021	2020	2019	2021 vs. 2020	2020 vs. 2019
Net income	\$ 1,771	\$ 2,791	\$ 3,190	\$ (1,020)	\$ (399)
Other comprehensive income					
Changes in fair value of AFS securities					
Net unrealized gains (losses) on AFS securities	232	522	174	(290)	348
Net change in fair value of other-than-temporarily impaired AFS securities	—	—	(74)	—	74
Total changes in fair value of AFS securities	232	522	100	(290)	422
Changes in non-credit other-than-temporary impairment losses(1)					
Net amount of AFS and HTM impairment losses reclassified to (from) non-interest income	—	—	12	—	(12)
Non-credit losses included in basis of HTM securities sold	—	112	29	(112)	83
Adjustment for transfer of HTM securities to AFS securities	—	32	—	(32)	32
Accretion of non-credit portion on HTM securities	7	22	59	(15)	(37)
Total changes in non-credit OTTI losses	7	166	100	(159)	66
Net unrealized gains (losses) relating to hedging activities	220	(214)	(174)	434	(40)
Other	54	(34)	(24)	88	(10)
Total other comprehensive income (loss)	513	440	2	73	438
Comprehensive income (loss)	\$ 2,284	\$ 3,231	\$ 3,192	\$ (947)	\$ 39

(1) With the adoption of changes to accounting standards on measurement of credit losses for financial instruments on January 1, 2020, the OTTI assessment was replaced with an allowance for credit losses. (See [Note 1 - Summary of Significant Accounting Policies](#) to the accompanying combined financial statements for further information.)

Changes in Fair Value of AFS securities. Changes in the fair value of AFS securities are recorded in other comprehensive income. The net change in unrealized gains (losses) on AFS securities is due primarily to changes in interest rates, credit spreads, the passage of time, and volatility. During the year ended December 31, 2020, the changes in fair value of AFS securities were also affected by the reclassification of realized gains on AFS securities into net income resulting from the sale of AFS securities and the adjustment to fair value for the transfer of HTM securities to AFS securities.

Prior to January 1, 2020, the net change in the fair value of OTTI AFS securities was driven by housing prices and the economic outlook, as well as changes in interest rates, credit spreads, the passage of time, and volatility. (See [Note 1 - Summary of Significant Accounting Policies](#) to the accompanying combined financial statements for information on the prior accounting treatment.)

Changes in Non-Credit OTTI Losses. Changes in non-credit OTTI losses are generally comprised of the net amount of AFS and HTM impairment losses reclassified to (from) non-interest income and the accretion of the non-credit portion on HTM securities. During the year ended December 31, 2020, the changes in non-credit OTTI losses were also comprised of the adjustment to non-credit losses included in the basis of HTM securities sold and the adjustment to non-credit losses for the transfer of HTM securities to AFS securities.

Net Amount of AFS and HTM Impairment Losses Reclassified to (from) Non-interest Income. Prior to January 1, 2020, the net decrease or increase in the non-credit component of AFS and HTM securities with OTTI was reclassified between AOCI and earnings.

Accretion of the Non-credit Portion on HTM Securities. For HTM securities with non-credit-related impairment losses recognized in AOCI prior to January 1, 2020, the non-credit-related impairment is accreted as an increase in the carrying value over the remaining life of the security, based on the amount and timing of future estimated cash flows.

Net Unrealized Gains (Losses) Relating to Hedging Activities. Net unrealized gains (losses) relating to hedging activities is comprised of changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge until earnings are affected by the variability of the cash flows of the hedged transaction and the amounts are reclassified to interest income or interest expense. The FHLBanks' gains (losses) on hedging activities fluctuate with volatility in the overall interest-rate environment and with the positions taken by the FHLBanks to hedge their risk exposure using cash flow hedges.

Liquidity and Capital Resources

Liquidity

Each FHLBank is required to maintain liquidity in accordance with the FHLBank Act, FHFA regulations and guidance, and policies established by its management and board of directors. Each FHLBank seeks to be in a position to meet the credit and liquidity needs of its members and to meet all current and future financial commitments of the FHLBank. Each FHLBank seeks to achieve this objective by managing liquidity positions to maintain stable, reliable, and cost-effective sources of funds while taking into account market conditions, member demand, and the maturity profile of the assets and liabilities of the FHLBank.

The FHLBanks may not be able to predict future trends in member credit needs because member credit needs are driven by complex interactions among a number of factors, including members' mortgage loan originations, other loan portfolio growth, deposit growth, and the attractiveness of advances compared to other wholesale borrowing alternatives. Each FHLBank monitors current trends and anticipates future debt issuance needs to fund its members' credit needs and investment opportunities of the FHLBank. An FHLBank's ability to expand its balance sheet and corresponding liquidity requirements in response to its members' increased credit needs is correlated to its members' requirements for advances and mortgage loans. Alternatively, in response to reduced member credit needs, an FHLBank may allow its consolidated obligations to mature without replacement, or repurchase and retire outstanding consolidated obligations, allowing its balance sheet to shrink. Over time, the FHLBanks historically have had comparatively stable access to funding through a diverse investor base.

Sources of Liquidity. The FHLBanks' primary sources of liquidity are proceeds from the issuance of consolidated obligations, as well as cash and investment holdings that are primarily high-quality, short-, and intermediate-term financial instruments. The FHLBanks' consolidated obligations are not obligations of the United States and are not guaranteed by the United States, but have historically received the same credit rating as the government bond credit rating of the United States. S&P, Moody's, or other rating organizations could downgrade or upgrade the credit ratings of the U.S. government and GSEs, including the FHLBanks and their consolidated obligations. Investors should note that a rating issued by a nationally recognized statistical rating organization is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn at any time.

Investors should evaluate the rating of each nationally recognized statistical rating organization independently. As of March 15, 2022, the FHLBanks' consolidated obligations were rated AA+/A-1+ and Aaa/P-1 (with outlook stable) by S&P and Moody's. Investors should not take the historical or current ratings of the FHLBanks and their consolidated obligations as an indication of future ratings for the FHLBanks or their consolidated obligations.

Other sources of liquidity include advance repayments, payments collected on mortgage loans, proceeds from the issuance of capital stock, and deposits from members. In addition, by law, the Secretary of the Treasury is authorized to purchase up to \$4 billion aggregate principal amount of consolidated obligations of the FHLBanks. This authority may be exercised only if alternative means cannot be effectively employed to permit the FHLBanks to continue to supply reasonable amounts of funds to the mortgage market, and the ability to supply such funds is substantially impaired because of monetary stringency and a high level of interest rates. Any funds borrowed from the U.S. Treasury shall be repaid by the FHLBanks at the earliest practicable date.

Uses of Liquidity. The FHLBanks' primary uses of liquidity are advance originations and consolidated obligation payments. Other uses of liquidity are mortgage loan and investment purchases, dividend payments, and other contractual payments. An FHLBank also maintains liquidity to redeem or repurchase excess capital stock, at its discretion, upon the request of a member or under an FHLBank's capital plan. The FHLBanks do not have any significant commitments for capital expenditures at December 31, 2021.

See [Combined Financial Condition - Advances](#) for advance originations and repayments and [Combined Financial Condition - Consolidated Obligations](#) for net proceeds and payments for consolidated obligations.

FHLBank Funding and Debt Issuance. Changes or disruptions in the capital markets could limit the FHLBanks' ability to issue consolidated obligations. During the year ended December 31, 2021, the FHLBanks maintained continual access to funding. The FHLBanks' funding was generally driven by member demand and was achieved primarily through the issuance of consolidated discount notes and fixed-rate consolidated bonds during the year ended December 31, 2021. Due to the COVID-19 pandemic and the resulting decline in interest rates, investors preferred short-term or callable obligations. During 2021, the FHLBanks continued to benefit from strong investor interest and managed their debt issuance to meet the needs of their members. Average funding spreads of newly-issued consolidated obligations relative to benchmark indices generally improved during 2021, compared to 2020.

Refinancing Risk and Investor Concentration Risk. There are inherent risks in utilizing short-term funding to support longer-dated assets and the FHLBanks may be exposed to refinancing risk and investor concentration risk. Refinancing risk includes the risk that the FHLBanks could have difficulty rolling over short-term obligations when market conditions change or investor confidence in short-term consolidated obligations declines. In managing and monitoring the amounts of financial assets that require refinancing, the FHLBanks consider their contractual maturities, as well as certain assumptions regarding expected cash flows (i.e., estimated prepayments, embedded call optionality, and scheduled amortizations). Investor concentration risk includes the risk that a market-driven or regulatory disruption to certain investor classes could lead to significant investor outflows causing unfavorable market conditions for consolidated obligations. For example, the SEC's implementation of money market fund reforms from 2010 to 2016 resulted in a significant increase in demand for U.S. government and agency debt, including the FHLBanks' short-term consolidated obligations, in the years after implementation of the reforms. The holding of the FHLBanks' consolidated obligations by money market funds, as a percentage of the total outstanding consolidated obligations, was 33% at December 31, 2021, compared to 54% at December 31, 2020, based on data from SEC filings by registered money market funds. While demand from this investor class has benefited the FHLBanks' ability to access short-term funding at attractive costs, this demand could change over time. (See the notes to the accompanying combined financial statements for additional information regarding contractual maturities of certain financial assets and financial liabilities and [Risk Factors - Liquidity Risk](#) for more information on refinancing risk and investor concentration risk.)

Interest-Rate Risk. The FHLBanks may use a portion of the short-term consolidated obligations issued to fund both short- and long-term variable-rate assets. However, funding longer-term variable-rate assets with shorter-term liabilities generally does not expose the FHLBanks to interest-rate risk because the rates on the variable-rate assets reset similarly to the liabilities (either through rate resets or re-issuance of the obligations). The FHLBanks measure and monitor interest-rate risk with commonly used methods and metrics, which include the calculations of market value of equity, duration of equity, and duration gap. (See [Quantitative and Qualitative Disclosures about Market Risk](#) for additional discussion and analysis regarding the FHLBanks' sensitivity to interest rate changes and the use of derivatives to manage their exposure to interest-rate risk.)

Asset/Liability Maturity Profile. Each FHLBank is focused on maintaining an adequate amount of liquidity, and the FHLBanks work collectively to manage system-wide liquidity and funding needs. The FHLBanks are committed to prudent risk management practices and jointly monitor the FHLBank system risks, including by tracking the funding gap, which is a measure of the difference in the projected cash flows from their financial assets and financial liabilities. External factors, including FHLBank member borrowing needs, supply and demand in the debt markets, and other factors may affect the amount of liquidity and the balance between the cash flows for financial assets and financial liabilities. However, due to the FHLBanks' status as GSEs, they have traditionally had ready access to funding at relatively favorable rates.

Regulatory Liquidity Requirements. To protect the FHLBanks against temporary disruptions in access to the debt markets in response to a rise in capital markets volatility, the FHFA requires each FHLBank to:

- have available at all times an amount greater than or equal to its members' current deposits invested in advances with maturities not to exceed five years, deposits in banks or trust companies, and obligations of the U.S. Treasury;
- maintain, in the aggregate, unpledged qualifying assets in an amount at least equal to the amount of its participation in total consolidated obligations outstanding; and
- maintain a base case amount of liquidity measured using a two-component formula:
 - The cash flow component requires each FHLBank to maintain a liquidity reserve equal to a specified number of days (between 10 and 30 calendar days) of the FHLBank's projected funding needs assuming an inability to access capital markets for consolidated obligations and renewal of all maturing advances.
 - The standby letters of credit component requires each FHLBank to hold additional liquid assets equal to a specified percentage (between 1% and 20%) of the FHLBank's outstanding standby letter of credit commitments.

Each FHLBank also maintains a contingency funding plan designed to enable it to address liquidity shortfalls in times of need, such as operational disruptions at an FHLBank and/or the Office of Finance, or short-term capital market disruptions. In addition, each of the FHLBanks performs and reports to the FHFA the results of an annual liquidity stress test. During the year ended December 31, 2021, each of the FHLBanks was in compliance with the FHFA's liquidity requirements, including the FHFA's Advisory Bulletin on liquidity and the FHFA's funding gap guidance for three-month and one-year maturity horizons.

Office of Finance Funding Contingency Plan Policy. The Office of Finance has an allocation methodology for the proceeds from the issuance of consolidated obligations when consolidated obligations cannot be issued in sufficient amounts to satisfy all FHLBank demand for funding during periods of financial distress and when its existing allocation processes are deemed insufficient. The purpose and objective of this allocation methodology is to ensure that guidance is in place to facilitate the ability of the Office of Finance to meet the funding needs of the FHLBanks when market conditions threaten to limit or prevent access to funding in periods of financial distress. In

general, under this methodology, if the FHLBanks lose access to the funding markets at any price, or are unable to issue sufficient volumes of consolidated obligations to satisfy their needs, or the Office of Finance believes that the FHLBank System franchise is at risk, the proceeds in these circumstances will be allocated pro-rata among the FHLBanks in the order of a debt usage hierarchy and, after funding needs in all categories of the hierarchy are satisfied, additional funding allocation will be based on relative FHLBank regulatory capital. The FHLBanks collectively, or the Office of Finance, may determine to use other funding allocation methodologies in these circumstances, if appropriate. As is the case during any instance of a disruption in an FHLBank's ability to access the capital markets, market conditions or this allocation could adversely affect an FHLBank's ability to finance its operations, which could thereby adversely affect that FHLBank's financial condition and results of operations.

Capital Resources

The FHLBanks' ability to expand their balance sheets as member credit needs increase is based, in part, on the capital stock requirements for advances. In addition, FHFA regulations stipulate that each FHLBank must comply with three limits on capital. Although each FHLBank's minimum total regulatory capital-to-assets ratio requirement is 4.0%, each FHLBank strives to maintain a level of retained earnings to support its regulatory capital compliance, stable dividend payments to members, and business growth. At December 31, 2021, each FHLBank was in compliance with its statutory minimum capital requirements. In addition, the FHFA issued an Advisory Bulletin to state its supervisory expectations that each FHLBank maintain a ratio of at least two percent of capital stock to total assets. At December 31, 2021, each FHLBank was in compliance with this guidance. (See [Note 11 - Capital](#) to the accompanying combined financial statements for additional information regarding minimum regulatory capital requirements.)

Regulatory guidance provides that each FHLBank assess, at least once a year, the adequacy of its retained earnings under various future financial and economic scenarios, including:

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

Management and the board of directors of each FHLBank review the capital structure of that FHLBank on a periodic basis to ensure the capital structure supports the risk associated with its assets and addresses applicable regulatory and supervisory matters. In addition, an individual FHLBank may, at its discretion, institute a higher capital requirement to meet internally-established thresholds or to address supervisory matters, limit dividend payments, or restrict excess capital stock repurchases as part of its retained earnings policies.

Joint Capital Enhancement Agreement. The Joint Capital Enhancement Agreement, as amended (Capital Agreement), is intended to enhance the capital position of each FHLBank. The Capital Agreement provides that each FHLBank will, on a quarterly basis, allocate 20% of its net income to a separate restricted retained earnings account until the balance of that account, calculated as of the last day of each calendar quarter, equals at least one percent of that FHLBank's average balance of outstanding consolidated obligations for the calendar quarter. These restricted retained earnings are not available to pay dividends. At December 31, 2021, each of the FHLBanks of Boston, Pittsburgh, and San Francisco had restricted retained earnings that exceeded one percent of its average balance of outstanding consolidated obligations. Accordingly, no further allocation of income into restricted retained earnings is required for those three FHLBanks until such time as the contribution requirement exceeds the balance of restricted retained earnings. Additionally, the Capital Agreement provides that amounts in restricted retained earnings in excess of 150% of an FHLBank's restricted retained earnings minimum (i.e., one percent of that FHLBank's average balance of outstanding consolidated obligations calculated as of the last day of each calendar quarter) may be released from restricted retained earnings. As a result of the FHLBank of San Francisco exceeding this threshold, \$53 million was reclassified from restricted retained earnings to unrestricted retained earnings during the year ended December 31, 2021.

Critical Accounting Estimates

The preparation of financial statements in accordance with GAAP requires each FHLBank's management to make a number of judgments, estimates, and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities (if applicable), and the reported amounts of income and expense during the reported periods. Although each FHLBank's management believes that its judgments, estimates, and assumptions are reasonable, actual results may differ from these estimates.

Each individual FHLBank manages its operations independently and is responsible for establishing its own accounting and financial reporting policies in accordance with GAAP. An individual FHLBank's accounting and financial reporting policies and practices, including accounting estimates, are not always identical to those used by other FHLBanks because alternative policies and presentations are permitted under GAAP in certain circumstances. For example, the FHLBanks might not use the same models and assumptions in determining the fair values of their respective assets and liabilities. The use of different models or assumptions by individual FHLBanks could result in materially different valuations or other estimates, even when similar or identical assets and liabilities are being measured, and could have materially different effects on the net income and retained earnings of the respective FHLBanks, although each of these methodologies is in compliance with GAAP. (See [Explanatory Statement about Federal Home Loan Banks Combined Financial Report](#) for more information.)

The accounting estimates and assumptions discussed in this section are those generally considered by each FHLBank's management to be the most critical to an understanding of its financial statements and the financial data it provides to the Office of Finance for this Combined Financial Report. These estimates require an FHLBank's management to make subjective or complex judgments about matters that are inherently uncertain. Investors are cautioned that future events rarely develop exactly as forecasted, and the best estimates routinely require adjustments, which could be material. A change in an estimate or assumption could have a material effect on an FHLBank's reported results of operations or its financial condition, and differences between the assumptions and estimates used by individual FHLBanks could result in material differences in the reported results of operations and financial condition of those FHLBanks.

Estimates and assumptions that are significant to the results of operations and financial condition of the FHLBanks include those used in conjunction with fair value estimates and derivatives and hedging activities. (See [Note 1 - Summary of Significant Accounting Policies](#) to the accompanying combined financial statements for a description of accounting policies related to these estimates and assumptions.)

Fair Value Estimates

The use of fair value to measure the FHLBanks' financial instruments is fundamental to the FHLBanks' financial statements and is a critical accounting estimate because certain assets and liabilities are carried at fair value, including trading securities, AFS, derivative assets and liabilities, certain advances, certain consolidated obligations, and certain other assets. In addition, certain assets are measured at fair value on a non-recurring basis at December 31, 2021. These assets are subject to fair value adjustments in certain circumstances (for example, when there is evidence of impairment).

GAAP defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (i.e., an exit price). In general, the transaction price will equal the exit price, and therefore represents the fair value of the asset or liability at initial recognition. However, in concluding whether a transaction price represents fair value, each reporting entity is required to consider factors specific to the transaction and the asset or liability. In addition, the reporting entity must determine the unit of account, highest and best use, principal market, and market participants. These determinations allow the reporting entity to define the inputs for fair value and level of hierarchy. The three-level fair value hierarchy prioritizes the inputs into the valuation technique used to measure the fair value of the assets and liabilities held at fair value. The fair value hierarchy gives the highest priority to unadjusted quoted prices in

active markets for identical assets or liabilities (Level 1 measurements) and lowest priority to unobservable inputs (Level 3 measurements).

Table 36 presents the assets and liabilities measured at fair value and their respective percentages compared to total recurring assets and liabilities measured at fair value and to total assets and total liabilities as reported on the Combined Statement of Condition at December 31, 2021. (See [Note 14 - Fair Value](#) to the accompanying combined financial statements for details on fair value measurements.)

Table 36 - Assets and Liabilities Measured at Fair Value at December 31, 2021

(dollars in millions)

	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Assets measured at fair value					
Recurring					
Fair value option	\$ 3,025	\$ —	\$ 3,025	\$ —	\$ —
All other	145,259	6,132	135,177	2,865	1,085
Total recurring assets	148,284	6,132	138,202	2,865	1,085
Non-recurring					
	53	—	1	52	—
Total assets measured at fair value	\$ 148,337	\$ 6,132	\$ 138,203	\$ 2,917	\$ 1,085
Percentage of recurring assets to total recurring assets	100.0 %	4.2 %	93.2 %	1.9 %	0.7 %
Percentage of recurring assets to total assets(2)	20.5 %	0.8 %	19.1 %	0.4 %	0.2 %
Percentage of total assets measured at fair value to total assets(2)	20.5 %	0.8 %	19.1 %	0.4 %	0.2 %
Liabilities measured at fair value					
Recurring					
Fair value option	\$ 48,622	\$ —	\$ 48,622	\$ —	\$ —
All other	177	—	3,752	—	(3,575)
Total recurring liabilities	48,799	—	52,374	—	(3,575)
Total liabilities measured at fair value	\$ 48,799	\$ —	\$ 52,374	\$ —	\$ (3,575)
Percentage of recurring liabilities to total recurring liabilities	100.0 %	—	107.3 %	—	(7.3)%
Percentage of recurring liabilities to total liabilities(2)	7.3 %	—	7.8 %	—	(0.5)%
Percentage of total liabilities measured at fair value to total liabilities(2)	7.3 %	—	7.8 %	—	(0.5)%

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

(2) The percentage is calculated based on the total assets of \$723,238 million and total liabilities of \$674,116 million as reported on the Combined Statement of Condition at December 31, 2021.

Each FHLBank uses valuation techniques that are intended to maximize the use of observable market-based inputs, when appropriate, to value the assets and liabilities carried at fair value on a recurring basis or to determine whether a fair value adjustment is needed for assets and liabilities to be carried at fair value on a non-recurring basis. Given the nature of some of the FHLBanks' financial instruments, clearly determinable market-based valuation inputs are often not available. Therefore, the fair value measurements of these instruments use unobservable inputs and are classified as Level 3 within the fair value hierarchy. Level 3 assets primarily consist of private-label MBS. If observable market based inputs are unavailable, fair values are determined by valuation models that use the following:

- third-party vendor prices;
- discounted cash flows, using market estimates of interest rates and volatility; or
- dealer prices on similar instruments.

The assumptions used in these models are based on each FHLBank's best estimate with respect to the following:

- discount rates;
- prepayments;
- market volatility; and
- other factors.

These assumptions may have a significant effect on the reported fair value of assets and liabilities. The use of different assumptions, as well as changes in market conditions, could result in materially different net income, other comprehensive income, and retained earnings.

Derivatives and Hedging Activities

The FHLBanks enter into derivatives primarily to manage their exposure to changes in interest rates. Through the use of derivatives, the FHLBanks may adjust the effective maturity, repricing frequency, or option characteristics of financial instruments to achieve their risk management objectives.

All derivatives are required to be recorded on the statement of condition at their fair values. Changes in the fair value of all derivatives, excluding those designated as cash flow hedges, are recorded in current period earnings, while changes in the fair value of derivatives that are designated and qualify as cash flow hedges are recorded in other comprehensive income (OCI) until earnings are affected by the variability of the cash flows of the hedged transaction. The FHLBanks are required to recognize unrealized gains and losses on derivative positions whether or not the transaction qualifies for hedge accounting, in which case offsetting gains or losses on the hedged assets or liabilities may also be recognized. Therefore, to the extent certain derivative instruments do not qualify for hedge accounting, or changes in the fair values of derivatives are not exactly offset by changes in their hedged items, the accounting guidance introduces the potential for a considerable mismatch between income and expense recognition for assets or liabilities being hedged and their associated hedging instruments. As a result, during periods of significant changes in market prices and interest rates, the FHLBanks' earnings may exhibit considerable volatility.

The accounting guidance related to derivatives and hedging activities is complex and contains prescriptive documentation requirements. At the inception of each hedge transaction, an FHLBank formally documents the hedging relationship, its risk management objective, and strategy for undertaking the hedge. The judgments and assumptions that are most critical to accounting for derivatives relate to whether a hedging relationship qualifies for hedge accounting and the assessment of the effectiveness of the hedging relationship. In addition, as discussed in [Fair Value Estimates](#) within this section, the fair value measurement of derivatives and hedged items has a significant effect on the actual results being reported. These estimates include subjective assumptions and calculations based on information available as of the date of the financial statements, which could be materially different under different assumptions and calculations.

The FHLBanks expect that their derivative instruments qualifying for hedge accounting will continue to meet the conditions for hedge accounting. However, if their hedges do not qualify for hedge accounting, also known as economic hedges, then the changes in the fair value of the derivatives used as hedges would be reflected in earnings, without an offsetting change in the fair value of the hedged item. As a result, economic hedges could contribute to significant volatility on the FHLBanks' earnings.

If hedging relationships meet the required criteria, two approaches to hedge accounting can be used: short-cut hedge accounting and long-haul hedge accounting.

Short-Cut Hedge Accounting. A short-cut hedging relationship assumes no ineffectiveness; therefore, changes in the fair value of the interest-rate swap and the interest-bearing financial instrument will perfectly offset one another. To qualify for short-cut accounting treatment, a number of restrictive conditions must be met, including but not limited to, the following:

- the notional amount of the interest-rate swap matches the principal amount of the interest-bearing financial instrument being hedged;
- the fair value of the interest-rate swap at the inception of the hedging relationship is zero;
- the formula for computing net settlements under the interest-rate swap is the same for each net settlement; and
- the interest-bearing financial instrument is not prepayable.

Provided that no terms changed, the entire change in the hedging instrument's fair value is considered to be highly effective at achieving offsetting changes in fair values or cash flows of the hedged asset or liability. If all the criteria are met, an FHLBank may apply the short-cut method to a qualifying hedge when the relationship is designated on the trade date of both the hedging instrument and the hedged items (for example, upon commitment to disburse advances or issue consolidated obligation bonds). In many hedging relationships, the hedged item is not recognized for accounting purposes until its settlement date; however, the FHLBanks record the changes in the hedging instrument and the hedged item's fair value beginning on the trade date, but this relationship has no effect on earnings or OCI. If certain criteria are met, a hedging relationship no longer qualifying for short-cut hedge accounting can fall back to the long-haul hedge accounting method without de-designating the hedging relationship.

Long-Haul Hedge Accounting. A long-haul hedging relationship requires an FHLBank to assess, retrospectively and prospectively on at least a quarterly basis, whether the derivative and hedged item have been and are expected to be highly effective in offsetting changes in fair value or cash flows attributable to the hedged risk. An FHLBank may perform dollar-offset prospective testing at the inception of the hedge and calculate retrospective regressions after a sufficient number of data points have been accumulated. Alternatively, an FHLBank may employ regression-based testing prospectively based on valuations derived from historical and current market data. For cash flow hedges, the FHLBanks measure effectiveness using the hypothetical derivative method, which compares the cumulative change in fair value of the actual derivative designated as the hedging instrument to the cumulative change in fair value of a hypothetical derivative having terms that identically match the critical terms of the hedged forecasted transaction. After the initial quantitative effectiveness assessment, the FHLBanks may perform subsequent effectiveness assessments on a qualitative basis if certain criteria are met.

If it is determined that a derivative is not highly effective at hedging the designated exposure, hedge accounting is discontinued. For fair value hedges, the hedged asset or liability is no longer adjusted for changes in fair value, and the cumulative basis adjustment on the hedged item is amortized into earnings over the remaining life of the hedged item. For cash flow hedges, the cumulative fair value gains or losses recorded in AOCI as of the discontinuance date remain in AOCI until earnings are affected by the variability of the cash flows of the previously hedged transaction, at which time these amounts are reclassified from AOCI to earnings. However, if it becomes probable that some or all of the hedged forecasted transactions will not occur by the end of the originally specified time period or within the following two months, any amounts that remain in AOCI related to these transactions are recognized immediately in earnings.

See [Note 1 - Summary of Significant Accounting Policies](#) and [Note 7 - Derivatives and Hedging Activities](#) to the accompanying combined financial statements for additional discussion regarding the FHLBanks' accounting for derivatives and types of hedging transactions.

Recent Accounting Developments

See [Note 2 - Recently Issued and Adopted Accounting Guidance](#) to the accompanying combined financial statements for a discussion regarding the effect of recently issued accounting guidance on the FHLBanks' combined financial condition, combined results of operations, or combined cash flows.

Legislative and Regulatory Developments

Significant legislative and regulatory actions and developments since the beginning of 2021 are summarized below.

Amendment to Financial Industry Regulatory Authority, Inc. Rule 4210: Margining of Covered Agency Transactions. On November 12, 2021, the Financial Industry Regulatory Authority, Inc. (FINRA) amended FINRA Rule 4210 delaying the effectiveness of margining requirements for covered agency transactions until April 26, 2022 (from the original effective date of January 26, 2022). On February 25, 2022, the FINRA further amended FINRA Rule 4210 extending the implementation date of the margining requirements to October 26, 2022. Once the margining requirements are effective, the FHLBanks may be required to collateralize their transactions that are covered agency transactions, which include to be announced transactions (TBAs). These collateralization requirements could have the effect of reducing the overall profitability of engaging in covered agency transactions, including TBAs. Further, the collateralization requirements would expose the FHLBanks to credit risk from their counterparties for such transactions.

Regulatory Interpretation on Eligibility of Mortgage Participations as Collateral for FHLBank Advances. On October 4, 2021, the FHFA published a Regulatory Interpretation on Eligibility of Mortgage Loan Participations as Collateral for Federal Home Loan Bank Advances. The Regulatory Interpretation addresses whether an FHLBank can accept as collateral to secure advances mortgage loan participations that cannot be readily liquidated in the form in which they are to be pledged. The Regulatory Interpretation concludes that mortgage loan participations must meet the requirements of FHFA regulation 12 CFR 1266.7(a)(4), including the requirement that the collateral can be "liquidated in due course" in order to be eligible to secure FHLBank advances. It further concludes that participations for which there would be a known impediment to liquidation do not meet such requirement and therefore are not eligible collateral for advances. Finally, the Regulatory Interpretation rescinds prior guidance from FHLBank System regulators that provide mortgage loan participations may be eligible as collateral under regulatory provisions other than 12 CFR 1266.7(a)(4). The Regulatory Interpretation became effective on December 13, 2021. Although the FHLBanks do not currently expect the Regulatory Interpretation to have a material effect on the FHLBanks' combined financial condition or combined results of operations, this restriction on collateral may negatively affect future borrowing by certain members.

Amendments to U.S. Treasury and Fannie Mae Preferred Stock Purchase Agreement. On January 14, 2021, the U.S. Treasury and Fannie Mae entered into a letter agreement amending the terms of their Preferred Stock Purchase Agreement, which could affect participating financial institutions (PFIs) that participate in the MPF Program's MPF Xtra product (where MPF loans acquired are concurrently sold to Fannie Mae). Under the Preferred Stock Purchase Agreement, the U.S. Treasury provides liquidity to Fannie Mae in exchange for senior preferred stock. Under the Preferred Stock Purchase Agreement amendment, which was originally to take effect on January 1, 2022, the FHFA (acting as conservator for Fannie Mae) and the U.S. Treasury agreed to limit the dollar volume of loans Fannie Mae could purchase from a single seller through Fannie Mae's cash window to \$1.5 billion per year. As administrator of the MPF Program, the FHLBank of Chicago purchases MPF Xtra loans from PFIs and sells them to Fannie Mae via the cash window process. Based on recent volumes for the MPF Xtra product, the Preferred Stock Purchase Agreement amendment would significantly curtail MPF Xtra cash window sales. On September 14, 2021, the FHFA and the U.S. Treasury temporarily suspended certain provisions of the Preferred Stock Purchase Agreement, including limits on Fannie Mae's cash window, until at least September 14, 2022. Although the FHLBanks do not currently expect the cash window limits to have a material effect on the FHLBanks'

combined financial condition or combined results of operations, they may negatively affect the volume of loans that PFIs are able to sell through the MPF Program.

FHLBank Membership Supervisory Letter. On September 9, 2021, the FHFA published a supervisory letter (Supervisory Letter) addressing certain FHLBank membership issues, including:

- requirements for de novo community development financial institutions;
- automatic transfer of membership;
- large non-member institutions merging with small member institutions;
- membership applicant's compliance with financial condition requirements; and
- the definition of insurance company.

The FHFA issued the Supervisory Letter to provide uniform guidance regarding the identified membership issues. The guidance could result in:

- fewer opportunities for FHLBank membership; and/or
- ineligibility for continued membership by certain entities, most notably community development financial institutions, insurance companies, and large institutions that have acquired small members.

Accordingly, the guidance could result in reduced opportunities for the FHLBanks to grow their memberships and, in turn, fewer opportunities to provide their financial services.

Fair Housing and Fair Lending Enforcement. On July 9, 2021, the FHFA published a Policy Statement on Fair Lending to communicate the FHFA's general position on monitoring and information gathering, supervisory examinations, and administrative enforcement related to the Equal Credit Opportunity Act, the Fair Housing Act, and the Federal Housing Enterprises Financial Safety and Soundness Act. The Policy Statement became effective on the date of publication. On August 12, 2021, the FHFA and the U.S. Department of Housing and Urban Development announced they had entered into a Memorandum of Understanding regarding fair housing and fair lending enforcement. Under the Memorandum of Understanding, the two agencies will focus on enhancing their enforcement of the Fair Housing Act, and their oversight of Fannie Mae, Freddie Mac, and the FHLBanks. The FHLBanks continue to monitor these actions and guidance as they evolve and to evaluate their potential effect on the FHLBanks.

U.S. Commodity Futures Trading Commission and Other Derivatives Developments

Wall Street Reform and Consumer Protection Act Margining Requirements. The Wall Street Reform and Consumer Protection Act (Dodd-Frank Act), which was signed into law in July 2010, enacted numerous legal and regulatory changes for the financial services industry, which have been gradually implemented over the ensuing years.

The Dodd-Frank Act mandated the U.S. federal regulation of the over-the-counter (OTC) derivatives market and granted new joint regulatory authority to the SEC and the U.S. Commodity Futures Trading Commission (CFTC) over OTC derivatives. The SEC and CFTC have completed most of their rules to implement the Dodd-Frank Act's requirements. Pursuant thereto, certain derivatives operations of the FHLBanks have become subject to, among other things, new recordkeeping, reporting, and documentation requirements. In addition, certain non-cleared derivatives entered into as part of FHLBanks' derivatives operations have become subject to two-way variation margin requirements and may become subject to two-way initial margin requirements beginning in 2022. These margining requirements are expected to increase the cost of non-cleared derivatives. Collectively, the Dodd-Frank Act requirements have increased the direct and indirect costs of the FHLBanks' hedging and related activities and will likely increase them further in the future.

LIBOR Transition

Adjustable Interest Rate (LIBOR) Act. On March 15, 2022, the Adjustable Interest Rate (LIBOR) Act was signed into law. The legislation provides a statutory fallback mechanism on a nationwide basis to replace LIBOR with a benchmark rate, selected by the Federal Reserve Board based on SOFR, for certain contracts that reference LIBOR and contain no fallback provisions or insufficient fallback provisions.

Financial Conduct Authority Announcement. In July 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that after 2021 it would no longer persuade or compel banks to submit rates for the calculation of LIBOR. On March 5, 2021, the Financial Conduct Authority further announced that LIBOR would either cease to be provided by any administrator or no longer be representative immediately after December 31, 2021 (or, in the case of some more frequently used U.S. dollar LIBOR settings, immediately after June 30, 2023). Under those announcements, the one-week and two-month U.S. dollar LIBOR settings and all non-U.S. dollar LIBOR settings ceased to be provided by any administrator and were no longer representative as of January 1, 2022. The remaining U.S. dollar LIBOR settings will either cease to be provided by any administrator or no longer be representative immediately after June 30, 2023. Although the Financial Conduct Authority does not expect these remaining U.S. dollar LIBOR settings to become unrepresentative before the cessation date, there is no assurance that any of them will continue to be published or be representative through any particular date.

The FHLBanks do not expect the Financial Conduct Authority's announcement in March 2021 to have a material effect on the FHLBanks' combined financial condition or combined results of operations. (See [Risk Factors](#) and [Quantitative and Qualitative Disclosures about Market Risk](#) for more information regarding the FHLBanks' LIBOR transition planning, including the FHLBanks' exposure to LIBOR-indexed financial instruments, and the use of SOFR as an alternative market benchmark.)

Certain Developments Related to the COVID-19 Pandemic

Additional COVID-19 Presidential, Legislative, and Regulatory Developments. In light of the COVID-19 pandemic, the President of the United States, through executive orders, governmental agencies, including the SEC, the Office of the Comptroller of the Currency, the Federal Reserve Board, the FDIC, the National Credit Union Administration, the CFTC, and the FHFA, as well as state governments and agencies, have taken, and may continue to take, actions to provide various forms of relief from, and guidance regarding, the financial, operational, credit, market, and other effects of the pandemic, and Congress has enacted, and may continue to enact, pandemic relief legislation, some of which may have a direct or indirect effect on the FHLBanks and/or their members. Many of these actions are temporary in nature. The FHLBanks continue to monitor these actions and guidance as they evolve and to evaluate their potential effect on the FHLBanks.

For example, on March 11, 2021, President Biden signed into law the American Rescue Plan Act of 2021, which provided an additional \$1.9 trillion dollars for COVID-19 pandemic relief. Among other appropriations, the legislation allocated \$7.25 billion in additional funds to support the Paycheck Protection Program (PPP). This legislation also expanded eligibility for the PPP to include certain nonprofit organizations and digital news services. Since the legislation did not expand the PPP application deadline beyond March 31, 2021, the PPP Extension Act of 2021 was signed into law on March 30, 2021, which extended the application deadline to May 31, 2021. As another example, on June 25, 2021, the Federal Reserve announced a final extension of its Paycheck Protection Program Liquidity Facility (PPP Liquidity Facility) by an additional month to July 30, 2021. The PPP Liquidity Facility provided collateralized PPP loan liquidity to eligible Federal Reserve member financial institutions to facilitate PPP loan originations at such financial institutions. The extension allowed additional processing time for banks, community development financial institutions, and other financial institutions to pledge to the facility any PPP loans approved by the Small Business Administration through the June 30, 2021 expiration of the PPP program.

These and other forms of pandemic-related relief have provided alternative sources of liquidity for FHLBank members, which have tended to reduce the FHLBanks' members needs for advances, as reflected in the decline in advances balances across the FHLBank System during the year ended December 31, 2021. (See [Risk Factors](#) for more information regarding risks related to the COVID-19 pandemic and related developments.)

Other Legislative Matter

Affordable Housing and Community Investment. Legislation has been introduced in the U.S. Senate and House of Representatives that, if enacted in its proposed form, would require that the FHLBanks set aside higher percentages of their earnings for their affordable housing and community investment programs than is currently required under law. Senate bill S. 1684, Federal Home Loan Banks' Mission Implementation Act, and the related House bill, H.R. 3323, would require the FHLBanks to set aside 20% of net income for their Affordable Housing Programs and 10% of net income for newly created community economic development programs. Separately, as part of the subsequent Congressional budget reconciliation process, a legislative proposal is under consideration that would require the FHLBanks to increase their contributions under their Affordable Housing Programs, in each year from 2022 to 2027, to 15% of their net income for the preceding year (with the aggregate annual contributions from the FHLBanks being no less than \$100 million). Increased contributions to the FHLBanks' Affordable Housing Programs would result in less net income being available for other purposes. The FHLBanks continue to closely monitor these proposals and developments.

External Credit Ratings

Since December 31, 2021, no changes to external credit ratings have occurred with regard to the FHLBanks or their consolidated obligations. At March 15, 2022, consolidated obligations were rated AA+/A-1+ by S&P and Aaa/P-1 by Moody's, with outlook stable. S&P, Moody's, or other rating organizations could downgrade or upgrade the credit ratings of the U.S. government and GSEs, including the FHLBanks and their consolidated obligations. Investors should note that a rating issued by a nationally recognized statistical rating organization is not a recommendation to buy, sell, or hold securities, and that the ratings may be revised or withdrawn at any time. Investors should evaluate the rating of each nationally recognized statistical rating organization independently. Investors should not take the historical or current ratings of the FHLBanks and their consolidated obligations as an indication of future ratings for the FHLBanks or their consolidated obligations. Table 37 presents each FHLBank's long-term credit rating, short-term credit rating, and outlook at March 15, 2022.

Table 37 - FHLBanks' Long-Term Credit Ratings, Short-Term Credit Ratings, and Outlook at March 15, 2022

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

Risk Management

The fundamental business of each FHLBank is to provide a readily available, competitively-priced source of funds, in a wide range of maturities, to meet the borrowing demands of its members and housing associates. The principal sources of funds for these activities are the proceeds from the issuance of consolidated obligations and, to a lesser extent, capital and deposits from members. Lending and investing funds, and engaging in derivative transactions, can potentially expose the FHLBanks to a number of risks, including market risk and credit risk. (See [Quantitative and Qualitative Disclosures about Market Risk](#) for a discussion of market risk.) The FHLBanks are also subject to liquidity, operational, and business risks. Each of the FHLBanks and the Office of Finance has established policies and procedures, including board oversight and escalation practices, to evaluate, manage, and control their risks. Each FHLBank must also file periodic compliance reports with the FHFA. The FHFA has established regulations governing the risk management practices of the FHLBanks and conducts annual examinations and interim reviews of each of the FHLBanks and the Office of Finance.

Credit Risk

Advances. Each FHLBank manages its credit exposure to advances through an integrated approach that provides for the ongoing review of the financial condition of its borrowers coupled with collateral and lending policies and procedures designed to limit its risk of loss while balancing its borrowers' needs for a reliable source of funding. Each FHLBank uses a methodology to evaluate its borrowers, based on financial, regulatory, and other qualitative information, including examination reports. Each FHLBank reviews its borrowers' financial condition on an ongoing basis using current information and makes changes to its collateral guidelines to mitigate the credit risk on advances. As of December 31, 2021, the management of each FHLBank believed it had adequate policies and procedures in place to manage its credit risk on advances effectively.

The FHLBanks protect against credit risk on advances by collateralizing all advances. Advances and other credit product obligations to an FHLBank are fully secured with eligible collateral, the value of which is discounted to account for liquidation and other risks, if applicable, and to protect the FHLBanks from credit loss. Collateral that is determined to contain a low level of risk, such as U.S government obligations, is discounted at a lower rate than collateral that carries a higher level of risk, such as commercial real estate mortgage loans. Eligible collateral values are determined by the market value for securities collateral, and the market value or unpaid principal balance for all loan collateral. For collateral which market prices are not readily available, the FHLBanks may use internal or external valuation models or methodologies to determine the fair value of the collateral. These valuation models incorporate assumptions related to factors that may affect collateral values, such as market liquidity, discount rates, potential prepayments, and liquidation and servicing costs in the event of default, among others, which may be adjusted in response to changes in economic and market conditions in order to produce reliable results. The FHLBanks also have policies and procedures for validating the reasonableness of their collateral valuations. In addition, collateral verifications and on-site reviews are performed by the FHLBanks based on the risk profile of the borrower. As a result of stressed market conditions experienced at times during the COVID-19 pandemic, the FHLBanks have taken additional steps to monitor the credit risk on advances. These steps include increased frequency of collateral valuation and identifying, analyzing, and monitoring borrowers with higher risk profiles. At December 31, 2021, each FHLBank had rights to collateral with an estimated value greater than the related outstanding advances.

The FHLBank Act requires that the FHLBanks obtain and maintain collateral from their borrowers to secure advances at the time the advances are originated or renewed. Furthermore, under the FHLBank Act, an FHLBank has a statutory lien on that FHLBank's capital stock held by its members, which serves as further collateral for the indebtedness of these members to the FHLBank. The FHLBank Act also allows the FHLBanks to further protect their security position with respect to advances by allowing them to require the posting of additional collateral, whether or not such additional collateral is eligible to originate or renew an advance. The FHLBanks perfect their security interests by filing applicable financing statements or taking delivery of collateral. In addition, the FHLBank Act states that notwithstanding any other provision of law, any security interest granted to an FHLBank by any

member of any FHLBank, or any affiliate of any member, is entitled to a priority over the claims and rights of any party (including any receiver, conservator, trustee, or similar lien creditor), other than claims and rights that (1) would be entitled to priority under otherwise applicable law, and (2) are held by actual bona fide purchasers for value or by actual secured parties that are secured by actual perfected security interests. Collateral arrangements will vary depending on:

- borrower credit quality, financial condition, and performance;
- borrowing capacity;
- collateral availability; and
- overall credit exposure to the borrower.

Each FHLBank establishes each borrower's borrowing capacity by determining the amount it will lend against each collateral type. Borrowers are also required to collateralize the face amount of any letters of credit issued for their benefit by an FHLBank. With respect to federally-insured depository institutions' borrowers, pursuant to its regulations, the FDIC has recognized the priority of an FHLBank's security interest under the FHLBank Act and the right of an FHLBank to require delivery of collateral held by the FDIC, as receiver, for a failed depository institution. In addition, each FHLBank takes steps necessary to help ensure that its security interest in all collateral pledged by non-depository institutions, such as insurance companies and housing associates, is perfected and protected to the same extent as its security interest in the collateral pledged by depository institutions.

Residential mortgage loans are the principal form of collateral for advances. Collateral eligible to secure new or renewed advances includes:

- one-to-four family and multifamily mortgage loans (delinquent for no more than 90 days) and securities representing such mortgages;
- loans and securities issued, insured, or guaranteed by the U.S. government or any U.S. government agency (for example, mortgage-backed securities issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae);
- cash or deposits in the FHLBank;
- certain other collateral that is real estate-related, such as commercial real estate loans, provided it meets certain eligibility requirements; and
- certain qualifying securities representing undivided equity interests in eligible advance collateral.

To support small and community banks during the COVID-19 pandemic, beginning in 2020, the FHFA permitted the FHLBanks to accept PPP loans as collateral for advances, subject to certain conditions. Each FHLBank generally establishes an overall FHLBank credit limit for each borrower, which caps the amount of FHLBank credit availability to the borrower. This limit is designed to reduce an FHLBank's credit exposure to an individual borrower, while encouraging borrowers to diversify their funding sources. A borrower's total credit limit with an FHLBank includes the principal amount of outstanding advances, the face amount of outstanding letters of credit, the total exposure of the FHLBank to the borrower under any derivative contract, and the credit enhancement obligation of the borrower on mortgage loans sold to the FHLBank. Each FHLBank determines the credit limit of its borrower by evaluating a wide variety of factors, including, but not limited to, the borrower's overall creditworthiness and collateral management practices. The FHLBanks impose borrowing limits on most borrowers with a maximum ranging from 20% to 60% of a borrower's total assets. However, certain borrowers may be approved for a higher borrowing limit when it is supported by that borrower's creditworthiness and collateral.

Collateral discounts, or haircuts, used in determining lending values of the collateral, are calculated to project that the lending value of collateral securing each borrower's obligations exceeds the amount the borrower may borrow from the FHLBanks. Table 38 presents the range of collateral lending values for the blanket lien, listing, and delivery methods of pledging collateral across the FHLBanks.

Collateral lending values are determined by subtracting the collateral haircut from 100%. Certain collateral haircuts may also reflect haircuts applied to advances outstanding based on borrowers' actual financial performance. Effective lending value percentages are equal to the collateral lending value divided by the unpaid principal balance of eligible loan collateral or market value of eligible securities collateral. Average effective lending values are calculated based on the total lending value against eligible collateral for all borrowers without regard to the amount of credit extended to any particular borrower; however, individual borrower credit obligations to the FHLBanks are not cross-collateralized between borrowers.

Table 38 - Effective Lending Values by Type of Collateral at December 31, 2021

Collateral Type	Blanket Lien		Listing		Delivery	
	Range	Average	Range	Average	Range	Average
Single-family mortgage loans(1)	15%-91%	78%	17%-96%	83%	50%-89%	71%
Multifamily mortgage loans	15%-79%	70%	37%-85%	78%	31%-85%	74%
Other U.S. government-guaranteed loans(2)	60%-92%	84%	82%-90%	89%	90%	90%
Home equity loans and lines of credit	15%-73%	58%	29%-89%	65%	28%-68%	56%
Community Financial Institutions (CFI) loans	10%-83%	55%	43%-75%	73%	40%-65%	52%
Commercial real estate loans	16%-80%	67%	24%-81%	70%	51%-89%	70%
Other real estate loans	10%-81%	45%	7%-96%	77%	25%-78%	73%
Cash and U.S. Obligations	n/a	n/a	n/a	n/a	68%-100%	91%
State and local government securities	n/a	n/a	n/a	n/a	2%-92%	88%
Municipal debt	n/a	n/a	n/a	n/a	36%-99%	78%
U.S. agency securities (excluding MBS)	n/a	n/a	n/a	n/a	68%-99%	95%
U.S. agency MBS and collateralized mortgage obligations (CMOs)	n/a	n/a	n/a	n/a	8%-98%	94%
Private-label MBS and CMOs	n/a	n/a	n/a	n/a	49%-97%	76%
CFI securities	n/a	n/a	n/a	n/a	85%-91%	91%
Commercial MBS	n/a	n/a	n/a	n/a	50%-95%	83%
Other securities	n/a	n/a	n/a	n/a	53%-91%	85%
Student loan securities	n/a	n/a	n/a	n/a	95%-96%	95%

(1) Includes Federal Housing Administration and Department of Veterans Affairs loans.

(2) Includes U.S. Government guaranteed mortgage loans and student loans.

n/a Collateral is not pledged using this pledging method.

As of December 31, 2021, there were 72 individual FHLBank borrowers (71 FHLBank members and 1 non-member) that each held advances of at least \$1.0 billion. When a non-member financial institution acquires some or all of the assets and liabilities of an FHLBank member, including outstanding advances and FHLBank capital stock, an FHLBank may allow those advances to remain outstanding to that non-member financial institution. In addition, members that voluntarily or involuntarily terminate membership, such as captive insurers, can be non-members with advances outstanding. Non-members would be required to meet all of that FHLBank's credit and collateral requirements, including requirements regarding creditworthiness and collateral borrowing capacity.

A borrower's total credit obligation to an FHLBank could include outstanding advances, notional amount of letters of credit, collateralized derivative contracts, and credit enhanced obligations on mortgage loans sold to the

FHLBank. Eligible collateral values include market values for securities and the unpaid principal balance for all other collateral pledged by the blanket lien, listing, or delivery method. The collateralization ratio for borrowers with at least \$1.0 billion in advances outstanding was 3.0 at December 31, 2021, which represents the total of these 72 individual FHLBank borrowers' eligible collateral divided by these borrowers' advances and other credit products outstanding. The collateralization ratio for all borrowers was 4.6 at December 31, 2021. However, individual borrower credit obligations to the FHLBanks are not cross-collateralized between borrowers.

Table 39 presents advances, other credit products (which primarily includes notional amount of letters of credit), and collateral outstanding for borrowers with at least \$1.0 billion of advances outstanding as compared to all borrowers.

Table 39 - Advances, Other Credit Products, and Collateral Outstanding at December 31, 2021

(dollars in millions)

	Borrowers with at Least \$1.0 Billion of Advances Outstanding	All Borrowers	Percentage
Advances outstanding, principal amount	\$ 215,509	\$ 349,383	61.7 %
Other credit products	\$ 34,388	\$ 132,536	25.9 %
Collateral outstanding	\$ 761,771	\$ 2,224,821	34.2 %

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

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

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

Table 40 presents information on a combined basis regarding the type of collateral securing advances and other credit products outstanding.

Table 40 - Type of Collateral Securing Advances and Other Credit Products Outstanding at December 31, 2021
(dollars in millions)

Collateral Type	Blanket Lien		Listing		Delivery		Total	
	Amount	Percentage	Amount	Percentage	Amount	Percentage	Amount	Percentage
Single-family mortgage loans(1)	\$ 494,985	22.3%	\$ 560,290	25.2%	\$ 3,126	0.1%	\$ 1,058,401	47.6%
Commercial real estate loans	339,617	15.3%	118,905	5.3%	41,047	1.8%	499,569	22.4%
Multifamily mortgage loans	73,594	3.3%	114,336	5.1%	19,030	0.9%	206,960	9.3%
U.S. agency MBS and CMOs	n/a	n/a	n/a	n/a	139,381	6.3%	139,381	6.3%
Home equity loans and lines of credit	53,092	2.4%	59,635	2.7%	1	—	112,728	5.1%
Other real estate loans	57,540	2.6%	16,590	0.7%	4,437	0.2%	78,567	3.5%
CFI loans	31,350	1.4%	1,195	0.1%	14	—	32,559	1.5%
Commercial MBS	n/a	n/a	n/a	n/a	25,209	1.1%	25,209	1.1%
U.S. obligations	n/a	n/a	n/a	n/a	21,609	1.0%	21,609	1.0%
U.S. agency securities (excluding MBS)	n/a	n/a	n/a	n/a	15,450	0.7%	15,450	0.7%
Private-label MBS and CMOs	n/a	n/a	n/a	n/a	7,139	0.3%	7,139	0.3%
Other(2)	630	—	2,278	0.1%	24,341	1.1%	27,249	1.2%
Total collateral	\$ 1,050,808	47.3%	\$ 873,229	39.2%	\$ 300,784	13.5%	\$ 2,224,821	100.0%

(1) Includes Federal Housing Administration and Department of Veterans Affairs loans.

(2) Includes PPP loans.

n/a Collateral is not pledged using this pledging method.

Figures 32 and 33 present the percentage of collateral securing advances and other credit products by type and the percentage of collateral securing advances and other credit products by pledging method at December 31, 2021.

Figure 32 - Percentage of Collateral Securing Advances and Other Credit Products by Type

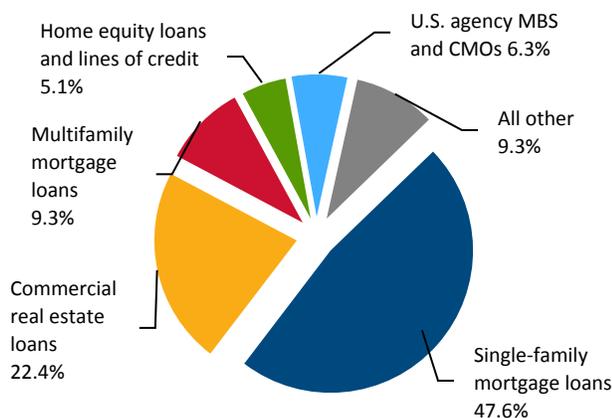
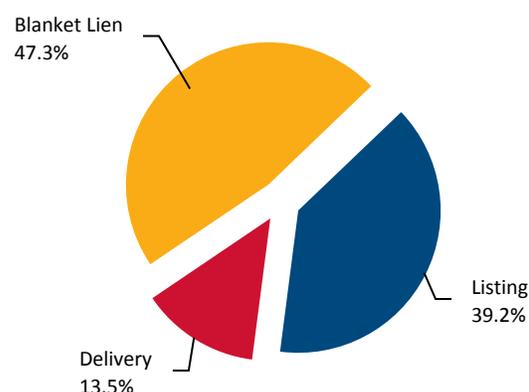


Figure 33 - Percentage of Collateral Securing Advances and Other Credit Products by Pledging Method



The FHLBank Act also permits borrowers that qualify as a Community Financial Institution (CFI) to pledge certain CFI-specific collateral to the extent that its FHLBank accepts those loans as collateral for advances. The FHLBank Act defines CFIs as depository institutions insured by the FDIC with average total assets over the preceding three-year period of less than \$1.0 billion (the average total asset cap), with the average total asset cap adjusted annually for inflation. The average total asset cap for 2021 was \$1.239 billion and the average total asset cap for 2022 is \$1.323 billion.

The FHLBanks that accept CFI-specific collateral mitigate the potential increased credit risk through higher haircuts (lower lending values) on that collateral as presented in Table 38. CFI-specific collateral consists of small business, small farm, and small agri-business loans. Furthermore, the FHFA provides the FHLBanks with regulatory authority to receive community development loans as collateral for advances from CFI members.

Borrower Failures. The financial condition of all members and housing associates is closely monitored for compliance with financial criteria as set forth in each FHLBank's credit policies. During the year ended December 31, 2021, no FHLBank incurred any credit loss on any of its advances, including advances to failed borrowers. All extensions of credit by the FHLBanks to borrowers are secured by eligible collateral. However, if a borrower were to default, and the value of the collateral pledged by the borrower declined to a point such that an FHLBank was unable to realize sufficient value from the pledged collateral to cover the borrower's obligations, and an FHLBank was unable to obtain additional collateral to make up for the reduction in value of that collateral, that FHLBank could incur losses. Defaults by borrowers with significant obligations to the FHLBanks could result in significant financial losses, which would adversely affect the FHLBanks' results of operations and financial condition.

Investments. The FHLBanks are subject to credit risk on investments consisting of investment securities, interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold. These investments are generally transacted with government agencies and large financial institutions that are considered by an individual FHLBank to be of investment quality. FHFA regulation defines investment quality as a determination by an FHLBank, with respect to a security, that there is adequate financial backing so that full and timely payment of principal and interest on such a security is expected, and the FHLBank determines that there is minimal risk that the timely payment of principal and interest would not occur because of adverse changes in economic and financial conditions during the projected life of the security.

The FHLBanks maintain short-term investment portfolios, the proceeds of which may provide funds to meet the credit needs of their members and to maintain liquidity. Within this portfolio of short-term investments, the FHLBanks may have unsecured credit exposure on certain investments.

The FHLBanks maintain long-term investment portfolios as an additional source of liquidity and to earn interest income. These investments generally provide the FHLBanks with higher returns than those available on short-term investments. Within this portfolio of long-term investments, the FHLBanks are subject to credit risk related to private-label mortgage-backed securities that are either directly or indirectly supported by underlying mortgage loans. Each private-label mortgage-backed security may contain one or more forms of credit protection/enhancements, including, but not limited to, (1) guarantee of principal and interest, (2) subordination, (3) over-collateralization and excess interest, and (4) third-party insurance. Credit enhancement achieved through subordination features results in the subordination of payments to junior classes to support cash flows received by senior classes held by investors such as the FHLBanks.

Regulatory Restrictions on Investments. To minimize credit risk on investments, the FHLBanks are prohibited by FHFA regulations from investing in any of the following security types:

- instruments, such as common stock that represent an ownership interest in an entity, other than stock in small business investment companies or certain investments targeted at low-income persons or communities;
- instruments issued by non-U.S. entities, other than those issued by U.S. branches and agency offices of foreign commercial banks (e.g., federal funds);
- debt instruments that are not investment quality, other than certain investments targeted at low-income persons or communities and instruments that became less than investment quality after their purchase by the FHLBank;

- whole mortgages or other whole loans, or interests in mortgages or loans, other than:
 - whole mortgages or loans acquired under an FHLBank’s Acquired Member Asset program;
 - certain investments targeted at low-income persons or communities;
 - certain marketable direct obligations of state, local, or tribal government units or agencies that are investment quality;
 - mortgage-backed securities (which include agency and private-label pools of commercial and residential mortgage loans), or asset-backed securities collateralized by manufactured housing loans or home equity loans that meet the definition of the term “securities” under the Securities Act of 1933, as amended; and
 - certain foreign housing loans authorized under section 12(b) of the FHLBank Act;
- residual interest and interest accrual classes of securities;
- interest-only and principal-only securities;
- mortgage-backed securities or eligible asset-backed securities that on the trade date are at rates equal to their contractual cap, with average lives that vary more than six years under an assumed instantaneous rate change of 300 basis points, unless the instrument qualifies as an Acquired Member Asset; and
- foreign currency or commodity positions.

The FHFA issued a supervisory letter in September 2019 that specified that the FHLBanks stop purchasing investments that reference LIBOR and mature after December 31, 2021, subject to certain limited exceptions as specified in the letter. (See [Quantitative and Qualitative Disclosures about Market Risk - Interest-Rate Risk](#) for more information.) In addition, the FHFA issued an Advisory Bulletin in August 2021 that recommends risk management practices, including the establishment of certain limits, to address the risks associated with unexpected prepayments of U.S. agency and GSE multifamily investments.

Investment Quality and Ratings. The FHLBanks seek to reduce the credit risk by investing in investment-quality securities. The FHLBanks consider a variety of credit quality factors when analyzing potential investments, including collateral performance, marketability, asset class or sector considerations, local and regional economic conditions, credit ratings based on the nationally recognized statistical rating organization(s), or the financial health of the underlying issuer. Although the FHLBanks invested in private-label mortgage-backed securities that at the date of purchase were substantially all rated triple-A, many of these securities have incurred credit losses based on economic conditions and housing market trends since the FHLBanks originally purchased them. Figure 34 presents the composition of total investments by credit rating at December 31, 2021.

Figure 34 - Total Investments by Credit Rating at December 31, 2021

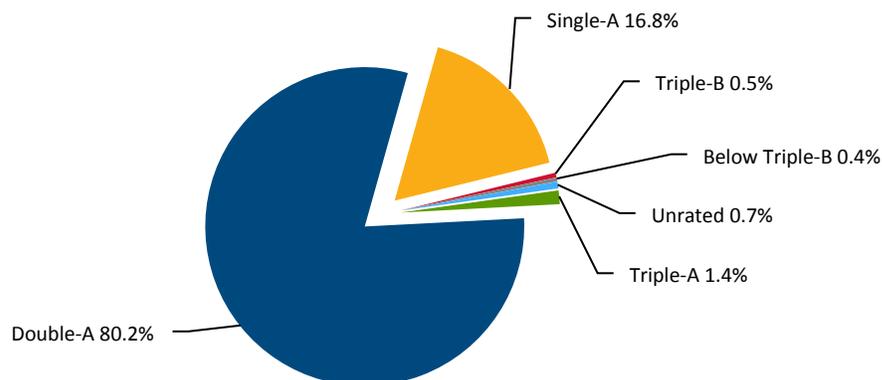


Table 41 presents the credit ratings of the investment securities held by the FHLBanks as of December 31, 2021, using the lowest long-term credit rating for each security owned by an individual FHLBank based on the nationally recognized statistical rating organization(s) used by that FHLBank. The internal ratings of an individual FHLBank may differ from those obtained from the nationally recognized statistical rating organization(s) and other FHLBank internal ratings. Investors should not take the historical or current ratings displayed in this table as an indication of future ratings.

Table 41 - Investment Ratings*(dollars in millions)*

Carrying Value, Net	December 31, 2021(1)(2)						
	Triple-A	Double-A	Single-A	Triple-B	Below Triple-B	Unrated	Total
Interest-bearing deposits	\$ —	\$ —	\$ 5,886	\$ 496	\$ —	\$ —	\$ 6,382
Securities purchased under agreements to resell	2,120	48,932	11,240	500	—	1,500	64,292
Federal funds sold	—	12,682	34,379	299	—	—	47,360
Investment securities by major security type							
Non-mortgage backed securities							
Certificates of deposit	—	—	200	—	—	—	200
U.S. Treasury obligations	—	44,296	—	—	—	—	44,296
Other U.S. obligations	—	4,514	—	—	—	—	4,514
GSE and Tennessee Valley Authority obligations	—	14,560	—	—	—	—	14,560
State or local housing agency obligations	686	1,597	2	2	—	—	2,287
Federal Family Education Loan Program ABS	—	2,772	—	—	—	—	2,772
Other	864	66	—	—	—	1	931
Total non-mortgage-backed securities	1,550	67,805	202	2	—	1	69,560
Mortgage-backed securities							
U.S. obligations single-family	—	7,756	—	—	—	—	7,756
U.S. obligations multifamily	—	541	—	—	—	—	541
GSE single-family	5	16,704	3	—	2	—	16,714
GSE multifamily	701	92,963	—	—	—	—	93,664
Private-label	—	47	144	96	1,194	721	2,202
Total mortgage-backed securities	706	118,011	147	96	1,196	721	120,877
Total investment securities	2,256	185,816	349	98	1,196	722	190,437
Total Investments	\$ 4,376	\$ 247,430	\$ 51,854	\$ 1,393	\$ 1,196	\$ 2,222	\$ 308,471

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after December 31, 2021.

(2) Net carrying values do not include related accrued interest and are presented after any allowance for credit losses.

Monoline Bond Insurance. Certain FHLBank investment securities portfolios include a limited number of investments that are insured by monoline bond insurers. The monoline insurance on these investments guarantees the timely payment of principal and interest if these payments cannot be satisfied from the cash flows of the underlying mortgage collateral. As of December 31, 2021 and December 31, 2020, total monoline bond insurance coverage was \$59 million and \$87 million. Due to the financial condition of certain of the insurers, the FHLBanks limit their reliance on coverage when evaluating exposure to credit losses from the mortgage loans underlying their investment in private-label mortgage-backed securities.

Short-term Investments. The FHLBanks maintain short-term investment portfolios, the proceeds of which may provide funds to meet the credit needs of their members and to maintain liquidity. The FHLBank Act and FHFA regulations set liquidity requirements for the FHLBanks, and an individual FHLBank's board of directors may also adopt additional liquidity policies. In addition, each FHLBank maintains a contingency funding plan in the event of operational disruptions at either the FHLBanks or the Office of Finance. (See [Liquidity and Capital Resources](#) for a discussion of the FHLBanks' liquidity management.)

Within the portfolio of short-term investments, the FHLBanks are subject to credit risk from unsecured credit exposures with private counterparties. Each FHLBank manages its own credit risk independently. The FHLBanks' unsecured credit investments may have maturities ranging between overnight and nine months, and generally include the following types:

- Interest-bearing deposits. Primarily consists of unsecured deposits that earn interest.
- Federal funds sold. Unsecured loans of reserve balances at the Federal Reserve Banks between financial institutions that are made on an overnight and term basis.
- Certificates of deposit. Unsecured negotiable promissory notes issued by banks and payable to the bearer on demand.

Table 42 presents the FHLBanks' unsecured credit exposure with private counterparties by investment type. At December 31, 2021, the FHLBanks had aggregate unsecured credit exposure from investments of \$1 billion or more to each of 12 private counterparties. The aggregate unsecured credit exposure to these counterparties represented 96% of the FHLBanks' total unsecured investment credit exposure to private counterparties. The unsecured investment credit exposure presented in Table 42 does not reflect the average or maximum exposure during the period, as the balances presented reflect the balances at period end.

Table 42 - Unsecured Credit Exposure by Investment Type

(dollars in millions)

Carrying Value(1)(2)	December 31, 2021	December 31, 2020
Interest-bearing deposits	\$ 6,382	\$ 8,076
Federal funds sold	47,360	31,510
Certificates of deposit	200	750
Total	\$ 53,942	\$ 40,336

(1) Excludes unsecured investment credit exposure to U.S. government, U.S. government agencies, government instrumentalities, government-sponsored enterprises, and supranational entities, and does not include related accrued interest.

(2) May include unsecured investment credit exposure to members. (See [Security Ownership of Certain Beneficial Owners and Certain Relationships and Related Transactions](#) for further discussion of related-party transactions.)

Each FHLBank actively monitors its credit exposures and the credit quality of its counterparties, including an assessment of each counterparty's financial performance, capital adequacy, sovereign support, and the current market perceptions of the counterparties. General macroeconomic, political, and market conditions may also be considered when deciding on unsecured exposure. As a result, the FHLBanks may limit or suspend existing exposures.

FHFA regulations include limits on the amount of unsecured credit an individual FHLBank may extend to a counterparty or to a group of affiliated counterparties. The limit on the amount of unsecured credit extended to a counterparty is calculated by multiplying the eligible capital by the maximum capital exposure limit applicable to the counterparty. Under these regulations, the level of eligible capital is determined as the lesser of an individual FHLBank's total regulatory capital or the eligible amount of Tier 1 capital or regulatory capital of the counterparty. The maximum capital exposure limit is based on the counterparty's overall FHFA credit rating and ranges from 1% to 15%. Extensions of unsecured credit by an individual FHLBank to a counterparty arise from on-balance sheet transactions, off-balance sheet commitments, and derivative transactions. (See [Credit Risk - Derivative Counterparties](#) for additional information related to derivatives exposure.)

FHFA regulations also permit the FHLBanks to extend additional unsecured credit for sales of federal funds with a maturity of one day or less and sales of federal funds subject to a continuing contract that renews automatically. An FHLBank’s total unsecured exposure to a counterparty may not exceed twice the regulatory limit for term exposures, or a total of 2% to 30% of the eligible amount of capital, based on the counterparty’s credit rating. As of December 31, 2021, each of the FHLBanks was in compliance with the regulatory limits established for unsecured credit.

The FHLBanks are prohibited by FHFA regulations from investing in financial instruments issued by non-U.S. entities, other than those issued by U.S. branches and agency offices of foreign commercial banks. The FHLBanks’ unsecured credit exposures to U.S. branches and agency offices of foreign commercial banks include the risk that, as a result of political or economic conditions in a country, the counterparty may be unable to meet its contractual repayment obligations. The FHLBanks’ unsecured credit exposures to domestic counterparties and U.S. subsidiaries of foreign commercial banks include the risk that these counterparties have extended credit to foreign counterparties. As of December 31, 2021, an FHLBank held full faith and credit U.S. guaranteed securities with foreign issuers totaling \$420 million. Other than these investments, the FHLBanks are in compliance with the FHFA regulation as of December 31, 2021.

As of December 31, 2021, the FHLBanks’ unsecured investment credit exposure to U.S. branches and agency offices of foreign commercial banks was comprised of federal funds sold and certificates of deposit. As of December 31, 2021, 99% of the FHLBanks’ unsecured investments in federal funds sold and all of the FHLBanks’ unsecured investments in certificates of deposit were to U.S. branches and agency offices of foreign commercial banks.

Figures 35 and 36 present total unsecured investment credit exposure by credit rating and by contractual maturity at December 31, 2021.

Figure 35 - Total Unsecured Investment Credit Exposure by Credit Rating (dollars in billions)

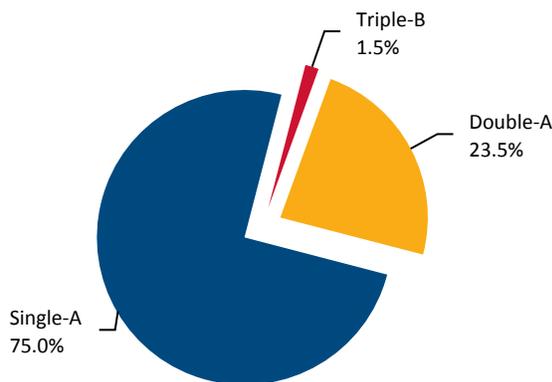


Figure 36 - Total Unsecured Investment Credit Exposure by Contractual Maturity (dollars in billions)

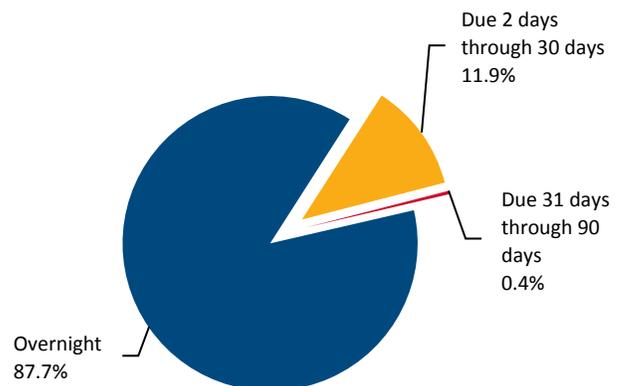


Table 43 presents the lowest long-term credit ratings of the unsecured investment credit exposures presented by the domicile of the counterparty or the domicile of the counterparty’s immediate parent for U.S. branches and agency offices of foreign commercial banks based on the nationally recognized statistical rating organization(s) used by the individual FHLBank holding the investment. This table does not reflect the foreign sovereign government’s credit rating. The internal ratings of an individual FHLBank may differ from those obtained from the

nationally recognized statistical rating organization(s) and other FHLBank internal ratings. Investors should not take the historical or current ratings displayed in this table as an indication of future ratings.

Table 43 - Ratings of Unsecured Investment Credit Exposure by Domicile of Counterparty at December 31, 2021⁽¹⁾
(dollars in millions)

Carrying Value(2)	Investment Grade			Total
	Double-A	Single-A	Triple-B	
Domestic	\$ —	\$ 5,998	\$ 795	\$ 6,793
U.S. branches and agency offices of foreign commercial banks				
Canada	3,350	17,036	—	20,386
Australia	4,367	6,068	—	10,435
Netherlands	—	5,699	—	5,699
Finland	4,015	—	—	4,015
Germany	950	2,610	—	3,560
United Kingdom	—	1,403	—	1,403
France	—	1,396	—	1,396
Sweden	—	200	—	200
Austria	—	55	—	55
Total U.S. branches and agency offices of foreign commercial banks	12,682	34,467	—	47,149
Total unsecured investment credit exposure	\$ 12,682	\$ 40,465	\$ 795	\$ 53,942

(1) Does not reflect any changes in ratings, outlook, or watch status occurring after December 31, 2021.

(2) Excludes unsecured investment credit exposure to U.S. government, U.S. government agencies, government instrumentalities, government-sponsored enterprises, and supranational entities, and does not include related accrued interest.

Table 44 presents the contractual maturity of the FHLBanks' unsecured investment credit exposure by the domicile of the counterparty or the domicile of the counterparty's immediate parent for U.S. branches and agency offices of foreign commercial banks. The FHLBanks also reduce the credit risk on investments by generally investing in investments that have short-term maturities. At December 31, 2021, 88% of the carrying value of the total unsecured investments held by the FHLBanks had overnight maturities.

Table 44 - Contractual Maturity of Unsecured Investment Credit Exposure by Domicile of Counterparty at December 31, 2021
(dollars in millions)

Carrying Value(1)	Overnight	Due 2 days through 30 days	Due 31 days through 90 days	Total
U.S. branches and agency offices of foreign commercial banks				
Canada	17,871	2,315	200	20,386
Australia	9,615	820	—	10,435
Netherlands	4,909	790	—	5,699
Finland	3,360	655	—	4,015
Germany	2,550	1,010	—	3,560
United Kingdom	1,403	—	—	1,403
France	1,020	376	—	1,396
Sweden	—	200	—	200
Austria	—	55	—	55
Total U.S. branches and agency offices of foreign commercial banks	40,728	6,221	200	47,149
Total unsecured investment credit exposure	\$ 47,322	\$ 6,420	\$ 200	\$ 53,942

(1) Excludes unsecured investment credit exposure to U.S. government, U.S. government agencies, government instrumentalities, government-sponsored enterprises, and supranational entities and does not include related accrued interest.

Mortgage Loans Held for Portfolio. The FHFA’s Acquired Member Asset (AMA) regulation permits the FHLBanks to purchase and hold specified mortgage loans from their members. Each FHLBank has established or participated in the Acquired Member Asset programs such as the MPF Program and MPP as services to their members. The FHLBank of San Francisco discontinued purchasing new mortgage loans in the MPF Program during 2021. In addition, the FHLBank of New York implemented the MAP in order to replace its participation in the MPF Program beginning in March 2021. Members and eligible housing associates may apply to become a participating financial institution (PFI) of their respective FHLBank. The mortgage loans purchased under these programs may carry more credit risk than advances, even though the respective member or housing associate provides credit enhancement and bears a portion of the credit risk.

The FHFA’s AMA regulation on credit risk sharing allows an FHLBank to utilize its choice of model and methodology to determine the credit enhancement for AMA loan assets and pool loans. The assets delivered must be credit enhanced by the members up to an FHLBank determined “AMA investment-grade” instead of a specific nationally recognized statistical rating organization’s ratings.

An FHLBank must hold risk-based capital against acquired mortgage loans based on the applicable percentage required by the FHFA. This percentage is determined by the credit rating of those assets after taking into account any credit enhancements on those assets.

Due to the negative economic effects associated with the COVID-19 pandemic, the FHLBanks implemented temporary relief provisions for MPP and MPF Program loans, including forbearance under the CARES Act, temporary moratoriums on foreclosures and evictions, and temporary alternative underwriting procedures.

Management at each FHLBank believes that it has adequate policies and procedures in place to manage credit risk on mortgage loans appropriately. Each FHLBank that is currently participating in, or previously participated in, the Acquired Member Asset programs evaluates the mortgage loans held for investment to estimate an allowance for credit losses. (See [Note 6 - Mortgage Loans](#) to the accompanying combined financial statements for additional information about mortgage loan payment status, allowance for credit losses, and other delinquency statistics.)

Table 45 presents the comparison of MPF, MPP, and MAP products.

Table 45 - MPF, MPP, and MAP Product Comparison at December 31, 2021

Product Name	Mortgage	Loan Balance	Held for Investment (Portfolio) or Sale
MPF Original(1), MPF 35(1), MPF 100(1)(2), MPF 125(1), and MPF Plus(1)(2)	Conventional	Conforming	Held for Investment
MPF Government	Government(3)	Determined by the applicable government agency eligibility guidelines	Held for Investment
MPF Xtra®	Conventional	Conforming	Held for Sale, and are concurrently sold to the Federal National Mortgage Association (Fannie Mae).
MPF Direct(2)	Conventional	Non-conforming (jumbo - up to \$2,500,000)	Held for Sale, and are concurrently sold to a third party investor.
MPF Government MBS	Government(3)	Determined by the applicable government agency eligibility guidelines	Government loans are held in portfolio for a short period of time until such loans are pooled into Ginnie Mae MBS.
MPP/MAP	Conventional	Conforming	Held for Investment
MPP/MAP FHA	Government(3)	Conforming	Held for Investment

(1) PFIs share in the associated credit risk of these MPF Loan products in accordance with the FHFA Acquired Member Assets (AMA) regulation requirements.

(2) MPF 100, MPF Plus, and MPF Direct are not currently offered.

(3) Government Loans are insured or guaranteed by one of the following government agencies: the Federal Housing Administration (FHA); the Department of Veterans Affairs (VA); Rural Housing Service of the Department of Agriculture (RHS); or Department of Housing and Urban Development (HUD) (collectively, Government Loans).

MPF Loans - Loss Allocation. Credit losses on conventional MPF loans held for portfolio not absorbed by the borrower's equity in the mortgaged property, property insurance, or primary mortgage insurance (PMI) are allocated for each master commitment between an FHLBank participating in the MPF program (MPF FHLBank) and the PFI as follows:

- First, credit losses are allocated to an FHLBank up to a specified amount referred to as the First Loss Account, but these initial losses are recovered by withholding performance-based credit enhancement fees, when applicable. Each PFI is paid a monthly credit enhancement fee for managing credit risk on the mortgage loans. In certain cases, the credit enhancement fees are performance-based, which provides incentive to the PFI to minimize credit losses on MPF loans. These fees may be withheld to recover losses incurred by an MPF FHLBank for each master commitment, if any, up to the First Loss Account and the amount of such withholding is a component of the overall credit enhancement provided by the PFI.
- Second, credit losses not recoverable by performance-based credit enhancement fees are allocated to the MPF FHLBank up to the amount of the First Loss Account maintained by that MPF FHLBank. The First Loss Account functions as a tracking mechanism for determining the point at which a PFI would solely cover the next layer of losses. An MPF FHLBank's First Loss Account exposure varies by MPF loan product type.
- Third, credit losses in excess of the First Loss Account, if any, are allocated to the PFI under its credit enhancement obligation, up to the amount specified in the master commitment under which the loan was purchased. The credit enhancement amount may consist of a direct liability of the PFI to pay credit losses up to a specified amount, a contractual obligation of the PFI to provide supplemental mortgage insurance (SMI), or a combination of both. The PFI is required to pledge collateral to secure any portion of its credit enhancement amount that is a direct obligation.
- Fourth, any remaining unallocated losses are absorbed by an MPF FHLBank.

An MPF FHLBank's share of credit losses is based on its respective participation interest in the entire master commitment. The MPF FHLBanks also face credit risk through potential losses on conventional MPF loans to the extent that those losses are not recoverable from PFIs, and with respect to MPF Government loans, amounts not recoverable from the applicable government agency, servicer, or PFI, as applicable. The outstanding balance of MPF loans exposed to credit losses that are not recoverable from these sources was approximately \$34.9 billion and \$39.3 billion at December 31, 2021 and 2020. The MPF FHLBanks' actual credit exposure is less than these amounts because the borrower's equity, which represents the fair value of underlying property in excess of the outstanding MPF loan balance, has not been considered. The MPF FHLBanks require PMI for those loans with a loan-to-value ratio over 80% at origination.

MPF Loans - Setting Credit Enhancement Levels. For conventional MPF loans, credit losses in a master commitment are first absorbed by the FHLBank's First Loss Account, but if applicable to the MPF product, the FHLBank will withhold a PFI's scheduled performance credit enhancement fee in order to reimburse themselves for any losses allocated to the First Loss Account. If the First Loss Account is exhausted, the credit losses are then absorbed by the PFI's credit enhancement amount that is calculated by utilizing third party credit models.

The PFI's credit enhancement amount is determined by an FHLBank, based on documented analysis, that the FHLBank has a high degree of confidence that it will not bear material credit losses beyond the losses absorbed by the FHLBank's First Loss Account, even under reasonably likely adverse changes to expected economic conditions. Loans are assessed using third party credit models at acquisition and the amount of the PFI's credit enhancement is calculated based on credit attributes of the loans in each master commitment.

The credit enhancement amounts and the First Loss Account for certain conventional MPF Products held in an FHLBank's portfolio may be periodically reset lower for each master commitment after a required period of

seasoning, because the amount of credit enhancement necessary to maintain an FHLBank's risk of credit losses within that FHLBank's risk tolerance for any master commitment is usually reduced over time.

MPP Loans - Loss Allocation. Each FHLBank participating in the MPP (MPP FHLBank) is exposed to credit risk on loans purchased from members through its MPP. Like the MPF Program, MPP is governed by the Acquired Member Asset regulation. Mortgage loans purchased from PFIs under this program also must carry sufficient credit enhancements to provide a credit risk exposure within an FHLBank's risk tolerance at the time of purchase. For FHA-insured loans, MPP FHLBanks believe they bear no credit risk, and therefore do not require either a Lender Risk Account or SMI coverage for these U.S. government-insured loans.

The MPP FHLBanks' primary management of credit risk for conventional loans involves the mortgage assets themselves as well as additional layers of credit enhancements. The order of priority for credit enhancements is as follows:

- PMI (when applicable);
- Lender Risk Account; and
- SMI (when applicable).

For conventional loans, PMI, if applicable, covers a portion of credit losses based on the original appraisal, original loan-to-value ratio, term, amount of PMI coverage, and characteristics of the loan. At the time the underlying conventional loan is purchased, a Lender Risk Account is established by the FHLBank for each PFI selling an MPP loan to that FHLBank. Generally, after five years, if the balance of the funds in the Lender Risk Account exceeds the required balance, the excess amounts are distributed to the PFI based on a step-down schedule set forth in the master commitment contract that establishes the Lender Risk Account. In addition to the Lender Risk Accounts, participating MPP FHLBanks with SMI coverage are protected from a portion of the credit losses. This coverage may be exceeded based on the severity of a loss on a loan and in certain cases subject to an aggregate stop-loss provision in the SMI policy.

MAP Loans - Loss Allocation. The FHLBank of New York evaluates loans purchased through the MAP at a pool level to determine that the pool's credit risk exposure is within the FHLBank's risk tolerance at the time of purchase. Similar to the MPP's Lender Risk Account, the MAP uses a risk sharing structure called a Member Performance Account, which is equal to 1.5% of the original loan balance, to mitigate credit losses for the FHLBank. The order of priority for credit enhancements in MAP is as follows:

- Borrower's equity (when applicable);
- PMI (when applicable); and
- Member Performance Account.

Any credit losses that exceed the remaining member risk account are absorbed by the FHLBank of New York. For FHA-insured loans, the FHLBank of New York believes it bears no credit risk, and therefore do not require a Member Performance Account for these U.S. government-insured loans.

Credit Exposure to Insurance Providers. In addition to credit risk associated with mortgage loans purchased or funded through the Acquired Member Asset programs, the FHLBanks are exposed to the risk of non-performance of mortgage insurers that provide PMI and SMI coverage on mortgage loans.

Primary Mortgage Insurance. Qualified mortgage insurance companies issue PMI for conventional mortgage loans with loan-to-value ratios at origination greater than 80% to cover principally those losses incurred related to borrower default. An FHLBank may be exposed to credit risk if a PMI provider fails to fulfill its claims payment obligations to that FHLBank. Each FHLBank has an established limit for its credit exposure to each mortgage insurance company, or may limit its credit exposure to a certain percentage of the mortgage insurance company's

regulatory capital. The FHLBanks receive PMI coverage information at acquisition of the mortgage loans and generally do not receive notification of any subsequent changes in PMI coverage. As a result, they can only estimate the amount of PMI in force at any time subsequent to acquisition.

In certain circumstances, an FHLBank may request that the servicer obtain replacement PMI coverage with a different provider. However, it is possible that replacement coverage may be unavailable or may result in additional cost to the FHLBank. PMI for conventional mortgage loans must be issued by a mortgage insurance company on that FHLBank's approved mortgage insurance company list whenever PMI coverage is required. In addition, each MPP FHLBank periodically performs an analysis evaluating each PMI provider's financial condition and the FHLBank's concentration of risk to PMI providers.

Supplemental Mortgage Insurance. Certain FHLBanks use SMI as a credit enhancement to limit the loss exposure for their Acquired Member Asset programs. For MPF/MPP loans credit enhanced with SMI, the FHFA's AMA regulation requires the FHLBank members that sell loans to their respective FHLBanks to maintain SMI with an insurer that meets the FHLBank's definition of qualified insurer. If a mortgage insurer fails to fulfill its obligations, the affected FHLBank(s) may bear any remaining loss of the borrower's default on the related mortgage loans not covered by the member. Each MPF and MPP FHLBank evaluates the claims-paying ability of its SMI providers.

FICO® Score and Loan-to-Value Ratios. High loan-to-value ratios, in which homeowners have little or no equity at stake, and low FICO® scores are key drivers of potential mortgage delinquencies and defaults. The FHLBanks generally consider a FICO® score of over 660, and a loan-to-value ratio of 80% or lower, as benchmarks indicating reduced credit risk of default. As of December 31, 2021, outstanding conventional loans with FICO® scores under 660, or no FICO® score available, at origination totaled 5.4% of the MPF Program total mortgage loan portfolio and 0.4% of the MPP and MAP total mortgage loan portfolios. Considering both qualitative and quantitative factors, these loans were not considered high risk loans at origination or at the time of purchase based on the AMA programs' design and the original terms and structure of the loans.

Table 46 presents MPF, MPP, and MAP conventional loans by FICO® score at origination and payment status at December 31, 2021.

Table 46 - MPF, MPP, and MAP Conventional Loans by FICO® Score and Payment Status at December 31, 2021
(dollars in millions)

FICO® Score at Origination (1)	Percentage of Loans	Current	Delinquent		
			30 Days	60 Days	90 Days or More
MPF Conventional Loans					
619 or less	0.2 %	82.6 %	5.4 %	2.0 %	10.0 %
620-659	4.9 %	94.8 %	2.3 %	0.7 %	2.2 %
660 or higher	94.6 %	98.8 %	0.5 %	0.1 %	0.6 %
No FICO® score	0.3 %	97.6 %	0.5 %	0.3 %	1.6 %
Total	100.0 %	98.6 %	0.6 %	0.1 %	0.7 %
Weighted average FICO® score - MPF	744				
MPP and MAP Conventional Loans					
619 or less	— ^(a)	78.3 %	10.7 %	1.3 %	9.7 %
620-659	0.4 %	87.8 %	4.1 %	2.9 %	5.2 %
660 or higher	99.6 %	99.2 %	0.4 %	0.1 %	0.3 %
Total	100.0 %	99.1 %	0.4 %	0.1 %	0.4 %
Weighted average FICO® score - MPP and MAP	761				

(1) Represents the original lowest FICO® score of the borrowers and co-borrowers.

(a) Represents percentage amount that is less than 0.1%.

Table 47 presents loan-to-value ratios at origination for MPF, MPP, and MAP conventional loans outstanding at December 31, 2021.

Table 47 - MPF, MPP, and MAP Conventional Loans by Loan-to-Value Ratio at Origination at December 31, 2021
(dollars in millions)

Loan-to-Value Ratio at Origination	MPF Conventional Loans	MPP and MAP Conventional Loans
	Percentage	Percentage
<= 60%	16.9 %	17.4 %
> 60% to 70%	15.1 %	17.3 %
> 70% to 80%	49.6 %	52.0 %
> 80% to 90%(1)	9.7 %	9.1 %
> 90%(1)	8.7 %	4.2 %
Total	100.0 %	100.0 %
Weighted-average loan-to-value %	73.6 %	72.5 %

(1) These conventional loans were required to have PMI at origination.

Geographic Concentrations. Figures 37 and 38 provide the percentage of unpaid principal balance of conventional mortgage loans held for portfolio outstanding at December 31, 2021, for the five largest state concentrations. These figures show the state concentration on an aggregated basis for all FHLBanks that hold loans under the MPF Program, MPP, and MAP. As a result, these figures do not reflect the actual state concentration with respect to each individual FHLBank.

Figure 37 - State Concentrations of MPF Program

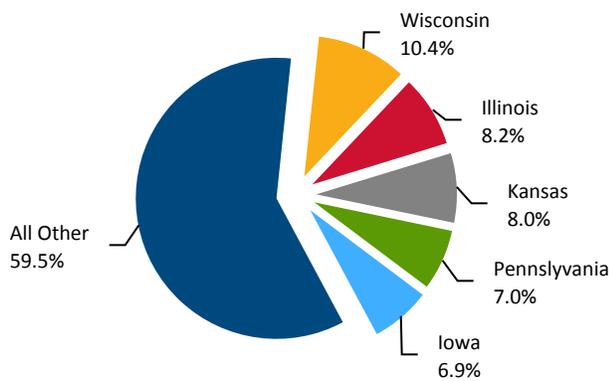
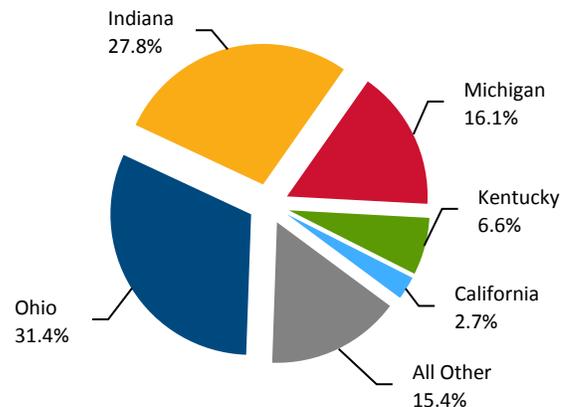


Figure 38 - State Concentrations of MPP and MAP



Derivative Counterparties. Each FHLBank transacts most of its derivatives with large banks and major broker-dealers. Derivative transactions may be either executed with a counterparty, referred to as uncleared derivatives, or cleared through a Futures Commission Merchant (i.e., clearing agent) with a Derivative Clearing Organization, referred to as cleared derivatives.

Each FHLBank is subject to credit risk due to the risk of non-performance by counterparties to its derivative transactions. The amount of credit risk on derivatives depends on the extent to which netting procedures, collateral requirements, and other credit enhancements are used and are effective in mitigating the risk. Each FHLBank manages credit risk through credit analysis, collateral management, and other credit enhancements. The FHLBanks are also required to follow the requirements set forth by applicable regulation.

The contractual or notional amount of derivative transactions reflects the involvement of an FHLBank in the various classes of financial instruments. The maximum credit risk of an FHLBank with respect to derivative transactions is the estimated cost of replacing the derivative transactions if there is a default, minus the value of

any related collateral. In determining maximum credit risk, each FHLBank considers accrued interest receivables and payables, as well as the netting requirements to net assets and liabilities.

Uncleared Derivatives. Each FHLBank is subject to the risk of non-performance by the counterparties to its uncleared derivative transactions. An FHLBank generally requires collateral on uncleared derivative transactions. Unless the collateral delivery threshold is set to zero, the amount of net unsecured credit exposure that is permissible with respect to each counterparty may depend on the credit rating of that counterparty. A counterparty generally must deliver collateral if the total market value of the FHLBank's exposure to that counterparty rises above a specific threshold. As a result of these risk mitigation initiatives, the management of each FHLBank did not anticipate any credit losses on its uncleared derivative transactions as of December 31, 2021.

Cleared Derivatives. Each FHLBank is subject to the risk of non-performance by the Derivative Clearing Organization(s) (Clearinghouse) and the clearing agents. The requirement that an FHLBank posts initial and variation margin through the clearing agent, to the Clearinghouse, exposes an FHLBank to credit risk in the event that the clearing agent or the Clearinghouse fails to meet its obligations. However, the use of cleared derivatives is intended to mitigate an FHLBank's overall credit risk exposure because a central counterparty is substituted for individual counterparties and collateral/payment is posted daily for changes in the value of cleared derivatives through a clearing agent. The management of each FHLBank did not anticipate any credit losses on its cleared derivatives as of December 31, 2021.

Table 48 presents the derivative positions with non-member counterparties and member institutions to which the FHLBanks had credit exposure at December 31, 2021. The ratings presented in this table represent the lowest long-term counterparty credit rating available for each counterparty of an individual FHLBank, based on the nationally recognized statistical rating organization(s) used by that FHLBank. Investors should not take the historical or current ratings displayed in this table as an indication of future ratings.

Table 48 - Derivative Counterparty Credit Exposure at December 31, 2021

(dollars in millions)

Credit Rating(1)	Notional Amount	Net Derivatives Fair Value Before Collateral	Cash Collateral Pledged To (From) Counterparties	Non-cash Collateral Pledged To (From) Counterparties	Net Credit Exposure to Counterparties
Non-member counterparties					
Asset positions with credit exposure					
Uncleared derivatives					
Double-A	\$ 155	\$ —	\$ —	\$ —	\$ —
Single-A	6,564	60	63	(112)	11
Cleared derivatives(2)	58,727	2	461	35	498
Liability positions with credit exposure					
Uncleared derivatives					
Single-A	26,117	(310)	319	—	9
Triple-B	18,989	(468)	474	—	6
Cleared derivatives(2)	299,489	(52)	1,526	1,759	3,233
Total derivative positions with credit exposure to non-member counterparties	410,041	(768)	2,843	1,682	3,757
Member institutions(3)	426	2	—	—	2
Consolidated obligation bond firm commitment	328	—	3	—	3
Total	\$ 410,795	\$ (766)	\$ 2,846	\$ 1,682	\$ 3,762

(1) This table does not reflect any changes in rating, outlook, or watch status occurring after December 31, 2021.

(2) Represents derivative transactions cleared with LCH Ltd. and CME Clearing, the FHLBanks' clearinghouses. LCH Ltd. is rated AA- by S&P and CME Clearing is not rated, but its parent company, CME Group Inc., is rated Aa3 by Moody's and AA- by S&P.

(3) Member institutions include mortgage delivery commitments and derivatives with members where an FHLBank is acting as an intermediary. Collateral held with respect to derivatives with member institutions where an FHLBank is acting as an intermediary represents the amount of eligible collateral physically held by or on behalf of the FHLBank or collateral assigned to the FHLBank, as evidenced by a written security agreement, and held by the member institution for the benefit of that FHLBank.

Liquidity Risk

Liquidity risk is the risk that an FHLBank will be unable to meet its financial obligations as they come due or meet the credit needs of its members and housing associates in a timely, cost-effective manner. There are two types of liquidity risk that affect the FHLBanks:

- *Operational Liquidity Risk.* The potential inability of an FHLBank to meet its anticipated (or unanticipated) day-to-day needs through normal sources of funding, including the short-term discount note market; and
- *Contingency Liquidity Risk.* The potential inability of an FHLBank to meet its liquidity needs when its access to the capital markets is impeded, including the short-term discount note market.

To address liquidity risk, the FHLBank Act, along with FHFA regulations and guidance, set liquidity requirements for the FHLBanks. (See [Liquidity and Capital Resources](#) for FHFA regulations and guidance on the FHLBanks' liquidity requirements.) An FHLBank's board of directors may, at its discretion, also set additional liquidity policies.

The FHLBanks' primary sources of liquidity are proceeds from the issuance of consolidated obligations, as well as cash and investment holdings that are primarily high-quality, short-, and intermediate-term financial instruments. During 2021, the FHLBanks maintained access to funding and were able to structure their debt issuance to meet the credit and liquidity needs of their members and to meet their financial commitments. (See [Risk Factors - Liquidity Risk](#) for additional discussion on liquidity risk and [Combined Financial Condition - Consolidated Obligations](#) and [Combined Financial Condition - Investments](#) for additional analysis and discussion about the FHLBanks' consolidated obligations and investments.)

Operational Risk

Operational risk is the risk of potential loss resulting from inadequate or failed internal processes, people, or systems, or from external events. These failures may be due to:

- human error;
- key person dependency;
- business or financial model errors;
- systems malfunctions or cyber attacks;
- man-made or natural disasters;
- pandemics or other widespread health emergencies;
- critical vendor or third-party failure;
- unenforceability of legal contracts;
- fraud;
- circumvention or failure of internal controls;
- terrorist attacks;
- civil unrest;
- geopolitical events; or
- other unanticipated or catastrophic events.

Each of the FHLBanks and the Office of Finance has established comprehensive risk assessments, as well as financial and operating policies and procedures, to reduce the likelihood of these occurrences and the potential for damage that could result from them. They have also each instituted insurance coverage that may mitigate damages that could result from certain of these risks. The internal audit department of each of the FHLBanks and the Office of Finance, which reports directly to its audit committee, regularly monitors and tests its entity's compliance with established policies and procedures.

Each of the FHLBanks and the Office of Finance relies heavily on their information systems and other technology to conduct and manage their business. Like many companies and government entities, the FHLBanks and the Office of Finance may be the subject of cyber attacks and other information security threats. Each of the FHLBanks and Office of Finance has controls in place to help ensure that information technology assets are well managed and secure from unauthorized access, and to identify information security events. In addition, each of the FHLBanks and the Office of Finance has a business continuity plan that is designed to restore critical business processes and systems in the event of a disruption. Some of the operational risks of the FHLBanks and Office of Finance, however, are beyond their control. Furthermore, the failure of third parties to address their operational risk adequately could adversely affect the FHLBanks and the Office of Finance. (See [Risk Factors - Operational Risk](#) for additional information about certain operational risks and [Controls and Procedures](#) for additional information regarding each FHLBank's controls over its financial reporting and the Office of Finance's controls and procedures over the combined financial reporting process.)

Business Risk

Business risk is the risk of an adverse effect on an FHLBank's profitability and its ability to fulfill its mission as a result of external factors that may occur in both the short and long term. Business risk includes political, strategic, reputation, or regulatory events that are beyond an FHLBank's control. From time to time, proposals or changes in laws and regulations are made or considered, which could affect the status of the FHLBanks and their costs of doing business. (See [Risk Factors](#) for additional discussions of general business risk, legislative and regulatory business risk, and strategic business risk.)

Each FHLBank's board of directors and management try to reduce these business risks through long-term strategic planning and by continually monitoring economic indicators and their external environment. Additionally, the FHLBanks are members of the Council of Federal Home Loan Banks (Council), a trade association based in Washington, D.C. whose primary function is to represent the positions and views of the Council's members to policymakers. The Council's stated mission is to:

- encourage and promote cooperation and consensus building among the FHLBanks so that their common legislative and regulatory interests may be best served;
- promote enactment of laws or regulations that are beneficial to, and oppose laws or regulations detrimental to, the FHLBanks, and obtain such research as is necessary for such promotion or opposition; and
- enhance Washington, D.C. opinion leaders' (including members of the U.S. Congress and their staffs, the executive branch of the U.S. government, regulators and trade associations) and the financial media's awareness and understanding of the FHLBanks.

An FHLBank's financial strategies are generally designed to enable it to safely expand and contract its assets, liabilities, and capital in response to changes in its member base and in its members' credit needs. An FHLBank's capital generally grows when members are required to purchase additional capital stock as they increase their advances borrowings or other business activities with their FHLBank. An FHLBank may also repurchase excess capital stock from its members as business activities with those members decline. In addition, in order to meet internally established thresholds or to meet its regulatory capital requirement, an FHLBank, at the discretion of its board of directors or management, could undertake capital preservation initiatives such as:

- voluntarily reducing or eliminating dividend payments;
- suspending excess capital stock repurchases; or
- raising capital stock holding requirements for its members.

An FHLBank may have borrower concentration risk in advances, and therefore, it analyzes the implications for its financial management and profitability if it were to lose the advances of one or more of these borrowers. (See [Combined Financial Condition - Advances](#) for the *Top 10 Advance Holding Borrowers by Holding Company at*

December 31, 2021, for the FHLBank System's member concentration risk and Top 5 Advance Holding Borrowers by FHLBank at December 31, 2021, for more information regarding each FHLBank's member concentration risk.)

If an FHLBank loses one or more large borrowers that represent a significant portion of its business, that FHLBank could, depending on the magnitude of the effect, compensate for the loss by:

- lowering dividend rates;
- raising advance rates;
- attempting to reduce operating expenses; or
- undertaking some combination of these actions.

The magnitude of the effect would depend, in part, on the FHLBank's size and profitability at the time the institution ceases to be a borrower. Each FHLBank describes its risk management policies, including disclosures about its member concentration risk, if any, in its periodic reports filed with the SEC.

QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

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

Each FHLBank has established policies and procedures to evaluate, manage, and mitigate market risks. The FHFA has established regulations governing the risk management practices of the FHLBanks. The FHLBanks must file periodic compliance reports with the FHFA. The FHFA conducts annual on-site examinations, interim on-site visits, and off-site analyses of each of the FHLBanks and the Office of Finance. In 2021, both of the annual examinations and interim visits by the FHFA were generally conducted remotely due to the COVID-19 pandemic.

Interest-Rate Risk

Interest-rate risk is the risk that relative and absolute changes in interest rates may adversely affect an institution's financial condition and results of operations. The goal of an interest-rate risk management strategy is not necessarily to eliminate interest-rate risk, but to manage it by setting, and operating within, an appropriate framework and limits. The FHLBanks generally manage interest-rate risk by acquiring and maintaining a portfolio of assets and liabilities and entering into related derivative transactions to limit the expected mismatches in duration and market value of equity sensitivity. The FHLBanks measure and monitor interest-rate risk with commonly used methods, which include the calculations of market value of equity, duration of equity, and duration gap.

The optionality embedded in certain financial instruments held by the FHLBanks can create interest-rate risk. For example, when a member prepays an advance, this can lead to lower future income for the FHLBank. If the principal portion of the advance being prepaid is reinvested in assets yielding a lower return, but that principal amount continues to be funded by the original (higher-cost) debt, the FHLBank can suffer lower net returns. To protect against this risk, each FHLBank generally charges members a prepayment fee to compensate the FHLBank for this potential loss, making it financially indifferent to the prepayment. When an FHLBank offers advances (other than short-term advances) that a member may prepay without a prepayment fee, it usually finances these advances with callable debt or otherwise hedges this option.

The FHLBanks hold mortgage-related investments, such as mortgage loans and mortgage-backed securities. Because mortgage-related investments may contain prepayment options, changes in interest rates may cause the expected maturities of these investments to become shorter (prepay) or longer (extend). The rate and timing of unscheduled payments and collections of principal on mortgage loans are difficult to predict accurately and will be affected by a variety of factors. While the FHLBanks manage prepayment and extension risk by using a combination of debt instruments and derivative transactions, if the level of actual prepayments is higher or lower than expected, the FHLBanks may incur additional costs to hedge the change in this market-risk exposure, which would result in reduced earnings. FHFA regulations also limit this source of interest-rate risk by restricting the types of mortgage loans and mortgage-backed securities the FHLBanks may own. In addition, based on FHFA regulation the FHLBanks may own only those mortgage-backed securities with limited average life extension and contraction under certain interest-rate shock scenarios. The FHLBanks may hedge against prepayment risk by funding some mortgage-related investments with consolidated obligations that have call features. In addition, the FHLBanks may use caps, floors, and other derivative transactions to manage the interest-rate risk and extension and contraction variability of mortgage-related investments. The FHLBanks may also use derivative transactions to manage the interest-rate risk associated with investment securities, other than mortgage-backed securities, to match the cash flow characteristics or market value of the hedged item. (See [Quantitative and Qualitative Disclosures about Market Risk - Use of Derivatives to Manage Interest-Rate Risk](#) for additional information.)

Transition from LIBOR to an Alternative Reference Rate

In July 2017, the United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced that after 2021 it would no longer persuade or compel banks to submit rates for the calculation of LIBOR. In March 2021, the Financial Conduct Authority further announced that LIBOR would either cease to be provided by any administrator or no longer be representative immediately after December 31, 2021 (or, in the case of some more frequently used U.S. dollar LIBOR settings, immediately after June 30, 2023). Under those announcements, the one-week and two-month U.S. dollar LIBOR settings and all non-U.S. dollar LIBOR settings ceased to be provided by any administrator and were no longer representative as of January 1, 2022. The remaining U.S. dollar LIBOR settings will either cease to be provided by any administrator or no longer be representative immediately after June 30, 2023. Although the Financial Conduct Authority does not expect these remaining U.S. dollar LIBOR settings to become unrepresentative before the cessation date, there is no assurance that any of them will continue to be published or be representative through any particular date.

In response to the announcement by the Financial Conduct Authority in July 2017, the Federal Reserve Board and the Federal Reserve Bank of New York convened the Alternative Reference Rates Committee to identify a set of alternative reference interest rates for possible use as market benchmarks. This committee has proposed SOFR as its recommended alternative to U.S. dollar LIBOR, and the Federal Reserve Bank of New York began publishing SOFR rates in the second quarter of 2018. SOFR is based on a broad segment of the overnight Treasury repurchase market and is intended to be a measure of the cost of borrowing cash overnight collateralized by Treasury securities.

Many of the FHLBanks' financial instruments are indexed to LIBOR, with exposure extending past December 31, 2021. The FHLBanks have been evaluating and planning for the eventual replacement of the LIBOR benchmark interest rate, including the possibility of SOFR as the dominant replacement. As a result, each of the FHLBanks and the Office of Finance has developed and implemented a LIBOR transition plan, which addresses considerations such as LIBOR exposure, fallback language, operational preparedness, and balance sheet management. As a result of implementing these plans, the FHLBanks have significantly reduced their LIBOR exposure on financial instruments, in particular consolidated obligations. The last of the FHLBanks' consolidated obligations indexed to LIBOR matured during January 2022.

In assessing their exposure to LIBOR, the FHLBanks have developed inventories of affected financial instruments and identified contracts that may require adding or adjusting the fallback language, including advances, investment securities, consolidated bonds, and derivatives. The FHLBanks have added or adjusted fallback language related to a majority of their advances to members and added or adjusted fallback language applicable to their consolidated bonds. In October 2020, LCH Ltd. and CME Clearing, the FHLBanks' clearinghouses, transitioned the rate for discounting all U.S. dollar interest rate cleared swaps to SOFR. The FHLBanks have also adhered to the ISDA 2020 Interbank Offered Rate Fallbacks Protocol and will work with its counterparties, as necessary, to address its over-the-counter derivative agreements referencing U.S. dollar LIBOR as a part of its LIBOR transition efforts. The FHLBanks continue to monitor the market-wide efforts to address fallback language related to derivatives and investment securities, as well as fallback language for new activities and issuances of financial instruments.

Market activity in SOFR-indexed financial instruments continues and during the years ended December 31, 2021 and 2020, the FHLBanks issued \$65.8 billion and \$258.9 billion in SOFR-linked consolidated bonds. The FHLBanks have implemented the Overnight Index Swap (OIS) as an alternative interest-rate hedging strategy for certain financial instruments rather than use LIBOR when entering into new derivative transactions. In addition, a SOFR-based derivative market has emerged and the FHLBanks use SOFR-based derivatives to manage interest-rate risk. The FHLBanks offer SOFR-linked advances to their members, and during the years ended December 31, 2021 and 2020, the FHLBanks issued \$22.7 billion and \$24.2 billion in SOFR-linked advances.

In September 2019, the FHFA issued a supervisory letter to the FHLBanks providing LIBOR transition guidance. The supervisory letter states that by March 31, 2020, the FHLBanks should no longer enter into new financial assets, liabilities, and derivatives that reference LIBOR and mature after December 31, 2021, for all product types except investments. By December 31, 2019, the FHLBanks should stop purchasing investments that reference LIBOR and mature after December 31, 2021. On March 16, 2020, the FHFA extended to June 30, 2020, the FHLBanks' ability to enter into LIBOR-based instruments that mature after December 31, 2021, except for investments and option embedded products. Furthermore, in July 2021, the FHFA issued a supervisory letter to the FHLBanks providing its expectations regarding the use of alternative reference rates in connection with the FHLBanks' LIBOR transition, including outlining considerations that the FHLBanks should address before selecting an alternative reference rate. The supervisory letter requires the FHLBanks to provide advance notice to the FHFA of plans to use an alternative reference rate not already being used by the FHLBanks.

See [Risk Factors - Business Risk - Legislative and Regulatory](#) for additional information on how changes to and the replacement of the LIBOR benchmark interest rate could adversely affect the FHLBanks' businesses, financial condition and results of operations.

At December 31, 2021, the FHLBanks had LIBOR exposure related to advances, investment securities, consolidated bonds, and derivatives with interest rates indexed to LIBOR. Table 49 presents LIBOR-indexed variable-rate financial instruments and interest-rate swaps with LIBOR exposure at December 31, 2021. At December 31, 2021, none of the FHLBanks had exposure to LIBOR tenors that ceased immediately after December 31, 2021.

Table 49 - Financial Instruments and Interest-Rate Swaps with LIBOR Exposure

(dollars in millions)

	December 31, 2021			
	LIBOR Tenors That Cease or Will no Longer be Representative Immediately After June 30, 2023			
	Due/Terminates in 2022	Due/Terminates through June 30, 2023	Due/Terminates thereafter	Total
Assets with LIBOR exposure				
Advances by redemption term (principal amount)	\$ 6,665	\$ 494	\$ 7,983	\$ 15,142
Investment securities by contractual maturity (principal amount)(1)				
Non-mortgage-backed securities	435	87	4,567	5,089
Mortgage-backed securities	116	226	38,996	39,338
Total investment securities	551	313	43,563	44,427
LIBOR-indexed interest-rate swaps notional amount (receive leg)				
Cleared	12,797	5,455	41,300	59,552
Uncleared	2,983	1,781	36,167	40,931
Total interest-rate swaps	15,780	7,236	77,467	100,483
Total principal/notional amount	\$ 22,996	\$ 8,043	\$ 129,013	\$ 160,052
Liabilities with LIBOR exposure				
Consolidated bonds by contractual maturity (principal amount)(2)	\$ 250	\$ —	\$ —	\$ 250
LIBOR-indexed interest-rate swaps notional amount (pay leg)				
Cleared	16,499	2,877	2,989	22,365
Uncleared	367	442	923	1,732
Total interest-rate swaps	16,866	3,319	3,912	24,097
Total principal/notional amount	\$ 17,116	\$ 3,319	\$ 3,912	\$ 24,347

(1) MBS and Federal Family Education Loan Program ABS are presented by contractual maturity. However, their expected maturities will likely differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment fees.

(2) As of January 27, 2022, the FHLBanks had no outstanding consolidated bonds indexed to LIBOR.

In addition to LIBOR-indexed interest-rate swaps included in Table 49, the FHLBanks have other derivatives with LIBOR exposure at December 31, 2021. Table 50 presents the notional amount of other derivatives with LIBOR exposure at December 31, 2021. At December 31, 2021, none of the FHLBanks had other derivatives with LIBOR tenors that ceased immediately after December 31, 2021.

Table 50 - Notional Amount of Other Derivatives with LIBOR Exposure

(dollars in millions)

	December 31, 2021			
	LIBOR Tenors That Cease or Will no Longer be Representative Immediately After June 30, 2023			
	Due/Terminates in 2022	Due/Terminates through June 30, 2023	Due/Terminates thereafter	Total
Interest-rate swaptions	\$ 1,064	\$ —	\$ 755	\$ 1,819
Interest-rate caps or floors	333	340	6,865	7,538
Total notional amount of other derivatives with LIBOR exposure	\$ 1,397	\$ 340	\$ 7,620	\$ 9,357

Market Value of Equity and Duration of Equity

An FHLBank may analyze its interest-rate risk exposure by estimating its theoretical market value of equity. Market value of equity represents the difference between the theoretical market value of total assets and the theoretical market value of total liabilities, including off-balance sheet items. It measures, in present value terms, the long-term economic value of current capital and the long-term level and volatility of net interest income. Generally, an FHLBank analyzes the sensitivity of the market value of equity to changes in interest rates, prepayment speeds, options prices, mortgage and debt spreads, interest-rate volatility, and other market variables. Therefore, market values can be calculated under various interest-rate scenarios, and the resulting changes in net equity can provide an indicator of the exposure of that FHLBank's market value of equity to market volatility.

Another measure of interest-rate risk is duration of equity, which measures how sensitive a theoretical market value of equity is to incremental changes in interest rates. Generally, duration of equity equals the market value-weighted duration of assets minus the market value-weighted duration of liabilities (factoring in the effect of derivatives), divided by the market value of equity. Each FHLBank has an internal modeling system for measuring its duration of equity; therefore, individual FHLBank measurements may not be directly comparable. Each FHLBank reports the results of its duration of equity calculations to the FHFA each quarter. However, not all FHLBanks manage to the duration of equity risk measure. The capital adequacy rules of the FHFA require each FHLBank to hold permanent capital in an amount sufficient to cover the sum of its credit, market, and operational risk-based capital requirements, which are defined by applicable regulations. (See [Note 11 - Capital](#) to the accompanying combined financial statements for additional information.) Each FHLBank has implemented a market-risk model that calculates the market-risk component of this requirement.

Table 51 presents each FHLBank that includes quantitative market value of equity and duration of equity information in its individual 2021 SEC Form 10-K.

Table 51 - Individual FHLBank's Market Value of Equity and Duration of Equity Disclosures

FHLBank	Market Value of Equity	Duration of Equity
Boston	(1)	(1)
New York	✓	✓
Pittsburgh	(2)	✓
Atlanta	✓	✓
Cincinnati	✓	✓
Indianapolis	✓	✓
Chicago	(3)	✓
Des Moines	✓	(4)
Dallas	(5)	(5)
Topeka	(6)	✓
San Francisco	✓	(7)

- (1) The FHLBank of Boston monitors and measures market value of equity, duration of equity, and duration gap, as described in its 2021 SEC Form 10-K. In addition, the FHLBank of Boston also monitors adjusted market value of equity, adjusted duration of equity, and adjusted duration gap. See the FHLBank of Boston's 2021 SEC Form 10-K for additional information.
- (2) The FHLBank of Pittsburgh monitors and measures market value of equity to par value of capital stock, as described in its 2021 SEC Form 10-K. In addition, the FHLBank of Pittsburgh also monitors return on equity spread volatility relative to a return on equity spread volatility limit, established and approved by its board of directors.
- (3) The FHLBank of Chicago disclosed the dollar loss limits on changes in market value of equity under parallel interest rate shocks in its 2021 SEC Form 10-K.
- (4) Although the FHLBank of Des Moines measures and monitors duration of equity, it disclosed in its 2021 SEC Form 10-K projected 24 month income as a key interest-rate risk measure.
- (5) The FHLBank of Dallas monitors and measures duration of equity and duration gap, as described in its 2021 SEC Form 10-K. In addition, the FHLBank of Dallas also monitors adjusted duration of equity and adjusted duration gap, which measurements more closely align the put dates on its puttable advances with the projected call dates of associated interest-rate swaps. See the FHLBank of Dallas' 2021 SEC Form 10-K for additional information.
- (6) The FHLBank of Topeka measures and monitors market value of equity (MVE); however, the FHLBank of Topeka measures market value risk in terms of its MVE in relation to its total regulatory capital stock outstanding instead of to its book value of equity. As described in its 2021 SEC Form 10-K, the FHLBank of Topeka believes this is a reasonable metric because, as a cooperative, the metric reflects the market value of the FHLBank of Topeka relative to the book value of its capital stock.
- (7) The FHLBank of San Francisco does not disclose duration of equity, rather it discloses a comparable metric, "Market Value of Capital Sensitivity" as a key market risk measure.

Table 52 presents the duration of equity reported by each FHLBank to the FHFA in accordance with the FHFA's guidance, which prescribes that down and up interest-rate shocks equal 200 basis points. However, the applicable guidance restricts the down rate from assuming a negative interest rate. Therefore, each FHLBank adjusts the down rate accordingly in periods of very low levels of interest rates.

Table 52 - Duration of Equity

(in years)

FHLBank	December 31, 2021			December 31, 2020		
	Down	Base	Up	Down	Base	Up
Boston	5.4	1.1	3.6	(0.5)	5.5	4.3
New York	1.9	(1.6)	0.1	1.1	(0.5)	0.2
Pittsburgh	3.0	(0.4)	1.3	3.1	(0.9)	3.2
Atlanta	4.2	0.5	2.4	5.3	4.1	4.0
Cincinnati	0.7	1.4	3.6	(0.1)	(2.3)	3.2
Indianapolis	0.9	(1.3)	0.6	—	0.7	0.4
Chicago	1.1	0.4	1.5	1.4	0.6	1.4
Des Moines	3.6	0.2	1.8	3.5	(1.3)	0.6
Dallas	(4.5)	0.2	1.6	(5.5)	(0.4)	1.4
Topeka	1.5	(0.4)	0.6	0.5	(1.2)	(1.3)
San Francisco	0.2	0.5	1.6	—	1.3	1.9

Duration Gap

A related measure of interest-rate risk is duration gap, which is the difference between the estimated durations (market value sensitivity) of assets and liabilities, and reflects the extent to which estimated maturity and repricing cash flows for assets and liabilities are matched. Duration gap determines the sensitivity of assets and liabilities to interest-rate changes. Each FHLBank has an internal modeling system for measuring its duration gap; therefore, individual FHLBank measurements may not be directly comparable. Duration generally indicates the expected change in an instrument's market value resulting from an increase or a decrease in interest rates. Higher duration numbers, whether positive or negative, indicate greater volatility in the market value of equity in response to changing interest rates. Duration gap numbers in Table 53 include the effect of derivative transactions.

Table 53 - Duration Gap

(in months)

FHLBank	December 31, 2021	December 31, 2020
Boston	1.0	4.5
New York	(1.6)	(0.7)
Pittsburgh	(1.2)	(0.2)
Atlanta	0.1	2.6
Cincinnati	—	(0.3)
Indianapolis	(1.3)	0.1
Chicago	0.4	0.6
Des Moines	0.2	(1.7)
Dallas	(0.1)	(0.5)
Topeka	(0.3)	(0.8)
San Francisco	0.4	1.3

Use of Derivatives to Manage Interest-Rate Risk

An FHLBank enters into derivatives to manage interest-rate risk, prepayment risk, and other exposure inherent in otherwise unhedged assets and funding positions. An FHLBank attempts to use derivatives to reduce interest-rate exposure in the most cost-efficient manner. Derivatives are also used to manage the effective maturity, repricing frequency, or option characteristics of financial instruments to achieve risk-management objectives. (See [Note 7 - Derivatives and Hedging Activities](#) to the accompanying combined financial statements for a discussion of managing interest-rate risk exposure and [Financial Discussion and Analysis - Combined Results of Operations](#) for the effect of derivatives and hedging activities on net interest income and non-interest income resulting from the FHLBanks' hedging strategies.) Figures 39, 40, and 41 present the notional amount of derivatives by hedged item, instrument type, and hedge designation at December 31, 2021. The notional amount of derivatives serves as a factor in determining periodic interest payments or cash flows received and paid and reflects the FHLBanks' involvement in the various classes of financial instruments. However, the notional amount of derivatives does not represent the actual amounts exchanged or the overall exposure of the FHLBanks to credit and market risk; the overall risk is much smaller. The risks of derivatives can be measured meaningfully on a portfolio basis that takes into account the counterparties, the types of derivatives, the items being hedged, and any offsets between the derivatives and the items being hedged.

Figure 39 - Notional Amount of Derivatives by Hedged Item (dollars in billions)

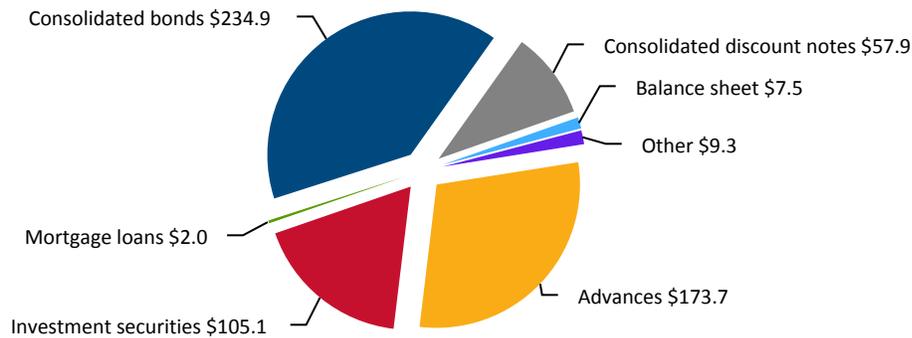


Figure 40 - Notional Amount of Derivatives by Instrument Type (dollars in billions)

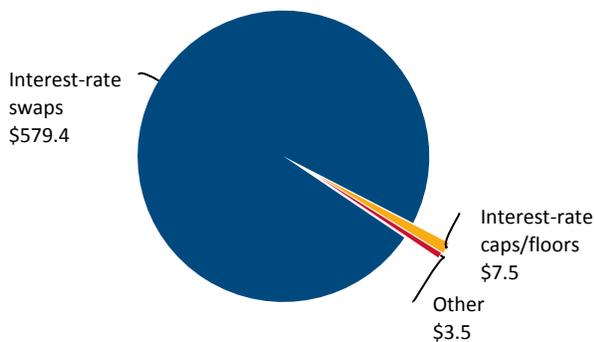


Figure 41 - Notional Amount of Derivatives by Hedge Designation (dollars in billions)

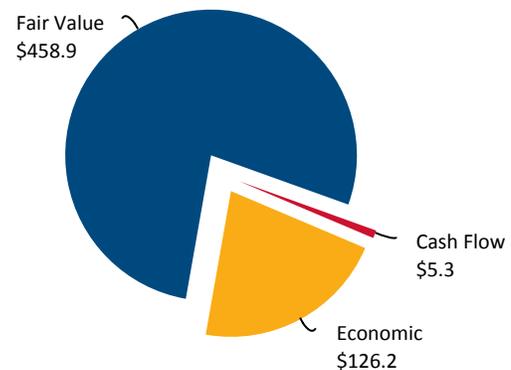


Table 54 presents the notional amount of the pay and receive leg of interest-rate swaps by interest-rate index at December 31, 2021 and 2020. The pay and receive legs are equal as both sides of the derivative transaction are being presented. (See [Quantitative and Qualitative Disclosures about Market Risk](#) for more information on the transition from LIBOR and the use of SOFR as an alternative market benchmark.)

Table 54 - Notional Amount of Interest-Rate Swaps by Interest-Rate Index (dollars in millions)

Interest-Rate Index	December 31, 2021		December 31, 2020	
	Pay Leg	Receive Leg	Pay Leg	Receive Leg
Fixed	\$ 279,145	\$ 292,103	\$ 313,474	\$ 137,384
SOFR	207,664	112,439	39,600	80,857
OIS	68,456	74,337	39,091	96,001
LIBOR	24,097	100,483	87,540	165,463
Other interest-rate index	—	—	5	5
Total notional amount of interest-rate swaps	\$ 579,362	\$ 579,362	\$ 479,710	\$ 479,710

In addition to the interest-rate swaps included in Table 54, the FHLBanks have other derivatives at December 31, 2021 and 2020. Table 55 presents the notional amount of other derivatives at December 31, 2021 and 2020.

Table 55 - Notional Amount of Other Derivatives

(dollars in millions)

	December 31, 2021	December 31, 2020
Interest-rate caps or floors	\$ 7,538	\$ 11,346
Interest-rate swaptions	1,819	3,455
Mortgage delivery commitments	1,228	3,581
Interest-rate futures or forwards	213	350
Other	203	256
Total notional amount of other derivatives	\$ 11,001	\$ 18,988

Table 56 presents the notional amount and hedging objectives of the derivatives used to manage interest-rate risk, prepayment risk, or other exposure inherent in otherwise unhedged assets and funding positions. (See [Note 7 - Derivatives and Hedging Activities](#) to the accompanying combined financial statements for a discussion of the use of derivatives and [Financial Discussion and Analysis - Risk Management - Credit Risk - Derivative Counterparties](#) for credit exposure to derivative counterparties.)

Table 56 - Hedging Strategies

(dollars in millions)

Hedged Item / Hedging Instrument	Hedging Objective	Hedge Designation(1)	December 31,	
			2021 Notional Amount	2020 Notional Amount
Advances(2)				
Pay-fixed, receive-float interest-rate swap (without options)	Converts the advance's fixed rate to a variable-rate index.	Fair Value	\$ 104,549	\$ 118,952
		Economic	3,946	6,599
Pay-fixed, receive-float interest-rate swap (with options)	Converts the advance's fixed rate to a variable-rate index and offsets option risk in the advance.	Fair Value	53,223	58,759
		Economic	2,057	2,329
Pay-fixed, receive-float interest-rate swap (with purchased swaption)	Converts the advance's fixed rate to a variable-rate index and offsets an optional commitment embedded in the advance that allows the member to increase the amount of the advance.	Fair Value	—	4
Receive-fixed, pay-float interest-rate swap	Converts the advance's variable rate to a fixed rate.	Economic	1,905	1,800
Pay-fixed with embedded features, receive-float interest-rate swap (non-callable)	Reduces interest-rate sensitivity and repricing gaps by converting the advance's fixed rate to a variable-rate index and/or offsets embedded option risk in the advance.	Fair Value	1,102	918
Pay-float with embedded features, receive-float interest-rate swap (non-callable)	Reduces interest-rate sensitivity and repricing gaps by converting the advance's variable rate to a different variable-rate index and/or offsets embedded option risk in the advance.	Fair Value	8	60
Pay-float with embedded features, receive-float interest-rate swap (callable)	Reduces interest-rate sensitivity and repricing gaps by converting the advance's variable rate to a different variable-rate index and/or offsets embedded option risk in the advance.	Fair Value	—	150
Pay-float, receive-float basis swap	Reduces interest-rate sensitivity and repricing gaps by converting the advance's variable rate to a different variable-rate index.	Economic	6,900	8,450
Interest-rate cap, floor, corridor, or collar	Offsets the interest cap, floor, corridor, or collar embedded in a variable-rate advance.	Economic	—	28
Total			173,690	198,049

Hedged Item / Hedging Instrument	Hedging Objective	Hedge Designation(1)	December 31,	
			2021 Notional Amount	2020 Notional Amount
Investment securities(3)				
Pay-fixed, receive-float interest-rate swap	Converts the investment security's fixed rate to a variable-rate index.	Fair Value	\$ 77,042	\$ 61,946
		Economic	20,792	45,093
Interest-rate cap or floor	Offsets the interest-rate cap or floor embedded in a variable-rate investment.	Economic	2,658	3,438
Pay-fixed, receive-float interest-rate swap (with options)	Converts the investment securities' fixed rate to a variable-rate index and offsets option risk in the investment.	Fair Value	4,599	4,367
		Total	105,091	114,844
Mortgage loans(4)				
Pay-fixed, receive-float interest-rate swap	Converts the mortgage loan's fixed rate to a variable-rate index.	Economic	567	1,947
Receive-fixed, pay-float interest-rate swap	Converts the variable rate to a fixed rate in a pooled mortgage portfolio hedge.	Economic	440	1,518
Interest-rate swaption	Provides the option to enter into an interest-rate swap to offset interest-rate or prepayment risk in a pooled mortgage portfolio hedge.	Economic	600	1,280
Forward settlement agreement	Protects against changes in market value of fixed-rate mortgage delivery commitments resulting from changes in interest rates.	Economic	361	606
		Total	1,968	5,351
Consolidated bonds(5)				
Receive-fixed or structured, pay-float interest-rate swap (without options)	Converts the bond's fixed or structured rate to a variable-rate index.	Fair Value	65,226	65,961
		Economic	15,094	19,845
Receive-fixed or structured, pay-float interest-rate swap (with options)	Converts the bond's fixed- or structured-rate to a variable-rate index and offsets option risk in the bond.	Fair Value	149,793	6,414
		Economic	2,533	775
Receive-float, pay-float basis swap	Reduces interest-rate sensitivity and repricing gaps by converting the bond's variable rate to a different variable-rate index.	Economic	845	14,052
Pay-fixed, receive-float interest-rate swap	Converts the bond's variable-rate to fixed-rate to offset the prepayment risk of mortgage loans.	Economic	5	5
Basis swap	Fixed-rate or variable-rate non-callable bond previously converted to a variable-rate index, converted to another variable-rate index to reduce interest-rate sensitivity and repricing gaps.	Economic	—	5,733
Forward-starting interest-rate swap	Locks in the cost of funding on anticipated issuance of debt.	Cash Flow	1,391	17
		Total	234,887	112,802
Consolidated discount notes(6)				
Receive-fixed, pay-float interest-rate swap	Converts the discount note's fixed rate to a variable-rate index.	Fair Value	3,374	8,855
		Economic	50,437	23,710
Pay-fixed, receive-float interest-rate swap (with options)	Discount note converted to fixed-rate callable debt that offsets the prepayment risk of mortgage assets.	Economic	50	100
Pay-fixed, receive-float interest-rate swap (without options)	Discount note converted to fixed-rate non-callable debt that offsets the interest-rate risk of mortgage assets.	Economic	100	250
Interest-rate cap, floor, or swap	Mitigates the variability of cash flows associated with the benchmark interest rate.	Cash Flow	—	2,243
Pay-fixed, receive-float interest-rate swap	Hedging sequential issuance of discount notes to reduce interest-rate sensitivity	Cash Flow	3,936	2,139
		Total	57,897	37,297

Hedged Item / Hedging Instrument	Hedging Objective	Hedge Designation(1)	December 31,	
			2021 Notional Amount	2020 Notional Amount
Balance sheet				
Pay-fixed, receive-float interest-rate swap	Converts the asset or liability fixed rate to a variable-rate index.	Economic	\$ —	\$ 1,268
Pay-float, receive-fixed interest-rate swap	Interest-rate swap not linked to a specific asset, liability or forecasted transaction.	Economic	945	2,192
Pay-fixed, receive-float interest-rate swap	Interest-rate swap not linked to specific assets, liabilities or forecasted transactions.	Economic	520	500
Interest-rate swaption	Provides the option to enter into an interest-rate swap to offset interest-rate or prepayment risk.	Economic	1,219	2,175
Interest-rate cap or floor	Protects against changes in income of certain assets due to changes in interest rates.	Economic	4,800	7,800
		Total	7,484	13,935
Intermediary positions and other				
Pay-fixed, receive-float interest-rate swap, and receive-fixed, pay-float interest-rate swap	To offset interest-rate swaps executed with members by executing interest-rate swaps with derivatives counterparties.	Economic	275	1,041
Interest-rate cap or floor	To offset interest-rate caps or floors executed with members by executing interest-rate caps or floors with derivatives counterparties.	Economic	80	80
Pay-fixed, receive-float interest-rate swap, and receive-fixed, pay-float interest-rate swap	Interest-rate swap used to offset the economic effect of an interest-rate swap that is no longer designated to advances, investment securities, mortgage loans, consolidated bonds or consolidated discount notes.	Economic	7,330	11,718
		Total	7,685	12,839
Stand-alone derivatives				
Mortgage delivery commitment	Exposed to fair-value risk associated with fixed-rate mortgage delivery commitments.	n/a	1,228	3,581
Consolidated obligation bond firm commitment	Exposed to fair-value risk associated with fixed-rate consolidated obligation bonds.	n/a	433	—
		Total	1,661	3,581
Total Notional Amount			\$ 590,363	\$ 498,698

- (1) The Fair Value and Cash Flow categories represent hedging strategies for which qualifying hedge accounting is achieved. All fair value hedges represent benchmark interest-rate hedges. The Economic category represents hedging strategies for which qualifying hedge accounting is not achieved.
- (2) At December 31, 2021 and 2020, the principal amount of advances outstanding was \$349,383 million and \$415,646 million.
- (3) At December 31, 2021 and 2020, the fair value of trading securities was \$24,354 million and \$55,218 million and the amortized cost of AFS securities was \$116,822 million and \$101,771 million.
- (4) At December 31, 2021 and 2020, the unpaid principal balance of mortgage loans held for portfolio was \$54,513 million and \$61,709 million.
- (5) At December 31, 2021 and 2020, the principal amount of consolidated bonds outstanding was \$441,826 million and \$471,808 million.
- (6) At December 31, 2021 and 2020, the principal amount of consolidated discount notes outstanding was \$210,926 million and \$274,853 million.

FINANCIAL STATEMENT SCHEDULES

Financial Statements

The combined financial statements and accompanying notes, including the Report of Independent Auditors, begin on page F-4 of this Combined Financial Report.

CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON COMBINED ACCOUNTING AND FINANCIAL DISCLOSURES

There were no changes in accountants or disagreements with accountants in the period covered by this Combined Financial Report.

CONTROLS AND PROCEDURES

FHLBanks

The management of each FHLBank is required under applicable laws and regulations to establish and maintain effective disclosure controls and procedures as well as effective internal control over financial reporting, as such disclosure controls and procedures and internal control over financial reporting relate to that FHLBank only. Each FHLBank's management assessed the effectiveness of its individual internal control over financial reporting as of December 31, 2021, based on the criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment, management of each FHLBank concluded, as of December 31, 2021, that its individual internal control over financial reporting was effective based on the criteria established in *Internal Control-Integrated Framework*. Additionally, the independent registered public accounting firm of each FHLBank opined that the individual FHLBank maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021. (See *Part II. Item 8 - Financial Statements and Supplementary Data* or *Item 9A - Controls and Procedures* of each FHLBank's 2021 SEC Form 10-K for its *Management's Report on Internal Control over Financial Reporting*.)

The management of each FHLBank concluded that its disclosure controls and procedures were effective at a reasonable assurance level as of the end of the period covered by its 2021 SEC Form 10-K. Additionally, each FHLBank indicated that there were no changes to its internal control over financial reporting during the quarter ended December 31, 2021, that materially affected, or are reasonably likely to materially affect, its internal control over financial reporting. (See *Part II. Item 9A - Controls and Procedures* of each FHLBank's 2021 SEC Form 10-K.)

Office of Finance Controls and Procedures over the Combined Financial Reporting Combining Process

The Office of Finance is not responsible for the preparation, accuracy, or adequacy of the information or financial data provided by the FHLBanks to the Office of Finance for use in preparing the combined financial reports, or for the quality or effectiveness of the disclosure controls and procedures or internal control over financial reporting of the FHLBanks as they relate to that information and financial data. Each FHLBank is responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting with respect to the information and financial data provided to the Office of Finance. Although the Office of Finance is not an SEC registrant, FHFA regulations require that the combined financial report form and content generally be consistent with SEC Regulations S-K and S-X, as interpreted by the FHFA. The Office of Finance is not required to establish and maintain, and in light of the nature of its role has not established and maintained, disclosure controls and procedures and internal control over financial reporting in the same manner as those maintained by each FHLBank. The Office of Finance has established controls and procedures concerning the FHLBanks' submission of information and financial data to the Office of Finance, the process of combining the financial statements and other financial information of the individual FHLBanks, and the review of that information.

The Office of Finance does not independently verify the financial information submitted by each FHLBank that comprise the combined financial statements, the condensed combining schedules, and other disclosures included in this Combined Financial Report. Instead, the Office of Finance relies on each FHLBank management's certification and representation regarding the accuracy and completeness, in all material respects, of its data submitted to the Office of Finance for use in preparing this Combined Financial Report.

Audit Committee Charter

The charter of the audit committee of the Office of Finance's board of directors is available on the Office of Finance's web site at fhlb-of.com. This web site address is provided as a matter of convenience only, and its contents are not made part of or incorporated by reference into this report.

SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

Each FHLBank is a member-owned cooperative, whose members elect a majority of that FHLBank's directors from among the officers and directors of its members. The FHLBanks conduct their advances and mortgage loan business primarily with members. As a result, in the normal course of business, the FHLBanks regularly extend credit to members whose officers or directors may serve as directors of the FHLBank extending the credit and to members (or affiliates) owning more than 5% of an FHLBank's capital stock. This credit is extended on market terms that are no more favorable to these "related" members than comparable transactions with other members of the same FHLBank. As of December 31, 2021, the FHLBanks had \$21.7 billion of advances outstanding to members whose officers or directors were serving as directors of the FHLBank extending the credit, which represented 6.2% of the principal amount of total advances. (See [Market for Capital Stock and Related Stockholder Matters](#) and [Financial Discussion and Analysis - Combined Financial Condition - Advances](#) for additional information on FHLBank advances and membership.)

An FHLBank provides Affordable Housing Program subsidies in the form of direct grants and below-market interest rate advances to members, which use the funds to assist in the purchase, construction, or rehabilitation of housing for very low- and low- or moderate-income households. Only FHLBank members, along with their non-member Affordable Housing Program project sponsors, may submit Affordable Housing Program applications. All Affordable Housing Program subsidies are made in the normal course of business.

An FHLBank also provides subsidies in the form of grants and below-market interest rate advances or standby letters of credit to members for community lending and economic development projects under the Community Investment Program and Community Investment Cash Advance programs. Only FHLBank members may submit applications for these credit program subsidies. These subsidies are made in the normal course of business. During 2020 and 2021, in response to the COVID-19 pandemic, certain FHLBanks offered temporary relief programs providing subsidized advances, at very low or zero interest rates, and grants to their members.

In instances where an Affordable Housing Program, Community Investment Program, Community Investment Cash Advance, or COVID-19 relief program transaction involves a member (or its affiliate) owning more than 5% of an FHLBank's capital stock, a member with an officer or director who serves as a director of an FHLBank within that district, or an entity with an officer, director, or general partner who serves as a director of an FHLBank within that district (and has a direct or indirect interest in the subsidy), the transaction is subject to the same eligibility and other program criteria and requirements as all other transactions, and the regulations governing the operations of the relevant program.

An FHLBank may also have investments in interest-bearing deposits, securities purchased under agreements to resell, federal funds sold, and certificates of deposit, and may also execute mortgage-backed securities and derivative transactions, with members, former members, or their affiliates, some of whose officers or directors may serve as directors of their respective FHLBank. All investments are transacted at then-current market prices without preference to the status of the counterparty or the issuer of the investment as a member, former member, or affiliate. (See each FHLBank's 2021 SEC Form 10-K under *Item 13—Certain Relationships and Related Transactions, and Director Independence* for additional information regarding related transactions with its members.)

PRINCIPAL ACCOUNTING FEES AND SERVICES

Each of the audit committees of the FHLBanks and the Office of Finance pre-approves audit and non-audit services provided by the principal independent public accountant to the entity it oversees. Also, each audit committee annually considers whether the services identified under the caption “all other fees” and rendered to the entity it oversees are compatible with maintaining the principal accountant’s independence. Table 57 presents the aggregate fees billed or to be billed to the FHLBanks and the Office of Finance by their principal independent public accountant, PricewaterhouseCoopers LLP.

Table 57 - Principal Accounting Fees and Services

(dollars in millions)

	Year Ended December 31,	
	2021	2020
Audit fees(1)	\$ 11	\$ 11
Audit-related fees(2)	1	1
Tax fees	—	—
All other fees(3)	—	—
Total fees	\$ 12	\$ 12

- (1) Audit fees consist of fees incurred in connection with the annual audits and quarterly reviews of the FHLBanks’ individual and combined financial statements, including audits of internal control over financial reporting, and for the review of related financial information.
- (2) Audit-related fees primarily consist of assurance and related services for accounting consultations and combined audit central team services.
- (3) All other fees consist of services rendered for non-financial information system related consulting. No fees were paid to the principal independent public accountant for financial information system design and implementation.

OFFICE OF FINANCE AUDIT COMMITTEE REPORT

By Federal Housing Finance Agency (FHFA) regulation, the Audit Committee of the Office of Finance Board of Directors (Office of Finance Audit Committee) performs oversight duties in connection with the preparation of the combined financial reports of the Federal Home Loan Banks (FHLBanks), which include the combined financial statements of the FHLBanks. The Office of Finance Audit Committee is comprised of five independent directors not employed by an FHLBank or the Office of Finance; who were selected by the Office of Finance Board of Directors, subject to review by the FHFA; and who as a group must have substantial experience in financial and accounting matters. In connection with its duties, the Office of Finance Audit Committee has adopted a written charter, which is posted on the Office of Finance web site. The Office of Finance Audit Committee members are not required to satisfy any express qualification or independence standards governing their service as audit committee members that are separate and distinct from their qualifications to serve as members of the Office of Finance Board of Directors.

There is no system-wide centralized management of the FHLBanks. Each FHLBank is a separately chartered entity and has its own board of directors and management. Each FHLBank's board of directors has established an audit committee, the members of which are required to meet express qualification and independence standards established by the FHFA and the audit committee independence requirements set forth in Section 10A(m) of the Securities Exchange Act of 1934, as amended. For disclosure purposes, each FHLBank is required to identify audit committee members who may not be considered "independent" based on corporate governance standards of independence used by the FHLBanks as required under Securities and Exchange Commission rules and regulations. In addition, each FHLBank's board of directors and management is responsible for establishing its own accounting and financial reporting policies in accordance with accounting principles generally accepted in the United States of America. Each FHLBank is subject to certain reporting requirements of the Securities Exchange Act of 1934, as amended, and must file periodic reports and other information including annual audited financial statements with the Securities and Exchange Commission. (See [Explanatory Statement about Federal Home Loan Banks Combined Financial Report.](#))

In connection with its responsibilities in preparing the combined financial reports and the combined financial statements, the Office of Finance is responsible for combining the financial information it receives from each of the FHLBanks. Each FHLBank is responsible for the financial information and the underlying data it provides to the Office of Finance for inclusion in the combined financial reports and combined financial statements. Based on FHFA regulation and guidance related to the combined financial reports, the Office of Finance Audit Committee's responsibilities are limited to the oversight of the preparation of the combined financial reports with regard to the basis and approach to combining information from the FHLBanks. The Office of Finance Audit Committee is responsible for ensuring that the FHLBanks adopt consistent accounting policies and procedures to the extent necessary for information submitted by the FHLBanks to the Office of Finance to be combined to create accurate and meaningful combined financial reports. However, the Office of Finance Audit Committee is not responsible for overseeing the reliability and integrity of the accounting policies and financial reporting of the individual FHLBanks or the accuracy of the information that they submit to the Office of Finance.

The FHLBanks and the Office of Finance have determined that the FHLBank System is best served by having the same independent auditor to coordinate and perform the separate audits of each of the FHLBanks and the annual combined financial report of the FHLBanks, which includes the audited combined financial statements of the FHLBanks. The audit committees of each of the FHLBanks and the Office of Finance collaborate in selecting, setting the compensation of, and evaluating the performance of, the independent auditor, but the responsibility for the appointment and oversight of the independent auditor remains solely with the audit committee of each FHLBank and the Office of Finance.

PricewaterhouseCoopers LLP (PwC) has been the independent auditor for each of the FHLBanks and the Office of Finance since 1990. The audit committee at each FHLBank and the Office of Finance engages in an evaluation of the independent auditor annually. In connection with the appointment of an independent auditor, the evaluation includes consultation amongst the audit committees of each of the FHLBanks and the Office of Finance. Specific considerations may include:

- an analysis of the risks and benefits of retaining PwC as independent auditor versus engaging a different firm, including consideration of:
 - PwC engagement audit partner, engagement quality review partner, and audit team rotation;
 - PwC's tenure as independent auditor for the FHLBanks and the Office of Finance;
 - independence of PwC;
 - benefits associated with engaging a different firm as independent auditor; and
 - potential disruption and risks associated with changing the independent auditor.
- PwC's depth and breadth of understanding of our business, operations, and accounting policies and practices;
- PwC's historical and recent performance of the audits of the FHLBanks and the Office of Finance, including the results of an internal survey of PwC service and quality;
- an analysis of PwC's known legal risks and significant proceedings;
- external data relating to audit quality and performance, including recent Public Company Accounting Oversight Board audit quality inspection reports on PwC and its peer firms, as well as metrics indicative of audit quality;
- the appropriateness of PwC's fees, both on an absolute basis and as compared to its peer firms; and
- the diversity of PwC's ownership and staff assigned to the engagement.

Each audit committee of the FHLBanks and the Office of Finance pre-approves audit and non-audit services provided by PwC to the entity it oversees. Also, each audit committee annually considers whether the services identified under the caption "all other fees" and rendered to the entity it oversees are compatible with maintaining the principal accountant's independence.

The Office of Finance Audit Committee requires audit partner rotation and limits the number of consecutive years an individual partner may provide service to the Office of Finance. For lead and concurring partners, the maximum number of consecutive years of service in that capacity is five years. The process for selection of the Office of Finance's lead audit partner pursuant to this rotation policy involves a meeting between the Chair of the Office of Finance Audit Committee and the candidate for the role, as well as discussion with the full Office of Finance Audit Committee and with management. The Office of Finance's lead audit partner has served since 2018.

Based on its reviews, the Office of Finance Audit Committee appointed PwC as the independent auditor for 2021.

The Office of Finance Audit Committee has reviewed and discussed the audited combined financial statements with senior management of the Office of Finance, and discussed with the independent auditor the matters required to be discussed in accordance with auditing standards generally accepted in the United States of America. In addition, the Office of Finance Audit Committee has:

- reviewed and understands how management and the independent auditor assess financial statement materiality; and

- reviewed management’s analyses of significant financial reporting issues and accounting judgments made in preparing the combined financial reports and the combined financial statements.

The Office of Finance Audit Committee has also received the written disclosures from the independent auditor required to be disclosed in accordance with auditing standards generally accepted in the United States of America regarding the independent auditor’s communications with the Office of Finance Audit Committee concerning independence, and has discussed with the independent auditor its independence.

Based on the review and discussions referred to above, the Office of Finance Audit Committee determined to include the audited combined financial statements in the FHLBanks’ Combined Financial Report for the Year Ended December 31, 2021.

Patricia A. Oelrich, Chair
Jonathan A. Scott, Vice-Chair
Janice C. Eberly
Kathleen C. McKinney
Joel W. Motley

March 25, 2022



Report of Independent Auditors

To the Board of Directors of the Federal Home Loan Banks Office of Finance

Opinion

We have audited the accompanying combined financial statements of the Federal Home Loan Banks (the “FHLBanks”), which comprise the combined statements of condition as of December 31, 2021 and 2020, and the related combined statements of income, comprehensive income, capital and cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the “combined financial statements”).

In our opinion, the accompanying combined financial statements present fairly, in all material respects, the financial position of the FHLBanks as of December 31, 2021 and 2020, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2021, in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (US GAAS). Our responsibilities under those standards are further described in the Auditors’ Responsibilities for the Audit of the Combined Financial Statements section of our report. We are required to be independent of the FHLBanks and the Federal Home Loan Banks Office of Finance and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Combined Financial Statements

Management is responsible for the preparation and fair presentation of the combined financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of combined financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the FHLBanks’ ability to continue as a going concern for one year after the date the financial statements are available to be issued.

Auditors’ Responsibilities for the Audit of the Combined Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors’ report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance

and therefore is not a guarantee that an audit conducted in accordance with US GAAS will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with US GAAS, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the combined financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the FHLBanks' internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the combined financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the FHLBanks' ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Supplemental Information

Our audit was conducted for the purpose of forming an opinion on the combined financial statements taken as a whole. The accompanying condensed combining schedules as of December 31, 2021 and 2020 and for each of the three years ended December 31, 2021, the FHLBank Management and Compensation, and the Individual Federal Home Loan Bank Selected Financial Data and Financial Ratios are presented for purposes of additional analysis and are not a required part of the combined financial statements, nor are they intended to present the financial position, results of operations and cash flows of the individual FHLBanks. Accordingly, we do not express an opinion on the financial position, results of operations and cash flows of the individual FHLBanks. The information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the combined financial statements.

The condensed combining schedules as of December 31, 2021 and 2020 and for each of the three years ended December 31, 2021 have been subjected to the auditing procedures applied in the audit of the combined financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the combined financial statements or to the combined financial statements themselves and other additional procedures, in accordance with auditing standards generally accepted in the United States of America. In our opinion, the condensed combining schedules as of December 31, 2021 and 2020 and for each of the three years

ended December 31, 2021 are fairly stated, in all material respects, in relation to the combined financial statements taken as a whole.

The FHLBank Management and Compensation and the Individual Federal Home Loan Bank Selected Financial Data and Financial Ratios marked “unaudited” have not been subjected to the auditing procedures applied in the audit of the combined financial statements, and accordingly, we do not express an opinion or provide any assurance thereon.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the Combined Financial Report on pages 1 through 138 and F-1 through F-3, but does not include the combined financial statements and our auditors’ report thereon. Our opinion on the combined financial statements does not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the combined financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the combined financial statements or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.



Washington, District of Columbia
March 25, 2022

FEDERAL HOME LOAN BANKS COMBINED STATEMENT OF CONDITION

<i>(dollars in millions, except par value)</i>	December 31,	
	2021	2020
Assets		
Cash and due from banks <i>(Note 3)</i>	\$ 3,532	\$ 25,125
Interest-bearing deposits <i>(Note 4)</i>	6,382	8,076
Securities purchased under agreements to resell <i>(Note 4)</i>	64,292	45,588
Federal funds sold <i>(Note 4)</i>	47,360	31,510
Investment securities <i>(Note 4)</i>		
Trading securities, includes \$1,012 and \$1,922 pledged as collateral that may be repledged	24,354	55,218
Available-for-sale securities, net, amortized cost of \$116,822 and \$101,771, and includes \$782 and \$1,116 pledged as collateral that may be repledged	118,411	103,123
Held-to-maturity securities, net, fair value of \$48,300 and \$63,547, and includes \$0 and \$0 pledged as collateral that may be repledged	47,672	62,350
Total investment securities	190,437	220,691
Advances, includes \$2,971 and \$3,489 at fair value held under fair value option <i>(Note 5)</i>	351,278	422,639
Mortgage loans held for portfolio, net <i>(Note 6)</i>	55,497	62,842
Accrued interest receivable, net	874	1,146
Derivative assets, net <i>(Note 7)</i>	2,115	1,617
Other assets, net	1,471	1,506
Total assets	\$ 723,238	\$ 820,740
Liabilities		
Deposits <i>(Note 8)</i>	\$ 14,303	\$ 15,340
Consolidated obligations <i>(Note 9)</i>		
Discount notes, includes \$32,769 and \$9,134 at fair value held under fair value option	210,897	274,804
Bonds, includes \$15,853 and \$20,798 at fair value held under fair value option	441,024	473,714
Total consolidated obligations	651,921	748,518
Mandatorily redeemable capital stock	398	772
Accrued interest payable	830	776
Affordable Housing Program payable <i>(Note 10)</i>	899	1,032
Derivative liabilities, net <i>(Note 7)</i>	177	874
Other liabilities	5,588	3,248
Total liabilities	674,116	770,560
Commitments and contingencies <i>(Note 15)</i>		
Capital <i>(Note 11)</i>		
Capital stock		
Class B putable (\$100 par value) issued and outstanding shares: 248,309,099 and 269,861,282	24,831	26,986
Class A putable (\$100 par value) issued and outstanding shares: 2,341,902 and 4,122,248	234	412
Total capital stock	25,065	27,398
Retained earnings		
Unrestricted	17,110	16,564
Restricted	5,650	5,434
Total retained earnings	22,760	21,998
Accumulated other comprehensive income (loss) <i>(Note 12)</i>	1,297	784
Total capital	49,122	50,180
Total liabilities and capital	\$ 723,238	\$ 820,740

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

FEDERAL HOME LOAN BANKS COMBINED STATEMENT OF INCOME

(dollars in millions)	Year Ended December 31,		
	2021	2020	2019
Interest income			
Advances	\$ 2,634	\$ 6,654	\$ 16,856
Interest-bearing deposits	12	83	333
Securities purchased under agreements to resell	14	199	1,205
Federal funds sold	53	265	1,564
Investment securities			
Trading securities	621	1,092	873
Available-for-sale securities	1,073	1,440	2,752
Held-to-maturity securities	635	1,207	2,442
Total investment securities	2,329	3,739	6,067
Mortgage loans held for portfolio	1,425	1,862	2,234
Other	4	5	5
Total interest income	6,471	12,807	28,264
Interest expense			
Consolidated obligations			
Discount notes	226	2,535	9,028
Bonds	2,473	5,748	14,319
Total consolidated obligations	2,699	8,283	23,347
Deposits	3	31	161
Mandatorily redeemable capital stock	22	52	74
Total interest expense	2,724	8,366	23,582
Net interest income	3,747	4,441	4,682
Provision (reversal) for credit losses	(15)	38	2
Net interest income after provision (reversal) for credit losses	3,762	4,403	4,680
Non-interest income			
Net gains (losses) on investment securities	(708)	761	464
Net gains (losses) on financial instruments held under fair value option	(67)	138	78
Net gains (losses) on derivatives	195	(1,094)	(449)
Gains on litigation settlements, net	15	146	30
Other, net	207	322	174
Total non-interest income (loss)	(358)	273	297
Non-interest expense			
Compensation and benefits	749	841	718
Other operating expenses	458	484	510
Federal Housing Finance Agency	84	77	72
Office of Finance	66	61	61
Other, net	75	107	64
Total non-interest expense	1,432	1,570	1,425
Net income before assessments	1,972	3,106	3,552
Affordable Housing Program assessments	201	315	362
Net income	\$ 1,771	\$ 2,791	\$ 3,190

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

FEDERAL HOME LOAN BANKS COMBINED STATEMENT OF COMPREHENSIVE INCOME

<i>(dollars in millions)</i>	Year Ended December 31,		
	2021	2020	2019
Net income	\$ 1,771	\$ 2,791	\$ 3,190
Other comprehensive income			
Net unrealized gains (losses) on available-for-sale securities	232	522	174
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	7	166	26
Net unrealized gains (losses) relating to hedging activities	220	(214)	(174)
Pension and postretirement benefits	54	(34)	(24)
Total other comprehensive income (loss)	513	440	2
Comprehensive income (loss)	\$ 2,284	\$ 3,231	\$ 3,192

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

FEDERAL HOME LOAN BANKS COMBINED STATEMENT OF CAPITAL

YEARS ENDED DECEMBER 31, 2021, 2020, AND 2019

<i>(dollars and shares in millions)</i>	Capital Stock - Putable					
	Class B		Class A		Total	
	Shares	Par Value	Shares	Par Value	Shares	Par Value
Balance, December 31, 2018	383	\$ 38,251	2	\$ 247	385	\$ 38,498
Adjustment for cumulative effect of accounting changes	—	—	—	—	—	—
Comprehensive income (loss)	—	—	—	—	—	—
Proceeds from issuance of capital stock	402	40,228	—	2	402	40,230
Repurchases/redemptions of capital stock	(429)	(42,837)	(8)	(713)	(437)	(43,550)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(7)	(720)	(1)	(138)	(8)	(858)
Transfers between Class B and Class A shares	(11)	(1,050)	11	1,050	—	—
Dividends on capital stock						
Cash	—	—	—	—	—	—
Stock	2	175	—	—	2	175
Balance, December 31, 2019	340	34,047	4	448	344	\$ 34,495
Adjustment for cumulative effect of accounting change	—	—	—	—	—	—
Partial recovery of prior capital distribution to Financing Corporation	—	—	—	—	—	—
Comprehensive income (loss)	—	—	—	—	—	—
Proceeds from issuance of capital stock	275	27,496	—	2	275	27,498
Repurchases/redemptions of capital stock	(316)	(31,667)	(1)	(170)	(317)	(31,837)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(18)	(1,795)	(11)	(1,072)	(29)	(2,867)
Transfers between Class B and Class A shares	(12)	(1,204)	12	1,204	—	—
Dividends on capital stock						
Cash	—	—	—	—	—	—
Stock	1	109	—	—	1	109
Balance, December 31, 2020	270	26,986	4	412	274	\$ 27,398
Adjustment for cumulative effect of accounting change	—	—	—	—	—	—
Comprehensive income (loss)	—	—	—	—	—	—
Proceeds from issuance of capital stock	143	14,269	—	4	143	14,273
Repurchases/redemptions of capital stock	(148)	(14,756)	(11)	(1,034)	(159)	(15,790)
Net shares reclassified (to)/from mandatorily redeemable capital stock	(4)	(357)	(5)	(542)	(9)	(899)
Transfers between Class B and Class A shares	(14)	(1,394)	14	1,394	—	—
Transfers to unrestricted/(from) restricted retained earnings	—	—	—	—	—	—
Dividends on capital stock						
Cash	—	—	—	—	—	—
Stock	1	83	—	—	1	83
Balance, December 31, 2021	248	\$ 24,831	2	\$ 234	250	\$ 25,065

FEDERAL HOME LOAN BANKS COMBINED STATEMENT OF CAPITAL (continued)

YEARS ENDED DECEMBER 31, 2021, 2020, AND 2019

(dollars and shares in millions)	Retained Earnings			Accumulated Other Comprehensive Income (Loss)	Total Capital
	Unrestricted	Restricted	Total		
Balance, December 31, 2018	\$ 15,241	\$ 4,263	\$ 19,504	\$ 342	\$ 58,344
Adjustment for cumulative effect of accounting changes	15	—	15	—	15
Comprehensive income (loss)	2,551	639	3,190	2	3,192
Proceeds from issuance of capital stock	—	—	—	—	40,230
Repurchases/redemptions of capital stock	—	—	—	—	(43,550)
Net shares reclassified (to)/from mandatorily redeemable capital stock	—	—	—	—	(858)
Transfers between Class B and Class A shares	—	—	—	—	—
Dividends on capital stock					
Cash	(1,946)	—	(1,946)	—	(1,946)
Stock	(175)	—	(175)	—	—
Balance, December 31, 2019	15,686	4,902	20,588	344	55,427
Adjustment for cumulative effect of accounting change	(28)	—	(28)	—	(28)
Partial recovery of prior capital distribution to Financing Corporation	200	—	200	—	200
Comprehensive income (loss)	2,259	532	2,791	440	3,231
Proceeds from issuance of capital stock	—	—	—	—	27,498
Repurchases/redemptions of capital stock	—	—	—	—	(31,837)
Net shares reclassified (to)/from mandatorily redeemable capital stock	—	—	—	—	(2,867)
Transfers between Class B and Class A shares	—	—	—	—	—
Dividends on capital stock					
Cash	(1,444)	—	(1,444)	—	(1,444)
Stock	(109)	—	(109)	—	—
Balance, December 31, 2020	16,564	5,434	21,998	784	50,180
Adjustment for cumulative effect of accounting change	—	—	—	—	—
Comprehensive income (loss)	1,503	268	1,771	513	2,284
Proceeds from issuance of capital stock	—	—	—	—	14,273
Repurchases/redemptions of capital stock	—	—	—	—	(15,790)
Net shares reclassified (to)/from mandatorily redeemable capital stock	—	—	—	—	(899)
Transfers between Class B and Class A shares	—	—	—	—	—
Transfers to unrestricted/(from) restricted retained earnings	52	(52)	—	—	—
Dividends on capital stock					
Cash	(926)	—	(926)	—	(926)
Stock	(83)	—	(83)	—	—
Balance, December 31, 2021	\$ 17,110	\$ 5,650	\$ 22,760	\$ 1,297	\$ 49,122

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

FEDERAL HOME LOAN BANKS COMBINED STATEMENT OF CASH FLOWS

<i>(dollars in millions)</i>	Year Ended December 31,		
	2021	2020	2019
Operating activities			
Net income	\$ 1,771	\$ 2,791	\$ 3,190
Adjustments to reconcile net income to net cash provided by operating activities			
Depreciation and amortization/(accretion)	608	75	(315)
Net change in derivatives and hedging activities	4,077	(4,605)	(3,395)
Net change in fair value adjustments on trading securities	709	(440)	(432)
Net change in fair value adjustments on financial instruments held under fair value option	67	(138)	(78)
Other adjustments, net	31	(259)	87
Net change in			
Trading securities	—	2,476	(2,351)
Accrued interest receivable	275	797	32
Other assets	(10)	(75)	(162)
Accrued interest payable	42	(1,047)	(76)
Other liabilities	(201)	(36)	175
Total adjustments	5,598	(3,252)	(6,515)
Net cash provided by (used in) operating activities	7,369	(461)	(3,325)
Investing activities			
Net change in			
Interest-bearing deposits	2,180	4,472	1,273
Securities purchased under agreements to resell	(18,704)	24,505	(24,769)
Federal funds sold	(15,850)	19,847	2,859
Trading securities			
Proceeds from sales	6,392	13,639	26,185
Proceeds from maturities and paydowns	46,167	39,659	15,066
Purchases	(20,499)	(55,444)	(76,978)
Available-for-sale securities			
Proceeds from sales	20	1,937	511
Proceeds from maturities and paydowns	19,520	13,862	19,411
Purchases	(34,327)	(10,413)	(36,871)
Held-to-maturity securities			
Proceeds from sales	6	862	195
Proceeds from maturities and paydowns	19,771	28,118	27,010
Purchases	(8,223)	(10,925)	(18,485)
Advances			
Repaid	3,144,356	4,569,177	8,689,592
Originated	(3,078,054)	(4,345,823)	(8,599,011)
Mortgage loans held for portfolio			
Principal collected	21,006	27,286	11,828
Purchases	(14,223)	(18,086)	(21,982)
Other investing activities, net	(50)	(88)	(64)
Net cash provided by (used in) investing activities	69,488	302,585	15,770

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

(dollars in millions)	Year Ended December 31,		
	2021	2020	2019
Financing activities			
Net change in deposits and pass-through reserves, and other financing activities	\$ (1,034)	\$ 5,010	\$ 2,578
Net proceeds (payments) on derivative contracts with financing element	15	(514)	(149)
Net proceeds from issuance of consolidated obligations			
Discount notes	3,314,895	4,135,082	6,633,748
Bonds	429,963	505,445	614,243
Payments for maturing and retiring consolidated obligations			
Discount notes	(3,378,712)	(4,263,664)	(6,655,363)
Bonds	(459,861)	(654,260)	(597,239)
Proceeds from issuance of capital stock	14,273	27,498	40,230
Payments for repurchases/redemptions of capital stock	(15,790)	(31,837)	(43,550)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(1,273)	(3,475)	(559)
Cash dividends paid	(926)	(1,444)	(1,946)
Partial recovery of prior capital distribution to Financing Corporation	—	200	—
Net cash provided by (used in) financing activities	(98,450)	(281,959)	(8,007)
Net increase (decrease) in cash and due from banks	(21,593)	20,165	4,438
Cash and due from banks at beginning of the period	25,125	4,960	522
Cash and due from banks at end of the period	\$ 3,532	\$ 25,125	\$ 4,960
Supplemental disclosures			
Cash activities			
Interest paid	\$ 3,371	\$ 10,355	\$ 24,008
Affordable Housing Program payments, net	\$ 336	\$ 372	\$ 368
Non-cash activities			
Transfers of mortgage loans held for sale to securitized mortgage loans	\$ 417	\$ 368	\$ 204
Net capital stock reclassified to/(from) mandatorily redeemable capital stock	\$ 899	\$ 2,867	\$ 858
Transfer of held-to-maturity securities to available-for-sale securities with the adoption of the amended hedge accounting guidance	\$ —	\$ —	\$ 1,597
Transfer of held-to-maturity securities to available-for-sale securities with the adoption of the reference rate reform guidance	\$ —	\$ 254	\$ —

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

NOTES TO COMBINED FINANCIAL STATEMENTS

Background Information

These financial statements present the combined financial position and combined results of operations of the Federal Home Loan Banks (FHLBanks). The FHLBanks are government-sponsored enterprises (GSEs) that were organized under the Federal Home Loan Bank Act of 1932, as amended (FHLBank Act), to serve the public by enhancing the availability of credit for residential mortgages and targeted community development. They are financial cooperatives that provide a readily available, competitively-priced source of funds to their member institutions. All federally-insured depository institutions and insurance companies engaged in residential housing finance may apply for membership. Additionally, qualified community development financial institutions are eligible to be members of an FHLBank. Housing associates, including state and local housing authorities, that meet certain statutory and regulatory criteria may also borrow from the FHLBanks. While eligible to borrow, housing associates are not members of the FHLBanks. All members must purchase stock in their district's FHLBank. On a combined basis, member institutions own most of the FHLBanks' capital stock. Former members (including certain non-members that own FHLBank capital stock as a result of merger or acquisition, relocation, charter termination, voluntary termination, or involuntary termination of an FHLBank member) own the remaining capital stock to support business transactions still carried on an FHLBank's statement of condition. All holders of an FHLBank's capital stock may, to the extent declared by that FHLBank's board of directors, receive dividends on their capital stock.

Each FHLBank operates as a separate entity with its own management, employees, and board of directors. The FHLBanks do not sponsor any special purpose entities or any other type of off-balance sheet conduits.

The Federal Housing Finance Agency (FHFA), an independent agency in the executive branch of the U.S. government, supervises and regulates the FHLBanks, Federal Home Loan Mortgage Corporation (Freddie Mac), and Federal National Mortgage Association (Fannie Mae). The FHFA's stated mission is to ensure the housing GSEs fulfill their mission by operating in a safe and sound manner to serve as a reliable source of liquidity and funding for the housing finance market throughout the economic cycle.

The Office of Finance is a joint office of the FHLBanks established to facilitate the issuance and servicing of the debt instruments of the FHLBanks, known as consolidated obligations (consolidated bonds and consolidated discount notes), and to prepare the quarterly and annual combined financial reports of the FHLBanks. As provided by the FHLBank Act and applicable regulations, consolidated obligations are backed only by the financial resources of the FHLBanks. Consolidated obligations are the primary source of funds for the FHLBanks in addition to deposits, other borrowings, and capital stock issued to members. The FHLBanks primarily use these funds to provide advances to members. The FHLBanks also use these funds to acquire mortgage loans from members (acquired member assets) primarily through the Mortgage Purchase Program (MPP) or the Mortgage Partnership Finance® (MPF®) Program. "Mortgage Partnership Finance," "MPF," and "MPF Xtra" are registered trademarks of the FHLBank of Chicago. In addition, some FHLBanks offer correspondent services to their member and non-member institutions, including wire transfer, security safekeeping, and settlement services.

Unless otherwise stated, dollar amounts disclosed in this Combined Financial Report represent values rounded to the nearest million. Dollar amounts rounding to less than one million are not reflected in this Combined Financial Report.

Note 1 - Summary of Significant Accounting Policies

The following summary of significant accounting policies has been compiled from the FHLBanks' individual summaries of significant accounting policies. Although the FHLBanks' accounting and financial reporting policies are not necessarily always identical, each FHLBank is responsible for establishing its own accounting and financial

reporting policies in accordance with generally accepted accounting principles in the United States of America (GAAP). The following paragraphs describe the more significant accounting policies followed by the FHLBanks, including the more notable alternatives acceptable under GAAP.

Basis of Presentation

These combined financial statements include the financial statements and records of the FHLBanks that are prepared in accordance with GAAP.

Principles of Combination. Transactions between the FHLBanks have been eliminated in accordance with combination accounting principles similar to consolidation under GAAP and primarily consist of:

1. Transfers of Direct Liability on Consolidated Obligations between the FHLBanks. These transfers occur when the primary obligation under consolidated obligations issued on behalf of one FHLBank is transferred to and assumed by another FHLBank. The transferring FHLBank treats the transfer as a debt extinguishment because it is released from being the primary obligor when the Office of Finance records the transfer, pursuant to its duties under applicable regulations. The assuming FHLBank then becomes the primary obligor while the transferring FHLBank has a contingent liability due to its joint and several liability with respect to repaying the transferred consolidated obligations.

The FHLBank assuming the consolidated obligation liability initially records the consolidated obligation at fair value, which represents the amount paid to the assuming FHLBank by the transferring FHLBank to assume the debt. A premium or discount exists for the amount paid above or below face value. Because these transfers represent inter-company transfers under combination accounting principles, an inter-company elimination is made for any gain or loss on the transfer. As a result, the subsequent amortization of premium or discount, amortization of concession fees, and recognition of hedging-related adjustments in the combined financial statements represent those of the transferring FHLBank.

2. Purchases of Consolidated Bonds. These purchases occur when consolidated bonds issued on behalf of one FHLBank are purchased by another FHLBank in the open market. All purchase transactions occur at market prices with third parties and the purchasing FHLBanks treat these consolidated bonds as investments. Under combination accounting principles, the investment and the consolidated bonds, and related contractual interest income and expense, are eliminated in combination.
3. Lending Activity. From time to time, the FHLBanks loan short-term funds to one another. Under combination accounting, inter-company adjustments are made to eliminate these amounts.

See the [Condensed Combining Schedules](#) for the combining adjustments, consisting of interbank eliminations and rounding adjustments, made to the combined financial statements.

Segment Reporting. FHFA regulations consider each FHLBank to be a segment. However, there is no single chief operating decision maker because there is no centralized, system-wide management or centralized board of director oversight of the individual FHLBanks. (See the [Condensed Combining Schedules](#) for segment information.)

Reclassifications and Revisions to Prior Period Amounts. *Table 4.6 - Proceeds from Sale and Gross Gains and Losses on Sale of AFS Securities* in [Note 4 - Investments](#) has been revised to correct an error in the amount previously reported as proceeds from sale of available-for-sale (AFS) securities for the year ended December 31, 2020. This revision was not deemed to be material. In addition, certain other prior period amounts have been revised or reclassified to conform to the current period presentation. These amounts were not deemed to be material.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires each FHLBank's management to make subjective assumptions and estimates that may affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities, and the reported amounts of income and expense. The most significant of these estimates include those used in conjunction with fair value estimates and derivatives and hedging activities. Actual results could differ from these estimates significantly.

Fair Value. The fair value amounts, recorded on the Combined Statement of Condition and in the footnotes for the periods presented, have been determined by the FHLBanks using available market and other pertinent information, and reflect each FHLBank's best judgment of appropriate valuation methods. Although an FHLBank uses its best judgment in estimating the fair value of these financial instruments, there are inherent limitations in any valuation technique. Therefore, these fair values may not be indicative of the amounts that would have been realized in market transactions at the reporting dates. (See [Note 14 - Fair Value](#) for more information.)

Financial Instruments Meeting Netting Requirements

The FHLBanks present certain financial instruments on a net basis when they have a legal right of offset and all other requirements for netting are met (collectively referred to as the netting requirements). For these financial instruments, each of the affected FHLBanks has elected to offset its asset and liability positions, as well as cash collateral received or pledged, when it has met the netting requirements.

The net exposure for these financial instruments can change on a daily basis; therefore, there may be a delay between the time this exposure change is identified and additional collateral is requested, and the time when this collateral is received or pledged. Likewise, there may be a delay for excess collateral to be returned. For derivative instruments that meet the netting requirements, any excess cash collateral received or pledged is recognized as a derivative liability or derivative asset. (See [Note 7 - Derivatives and Hedging Activities](#) for additional information regarding these agreements.)

Securities purchased under agreements to resell are also subject to netting requirements. Based on the fair value of the related collateral held, securities purchased under agreements to resell were fully collateralized for the periods presented. There were no offsetting liabilities related to these securities at December 31, 2021 or 2020.

Adoption of Measurement of Credit Losses on Financial Instruments Accounting Guidance

Beginning January 1, 2020, the FHLBanks adopted, on a modified retrospective basis, new accounting guidance pertaining to the measurement of credit losses on financial instruments (the CECL accounting guidance) that requires a financial asset or group of financial assets measured at amortized cost to be presented at the net amount expected to be collected. The new guidance also requires credit losses relating to these financial instruments as well as AFS securities to be recorded through an allowance for credit losses. Consistent with the modified retrospective method of adoption, the FHLBanks recorded an immaterial cumulative adjustment to the opening balance of retained earnings as of January 1, 2020, and the prior periods were not revised to conform to the new basis of accounting. Key changes to the accounting policies are detailed within this note.

Investments

Interest-Bearing Deposits, Securities Purchased under Agreements to Resell, and Federal Funds Sold. The FHLBanks invest in interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold. Interest-bearing deposits include certificates of deposit and bank notes not meeting the definition of a security. The FHLBanks treat securities purchased under agreements to resell as short-term collateralized loans. These investments provide short-term liquidity and are carried at amortized cost. Accrued interest receivable is recorded separately on the Combined Statement of Condition. If applicable, an allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. Interest-bearing deposits and federal funds sold are evaluated quarterly for credit losses.

Beginning January 1, 2020, the FHLBanks adopted the CECL accounting guidance. The FHLBanks use the collateral maintenance provision practical expedient, which allows expected credit losses to be measured based on the difference between the fair value of the collateral and the investment's amortized cost, for securities purchased under agreements to resell. Consequently, a credit loss would be recognized if there is a collateral shortfall which the FHLBanks do not believe the counterparty will replenish in accordance with the relevant contractual terms. The credit loss would be limited to the difference between the fair value of the collateral and the investment's amortized cost.

Prior to January 1, 2020, securities purchased under agreements to resell were evaluated for credit losses if there was a collateral shortfall which the FHLBanks did not believe the counterparty would replenish in accordance with the relevant contractual terms.

Debt Securities. The FHLBanks classify investment securities as trading, AFS, or held-to-maturity (HTM) at the date of acquisition. Purchases and sales of securities are recorded on a trade date basis.

Trading. Securities classified as trading are held for liquidity purposes and carried at fair value. The FHLBanks record changes in the fair value of these securities through non-interest income as net gains (losses) on investment securities. FHFA regulation and each FHLBank's risk management policy prohibit trading in or the speculative use of these instruments and limit credit risk arising from these instruments.

Available-for-Sale. Securities that are not classified as HTM or trading are classified as AFS and are carried at fair value. The FHLBanks record changes in the fair value of these securities in other comprehensive income (loss) (OCI).

For AFS securities in hedging relationships that qualify as fair value hedges, the FHLBanks record the portion of the change in the fair value of the investment related to the risk being hedged in interest income on AFS securities together with the related change in the fair value of the derivative, and record the remainder of the change in the fair value of the investment in OCI as net unrealized gains (losses) on AFS securities.

Beginning January 1, 2020, the FHLBanks adopted the CECL accounting guidance. For securities classified as AFS, each FHLBank evaluates an individual security for impairment on a quarterly basis by comparing the security's fair value to its amortized cost. Accrued interest receivable is recorded separately on the Combined Statement of Condition. Impairment exists when the fair value of the investment is less than its amortized cost (i.e., in an unrealized loss position). In assessing whether a credit loss exists on an impaired security, an FHLBank considers whether there would be a shortfall in receiving all cash flows contractually due. When a shortfall is considered possible, an FHLBank compares the present value of cash flows to be collected from the security with the amortized cost basis of the security. If the present value of cash flows is less than amortized cost, an allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. The allowance is limited by the amount of the unrealized loss. The allowance for credit losses excludes uncollectible accrued interest receivable, which is measured separately.

If management intends to sell an impaired security classified as AFS, or more likely than not will be required to sell the security before expected recovery of its amortized cost basis, any allowance for credit losses is written off and the amortized cost basis is written down to the security's fair value at the reporting date with any incremental impairment reported in earnings as net gains (losses) on investment securities. If management does not intend to sell an impaired security classified as AFS and it is not more likely than not that management will be required to sell the debt security, then the credit portion of the difference is recognized as an allowance for credit losses and any remaining difference between the security's fair value and amortized cost is recorded as net unrealized gains (losses) on AFS securities within OCI.

For improvements in cash flows of AFS securities, interest income follows the recognition pattern pursuant to the impairment guidance in effect prior to January 1, 2020 and recoveries of amounts previously written off are recorded when received. AFS securities with an other-than-temporary impairment (OTTI) recognized pursuant to the impairment guidance in effect prior to January 1, 2020 continue to follow the prior accounting until maturity or disposition. For improvements in impaired AFS securities with an allowance for credit losses recognized after the adoption of the new guidance, the allowance for credit losses associated with recoveries may be derecognized up to its full amount. Effective January 1, 2020, the net non-credit portion of OTTI gains (losses) on AFS securities was reclassified to net unrealized gains (losses) on AFS securities within OCI.

See *Investment Securities - Other-than-Temporary Impairment* within this note for the accounting policy relating to credit losses in effect prior to January 1, 2020.

Held-to-Maturity. Securities that the FHLBanks have both the ability and intent to hold to maturity are classified as HTM and are carried at amortized cost, which is original cost net of periodic principal repayments and amortization of premiums and accretion of discounts, adjusted for OTTI losses recorded prior to January 1, 2020. Accrued interest receivable is recorded separately on the Combined Statement of Condition.

Certain changes in circumstances may cause an FHLBank to change its intent to hold a security to maturity without calling into question its intent to hold other debt securities to maturity in the future. Thus, the sale or transfer of an HTM security due to certain changes in circumstances, such as evidence of significant deterioration in the issuer's creditworthiness or changes in regulatory requirements, is not considered to be inconsistent with its original classification. Other events that are isolated, nonrecurring, and unusual for the FHLBanks that could not have been reasonably anticipated may cause an FHLBank to sell or transfer an HTM security without necessarily calling into question its intent to hold other debt securities to maturity. In addition, sale of a debt security that meets either of the following two conditions would not be considered inconsistent with the original classification of that security:

1. The sale occurs near enough to its maturity date (for example, within three months of maturity), or call date if exercise of the call is probable, that interest-rate risk is substantially eliminated as a pricing factor and the changes in market interest rates would not have a significant effect on the security's fair value; or
2. The sale of a security occurs after an FHLBank has already collected a substantial portion (at least 85%) of the principal outstanding at acquisition due either to prepayments on the debt security or to scheduled payments on a debt security payable in equal installments (both principal and interest) over its term.

Beginning January 1, 2020, the FHLBanks adopted the CECL accounting guidance. HTM securities are evaluated quarterly for expected credit losses on a pool basis unless an individual assessment is deemed necessary because the securities do not possess similar risk characteristics. An allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. The allowance for credit losses excludes uncollectible accrued interest receivable, which is measured separately.

For improvements in HTM securities impaired prior to January 1, 2020, interest income continues to follow the recognition pattern pursuant to the impairment guidance in effect prior to January 1, 2020 and recoveries of amounts previously written off are recorded when received. For improvements in impaired HTM securities with an allowance for credit losses recognized after the adoption of the new guidance, the allowance for credit losses associated with recoveries may be derecognized up to its full amount. (See *Investment Securities - Other-than-Temporary Impairment* within this note for the accounting policy relating to credit losses in effect prior to January 1, 2020.)

Premiums and Discounts. The FHLBanks amortize purchased premiums and accrete purchased discounts on investment securities using either the contractual level-yield (contractual interest method) or the retrospective

level-yield (retrospective interest method) over the estimated cash flows of the securities. The contractual interest method recognizes the income effects of premiums and discounts over the contractual life of the securities based on the actual behavior of the underlying assets, including adjustments for actual prepayment activities, and reflects the contractual terms of the securities without regard to changes in estimated prepayments based on assumptions about future borrower behavior. The retrospective interest method requires that an FHLBank estimate prepayments over the estimated life of the securities and make a retrospective adjustment of the effective yield each time that it changes the estimated life as if the new estimate had been known since the original acquisition date of the securities.

Gains and Losses on Sales. Each FHLBank computes gains and losses on sales of its investment securities using the specific identification method and includes these gains and losses in non-interest income (loss).

Investment Securities - Other-than-Temporary Impairment

Beginning January 1, 2020, the FHLBanks adopted the CECL accounting guidance. As a result, the accounting guidance related to OTTI accounting for investments was superseded as of that date.

Prior to January 1, 2020, each FHLBank evaluated its individual AFS and HTM securities in unrealized loss positions for OTTI on a quarterly basis. A security was considered impaired (i.e., in an unrealized loss position) when its fair value was less than its amortized cost. An FHLBank considered an OTTI to have occurred under any of the following conditions:

- It had an intent to sell the impaired debt security;
- If, based on available evidence, it believed it was more likely than not that it would be required to sell the impaired debt security before the recovery of its amortized cost; or
- It did not expect to recover the entire amortized cost of the impaired debt security.

Recognition of OTTI. If either of these first two conditions was met, an FHLBank recognized an OTTI charge in earnings equal to the entire difference between the security's amortized cost and its fair value as of the statement of condition date. For securities in an unrealized loss position that did not meet either of these conditions, the entire loss position, or total OTTI, was evaluated to determine the extent and amount of credit loss.

To determine the existence of a credit loss, each FHLBank performed an analysis, which included a cash flow analysis for private-label mortgage-backed securities (MBS), to determine if it would recover the entire amortized cost of each of these securities. The present value of the cash flows expected to be collected was compared to the amortized cost of the debt security. If there was a credit loss (the difference between the present value of the cash flows expected to be collected and the amortized cost of the debt security), the carrying value of the debt security was adjusted to its fair value. However, rather than recognizing the entire difference between the amortized cost and the fair value in earnings, only the amount of the impairment representing the credit loss (i.e., the credit component) was recognized in earnings, while the amount related to all other factors (i.e., the non-credit component) was recognized in OCI. The credit loss on a debt security was limited to the amount of that security's unrealized losses.

Subsequent Accounting for OTTI. For subsequent accounting of an other-than-temporarily impaired security, an FHLBank recorded an additional OTTI if the present value of cash flows expected to be collected was less than the amortized cost of the security. The total amount of this additional OTTI (both credit and non-credit components, if any) was determined as the difference between the security's amortized cost less the amount of OTTI recognized in OCI prior to the determination of this additional OTTI and its fair value. Any additional credit loss was limited to that security's unrealized losses, or the difference between the security's amortized cost and its fair value as of the statement of condition date. This additional credit loss, up to the amount in OCI related to the security, was reclassified out of non-credit-related OTTI in OCI and recognized in earnings. Any credit loss in excess of the related OCI was also recognized in earnings.

Subsequent related increases and decreases (if not an additional OTTI) in the fair value of AFS securities were netted against the non-credit component of OTTI recognized previously in OCI. For HTM securities, if the current carrying value was less than its current fair value, the carrying value of the security was not increased. However, the OTTI recognized in OCI for HTM securities was accreted to the carrying value of each security on a prospective basis, based on the amount and timing of future estimated cash flows (with no effect on earnings unless the security was subsequently sold or there were additional decreases in cash flows expected to be collected). For debt securities classified as AFS, the FHLBanks did not accrete the OTTI recognized in OCI to the carrying value because the subsequent measurement basis for these securities was fair value.

Interest Income Recognition. When a security was other-than-temporarily impaired, a new accretable yield was calculated for that security at its impairment measurement date. This adjusted yield was used to calculate the interest income recognized over the remaining life of that security, matching the amount and timing of its estimated future collectible cash flows. Subsequent to that security's initial OTTI, an FHLBank re-evaluated estimated future collectible cash flows on a quarterly basis. If the security had no additional OTTI based on this evaluation, the accretable yield was reassessed for possible adjustment on a prospective basis. Depending on an FHLBank's accounting method, the accretable yield was adjusted if there was either: (1) a significant increase in the security's expected cash flows or (2) a favorable or unfavorable change in the timing and amount of the security's expected cash flows.

Variable Interest Entities

Certain FHLBanks have investments in variable interest entities (VIEs) that include, but are not limited to, senior interests in private-label MBS and asset-backed securities (ABS). The carrying amounts and classification of the assets that relate to the FHLBanks' investments in VIEs are included in investment securities on the Combined Statement of Condition. The affected FHLBanks have no liabilities related to these VIEs. The maximum loss exposure for these VIEs is limited to the FHLBanks' investments in the VIEs.

If an FHLBank determines it is the primary beneficiary of a VIE, it would be required to consolidate that VIE. Each affected FHLBank performs its evaluation, at least annually, or as needed, to determine whether it is the primary beneficiary in any VIE. To perform this evaluation, an FHLBank considers whether it possesses both of the following characteristics:

- The power to direct the VIE's activities that most significantly affect the VIE's economic performance; and
- The obligation to absorb the VIE's losses or the right to receive benefits from the VIE that could potentially be significant to the VIE.

Based on an evaluation of these characteristics, each affected FHLBank has determined that consolidation is not required for its VIEs for the periods presented. In addition, each of these FHLBanks has not provided financial or other support (explicitly or implicitly) during the periods presented. Furthermore, each affected FHLBank was not previously contractually required to provide, nor does it intend to provide, that support in the future.

Advances

The FHLBanks report advances (secured loans to members, former members, or housing associates) either at amortized cost or at fair value when the fair value option has been elected. Advances carried at amortized cost are reported net of premiums, discounts (including discounts related to the Affordable Housing Program (AHP)), unearned commitment fees, and hedging adjustments. The FHLBanks amortize or accrete premiums and discounts, and recognize unearned commitment fees and hedging adjustments, to interest income using a level-yield methodology. The FHLBanks record interest on advances to interest income as earned. For advances carried at fair value, interest income is recognized based on the contractual interest rate. Accrued interest receivable is recorded separately on the Combined Statement of Condition. If deemed necessary, an allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses.

Beginning January 1, 2020, the FHLBanks adopted the CECL accounting guidance. The advances carried at amortized cost are evaluated quarterly for expected credit losses. Prior to January 1, 2020, an FHLBank evaluated advances to determine if an allowance for credit losses was necessary if it was probable an impairment occurred in the FHLBank's advance portfolio as of the statement of condition date and the amount of loss could be reasonably estimated.

Advance Modifications. In cases in which an FHLBank funds a new advance concurrently with or within a short period of time before or after the prepayment of an existing advance, the FHLBank evaluates whether the new advance meets the accounting criteria to qualify as a modification of an existing advance or whether it constitutes a new advance. The FHLBank compares the present value of cash flows on the new advance to the present value of cash flows remaining on the existing advance. If there is at least a 10% difference in the present value of cash flows or if the FHLBank concludes the difference between the advances is more than minor based on a qualitative assessment of the modifications made to the original contractual terms, then the advance is accounted for as a new advance. In all other instances, the new advance is accounted for as a modification.

Prepayment Fees. The FHLBanks charge a borrower a prepayment fee when the borrower prepays certain advances before the original maturity. The FHLBanks record prepayment fees net of basis adjustments related to hedging activities included in the carrying value of the advance as interest income on advances on the Combined Statement of Income.

If a new advance does not qualify as a modification of an existing advance, the existing advance is treated as an advance termination and any prepayment fee, net of hedging adjustments, is recorded as interest income on advances on the Combined Statement of Income.

If a new advance qualifies as a modification of an existing advance, any prepayment fee, net of hedging adjustments, is deferred, recorded in the basis of the modified advance, and amortized using a level-yield methodology over the life of the modified advance to interest income on advances. If the modified advance is hedged and meets hedge accounting requirements, the modified advance is marked to fair value, depending on the risk being hedged, and subsequent fair value changes that are attributable to the hedged risk are recorded in interest income on advances.

Mortgage Loans Held for Portfolio

Each FHLBank classifies mortgage loans that it has the intent and ability to hold for the foreseeable future, or until maturity or payoff, as held for portfolio. These mortgage loans are reported at amortized cost, which is net of premiums, discounts, deferred loan fees or costs, hedging adjustments, and charge-offs. Accrued interest receivable is recorded separately on the Combined Statement of Condition. An allowance for credit losses is recorded with a corresponding adjustment to the provision (reversal) for credit losses. The FHLBanks do not purchase mortgage loans with credit deterioration present at the time of purchase.

Beginning January 1, 2020, the FHLBanks adopted the CECL accounting guidance. Quarterly, each FHLBank measures expected credit losses on mortgage loans on a collective basis, pooling loans with similar risk characteristics. If a mortgage loan no longer shares risk characteristics with other loans, it is removed from the pool and evaluated for expected credit losses on an individual basis. When developing the allowance for credit losses, an FHLBank measures the expected loss over the estimated remaining life of a mortgage loan, which also considers how the FHLBank's credit enhancements mitigate credit losses. If a loan is purchased at a discount, the discount does not offset the allowance for credit losses. The FHLBanks include estimates of expected recoveries within the allowance for credit losses.

The allowance excludes uncollectible accrued interest receivable, as the FHLBanks write off accrued interest receivable by reversing interest income if a mortgage loan is placed on non-accrual status.

Prior to January 1, 2020, an FHLBank recorded an allowance for credit losses on mortgage loans if it was probable an impairment occurred in the FHLBank's mortgage loans held for portfolio as of the statement of condition date and the amount of loss could be reasonably estimated. A loan was considered impaired when, based on current information and events, it was probable that an FHLBank would be unable to collect all amounts due according to the contractual terms of the loan agreement.

Premiums and Discounts. An FHLBank defers and amortizes premiums and accretes discounts paid to and received by participating financial institutions (PFIs), deferred loan fees or costs, and hedging basis adjustments to interest income using either the contractual interest method or the retrospective interest method. In determining prepayment estimates for the retrospective interest method, mortgage loans are aggregated by similar characteristics (type, maturity, note rate, and acquisition date).

Credit Enhancement Fees. For conventional mortgage loans, PFIs retain a portion of the credit risk on the loans they sell to the FHLBanks by providing credit enhancement either through a direct liability to pay credit losses up to a specified amount or through a contractual obligation to the FHLBanks. To secure this obligation, a PFI may either pledge collateral or purchase supplemental mortgage insurance. For certain mortgage loans purchased under the MPF Program, PFIs are paid a credit enhancement fee (CE Fee) for assuming credit risk and in some instances all or a portion of the CE Fee may be performance-based. CE Fees are paid monthly based on the remaining unpaid principal balance of the loans in a master commitment. CE Fees are recorded as an offset to mortgage loan interest income. To the extent an FHLBank experiences losses in a master commitment, it may be able to recapture performance-based CE Fees paid to that PFI to offset these losses.

Other Fees. The FHLBanks may receive other non-origination fees, such as delivery commitment extension fees, pair-off fees, and price adjustment fees. Delivery commitment extension fees are received when a PFI requests to extend the delivery commitment period beyond the original stated expiration. These fees compensate the FHLBanks for lost interest as a result of late funding and are recorded in non-interest income as received. Pair-off fees represent a make-whole provision; they are received when the amount funded is less than a specific percentage of the delivery commitment amount and are recorded in non-interest income. Price adjustment fees are received when the amount funded is greater than a specified percentage of the delivery commitment amount; they represent purchase price adjustments to the related loans acquired and are recorded as a part of the carrying value of the loans.

Non-accrual Loans. A past due loan is one where the borrower has failed to make a full payment of principal and interest within 30 days of its due date. The FHLBanks place a conventional mortgage loan on non-accrual status if it is determined that either (1) the collection of interest or principal is doubtful or (2) interest or principal is past due for 90 days or more, except when the loan is well-secured (e.g., through credit enhancements) and in the process of collection. As such, the FHLBanks do not place conventional mortgage loans over 90 days delinquent on non-accrual status when losses are not expected to be incurred. The FHLBanks do not place government-guaranteed or -insured mortgage loans on non-accrual status due to the U.S. government guarantee or insurance on these loans and the contractual obligation of the loan servicer to repurchase the loans when certain criteria are met. For those mortgage loans placed on non-accrual status, accrued but uncollected interest is reversed against interest income. The FHLBanks record cash payments received first as interest income and then as a reduction of principal as specified in the contractual agreement, unless the collection of the remaining principal amount due is considered doubtful. If the collection of the remaining principal amount due is considered doubtful, then cash payments received would be applied first solely to principal until the remaining principal amount due is expected to be collected and then as a recovery of any charge-off, if applicable, followed by recording interest income. A loan on non-accrual status may be restored to accrual status when (1) none of its contractual principal and interest is due and unpaid, and an FHLBank expects repayment of the remaining contractual interest and principal, or (2) it otherwise becomes well secured and in the process of collection.

Troubled Debt Restructuring. An FHLBank considers a troubled debt restructuring (TDR) to have occurred when a concession is granted to a borrower for economic or legal reasons related to the borrower's financial difficulties and that concession would not have been considered otherwise. An FHLBank has granted a concession when it does not expect to collect all amounts due to the FHLBank under the original contract as a result of the restructuring. Loans that are discharged in Chapter 7 bankruptcy and have not been reaffirmed by the borrowers are also considered to be TDRs, except in certain cases where supplemental mortgage insurance policies are held or where all contractual amounts due are still expected to be collected as a result of certain credit enhancements or government guarantees.

On March 27, 2020, the Coronavirus Aid, Relief, and Economic Security Act (the CARES Act) was signed into law. Section 4013 of the CARES Act provides optional, temporary relief from the accounting and reporting requirements for TDRs for certain loan modifications for which borrowers were adversely affected by COVID-19 (hereinafter referred to as COVID-related modifications) granted to borrowers that were not more than 30 days past due on payments as of December 31, 2019. Specifically, the CARES Act provides that a financial institution may elect to suspend: (1) the requirements under GAAP for certain loan modifications that would otherwise be categorized as a TDR, and (2) any determination that such loan modifications would be considered a TDR, including the related impairment for accounting purposes. TDR relief applies to COVID-related modifications made from March 1, 2020 to December 31, 2020. On December 27, 2020, the Consolidated Appropriations Act, 2021, was signed into law, extending the applicable period for TDR relief to January 1, 2022. In the second quarter of 2020, the FHLBanks elected to apply the TDR relief provided by the CARES Act. As such, all COVID-related modifications meeting the provisions of the CARES Act are excluded from TDR classification and accounting, and the FHLBanks consider these loans to have a current payment status as long as payments are being made in accordance with the new terms. Alternatively, COVID-related modifications that do not meet the provisions of the CARES Act continue to be assessed for TDR classification under the FHLBanks' existing accounting policies. Additionally, the FHLBanks continue to apply their delinquency, non-accrual loans, and charge-off policies during the forbearance plan period. The FHLBanks estimate the allowance for credit losses for COVID-related modifications in the same manner as other mortgage loans held for portfolio.

Collateral-dependent Loans. A loan is considered collateral-dependent when the borrower is experiencing financial difficulty and repayment is expected to be substantially through the sale of the underlying collateral. A loan that is considered collateral-dependent is measured for credit loss based on the fair value of the underlying property less estimated selling costs, with any shortfall recognized as an allowance for loan loss or charged-off.

Charge-off Policy. A charge-off is recorded if it is estimated that the amortized cost and any applicable accrued interest in a loan will not be recovered. The FHLBanks evaluate whether to record a charge-off on a conventional mortgage loan upon the occurrence of a confirming event. Confirming events include, but are not limited to, the occurrence of foreclosure or notification of a claim against any of the credit enhancements. The FHLBanks charge off the portion of outstanding conventional mortgage loan balances in excess of fair value of the underlying property, less cost to sell and adjusted for any available credit enhancements, for loans that are 180 days or more delinquent and/or certain loans where the borrower has filed for bankruptcy.

Mortgage Loans Held for Sale

Mortgage loans held for sale are classified in other assets, net on the Combined Statement of Condition. The fair value option has been elected for these mortgage loans.

In addition, under the MPF Xtra product, the FHLBank of Chicago purchases eligible mortgage loans from PFIs, which are concurrently sold to Fannie Mae and are therefore not carried on the Combined Statement of Condition.

Derivatives and Hedging Activities

All derivatives are recognized on the Combined Statement of Condition at their fair values and are reported as either derivative assets or derivative liabilities, net of cash collateral, and accrued interest received from or pledged to clearing agents and/or counterparties. The fair values of derivatives are netted by clearing agent and/or counterparty when the netting requirements have been met. If these netted amounts are positive, they are classified as an asset, and if negative, they are classified as a liability. Cash flows associated with a derivative are reflected as cash flows from operating activities on the Combined Statement of Cash Flows unless the derivative meets the criteria to be a financing derivative.

Each FHLBank utilizes one or two Derivative Clearing Organizations (Clearinghouses), for all cleared derivative transactions, LCH Ltd. and/or CME Clearing. At both Clearinghouses, variation margin is characterized as daily settlement payments and initial margin is considered collateral.

Derivative Designations. Each derivative is designated as one of the following:

- a qualifying hedge of the change in fair value of a recognized asset or liability or an unrecognized firm commitment (a fair value hedge);
- a qualifying hedge of a forecasted transaction or the variability of cash flows that are to be received or paid in connection with a recognized asset or liability (a cash flow hedge);
- a non-qualifying hedge (economic hedge) for asset-liability management purposes; or
- a non-qualifying hedge of another derivative (an intermediation hedge) that is offered as a product to members or used to offset other derivatives with non-member counterparties.

Accounting for Fair Value or Cash Flow Hedges. If hedging relationships meet certain criteria, including, but not limited to, formal documentation of the hedging relationship and an expectation to be highly effective, they qualify for fair value or cash flow hedge accounting. For cash flow hedges, the FHLBanks measure effectiveness using the hypothetical derivative method, which compares the cumulative change in fair value of the actual derivative designated as the hedging instrument to the cumulative change in fair value of a hypothetical derivative having terms that identically match the critical terms of the hedged forecasted transaction.

Two approaches to hedge accounting include:

- *Long-haul hedge accounting.* The application of long-haul hedge accounting requires an FHLBank to assess (both at the hedge's inception and at least quarterly) whether the derivatives that are used in hedging transactions have been highly effective in offsetting changes in the fair value or cash flows of hedged items or forecasted transactions attributable to the hedged risk and whether those derivatives may be expected to remain highly effective in future periods.
- *Short-cut hedge accounting.* Transactions that meet certain criteria qualify for the short-cut method of hedge accounting in which an assumption can be made that the change in fair value of a hedged item, due to changes in the hedged risk, exactly offsets the change in fair value of the related derivative. Under the short-cut method, the entire change in fair value of the interest-rate swap is considered to be highly effective at achieving offsetting changes in fair values or cash flows of the hedged asset or liability. If certain criteria are met, a derivative relationship no longer qualifying for short-cut hedge accounting can fall back to the long-haul hedge accounting method.

Derivatives are typically executed at the same time as the hedged item, and each FHLBank designates the hedged item in a qualifying hedging relationship at the trade date. In many hedging relationships, an FHLBank may designate the hedging relationship upon its commitment to disburse an advance or trade a consolidated obligation in which settlement occurs within the shortest period of time possible for the type of instrument based on market settlement conventions. An FHLBank then records the changes in fair value of the derivative and the hedged item beginning on the trade date.

Changes in the fair value of a derivative that is designated and qualifies as a fair value hedge, along with changes in the fair value of the hedged asset or liability that are attributable to the hedged risk, are recorded in net interest income in the same line as the earnings effect of the hedged item. Changes in the fair value of a derivative that is designated and qualifies as a cash flow hedge are recorded in OCI. These amounts remain in accumulated other comprehensive income (AOCI) until earnings are affected by the variability of the cash flows of the hedged transaction, at which time these amounts are reclassified from AOCI to the same income statement line as the earnings effect of the hedged item. Net gains (losses) on derivatives and hedging activities for qualifying hedges recorded in net interest income include unrealized and realized gains (losses), which include net interest settlements.

Accounting for Economic Hedges or Intermediary Activities. An economic hedge is defined as a derivative hedging specific or non-specific underlying assets, liabilities, or firm commitments that does not qualify or was not designated for fair value or cash flow hedge accounting, but is an acceptable hedging strategy under an FHLBank's risk management program. These economic hedging strategies also comply with FHFA regulatory requirements prohibiting speculative hedge transactions. An economic hedge introduces the potential for earnings variability caused by the changes in fair value of the derivatives that are recorded in an FHLBank's income but that are not offset by corresponding changes in the value of the economically hedged assets, liabilities, or firm commitments. As a result, an FHLBank recognizes only the net interest and the change in fair value of these derivatives in non-interest income as net gains (losses) on derivatives with no offsetting fair value adjustments for the assets, liabilities, or firm commitments.

The derivatives used in intermediary activities do not qualify for hedge accounting treatment and are separately marked-to-market through earnings. The net result of the accounting for these derivatives does not significantly affect the operating results of the FHLBanks. These amounts are recorded in non-interest income as net gains (losses) on derivatives.

Accrued Interest Receivables and Payables. The net settlements of interest receivables and payables related to derivatives designated in fair value or cash flow hedging relationships are recognized as adjustments to the income or expense of the designated hedged item. The net settlements of interest receivables and payables related to intermediated derivatives for members and other economic hedges are recognized in non-interest income as net gains (losses) on derivatives.

Discontinuance of Hedge Accounting. An FHLBank discontinues hedge accounting prospectively when:

- it determines that the derivative is no longer highly effective in offsetting changes in the fair value or cash flows of a hedged item attributable to the hedged risk (including hedged items such as firm commitments or forecasted transactions);
- the derivative and/or the hedged item expires or is sold, terminated, or exercised;
- it is no longer probable that the forecasted transaction in a cash flow hedge will occur in the originally expected period or within the following two months;
- a hedged firm commitment in a fair value hedge no longer meets the definition of a firm commitment; or
- management determines that designating the derivative as a hedging instrument is no longer appropriate.

When hedge accounting is discontinued, an FHLBank either terminates the derivative or continues to carry the derivative on the statement of condition at its fair value, ceases to adjust the hedged asset or liability for changes in fair value, and amortizes the cumulative basis adjustment on the hedged item into earnings over the remaining life of the hedged item using a level-yield methodology.

When hedge accounting is discontinued because an FHLBank determines that the derivative no longer qualifies as an effective cash flow hedge of an existing hedged item, that FHLBank continues to carry the derivative on the statement of condition at its fair value and reclassifies the cumulative OCI adjustment into earnings when earnings are affected by the existing hedged item (i.e., the original forecasted transaction).

If an FHLBank discontinues cash flow hedge accounting because it is probable that a forecasted transaction will not occur by the end of the originally expected time period or within the following two months, the gains and losses that were in AOCI are recognized immediately in earnings.

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

Embedded Derivatives. The FHLBanks may issue debt, make advances, or purchase financial instruments in which a derivative instrument is “embedded.” Upon execution of these transactions, an FHLBank assesses whether the economic characteristics of the embedded derivative are clearly and closely related to the economic characteristics of the remaining component of the debt, advance, or purchased financial instrument (the host contract) and whether a separate, non-embedded instrument with the same terms as the embedded instrument would meet the definition of a derivative instrument. The embedded derivative is separated from the host contract, carried at fair value, and designated as a stand-alone derivative instrument pursuant to an economic hedge when an FHLBank determines that (1) the embedded derivative has economic characteristics that are not clearly and closely related to the economic characteristics of the host contract and (2) a separate, stand-alone instrument with the same terms would qualify as a derivative instrument. However, the entire contract is carried at fair value and no portion of the contract is designated as a hedging instrument if the entire contract (the host contract and the embedded derivative) is to be measured at fair value, with changes in fair value reported in current period earnings (such as an investment security classified as “trading” as well as hybrid financial instruments for which the fair value option is elected), or if an FHLBank cannot reliably identify and measure the embedded derivative for purposes of separating that derivative from its host contract.

Premises, Software, and Equipment

Premises, software, and equipment are included in other assets on the Combined Statement of Condition. The FHLBanks record premises, software, and equipment at cost less accumulated depreciation and amortization and compute depreciation using the straight-line method over the estimated useful lives of assets, which range from one to 40 years. Leasehold improvements are amortized using the straight-line method over the shorter of the estimated useful life of the improvement or the remaining term of the lease. The FHLBanks capitalize improvements and major renewals but expense ordinary maintenance and repairs when incurred. The FHLBanks capitalize and amortize the cost of computer software developed or obtained for internal use over future periods. In addition, the FHLBanks include gains and losses on the disposal of premises, software, and equipment in non-interest income (loss) on the Combined Statement of Income.

At December 31, 2021 and 2020, premises, software, and equipment were \$389 million and \$378 million, net of accumulated depreciation and amortization of \$673 million and \$640 million. For the years ended December 31, 2021, 2020, and 2019, the depreciation and amortization expense for premises, software, and equipment was \$67 million, \$63 million, and \$70 million.

Leases

Certain FHLBanks lease office space and other facilities, as well as office equipment, to run their business operations. At December 31, 2021 and 2020, the FHLBanks included in the Combined Statement of Condition \$193 million and \$217 million of lease right-of-use assets in other assets, net and \$231 million and \$254 million, of lease liabilities in other liabilities. The FHLBanks recognized operating lease costs, in the other operating expense line of the Combined Statement of Income, of \$30 million, \$28 million, and \$31 million for the years ended December 31, 2021, 2020, and 2019.

Consolidated Obligations

Consolidated obligations are recorded at amortized cost unless an FHLBank has elected the fair value option, in which case the consolidated obligations are carried at fair value.

Discounts and Premiums. The FHLBanks amortize premiums and accrete discounts as well as hedging basis adjustments on consolidated obligations to interest expense using the interest method over the term to maturity or the estimated life of the corresponding consolidated obligation.

Concessions. The FHLBanks pay concessions to dealers in connection with the issuance of certain consolidated obligations. The Office of Finance prorates the amount of the concession to each FHLBank based upon the percentage of the debt issued on behalf of that FHLBank. Concessions paid on consolidated obligations designated under the fair value option are expensed as incurred in non-interest expense. The FHLBanks record concessions paid on consolidated obligations not designated under the fair value option as a direct deduction from their carrying amounts, consistent with the presentation of discounts on consolidated obligations. The concessions are amortized, using the interest method, over the term to maturity or the estimated life of the corresponding consolidated obligations. The amortization of those concessions is included in consolidated obligation interest expense.

Off-Balance Sheet Credit Exposures

Beginning January 1, 2020, the FHLBanks adopted the CECL accounting guidance. The FHLBanks evaluate their off-balance sheet credit exposures on a quarterly basis for expected credit losses. If deemed necessary, an allowance for expected credit losses on these off-balance sheet exposures is recorded in other liabilities with a corresponding adjustment to the provision (reversal) for credit losses. Prior to January 1, 2020, the FHLBanks recorded an allowance for credit losses on off-balance sheet credit exposures if it was probable an impairment occurred as of the statement of condition date and the amount of loss could be reasonably estimated.

Mandatorily Redeemable Capital Stock

An FHLBank generally reclassifies stock subject to redemption from capital stock to a liability after a member provides written notice of redemption, gives notice of intention to withdraw from membership, or attains non-member status by merger or acquisition, relocation, charter termination, voluntary termination, or involuntary termination from membership, because the member's shares will then meet the definition of a mandatorily redeemable financial instrument. Shares meeting this definition are reclassified to a liability at fair value. Dividends declared on shares classified as a liability are accrued at the expected dividend rate and reflected as interest expense on the Combined Statement of Income. The repurchase or redemption of mandatorily redeemable capital stock is reflected as a financing cash outflow on the Combined Statement of Cash Flows.

If a member cancels its written notice of redemption or notice of withdrawal, the affected FHLBank will reclassify mandatorily redeemable capital stock from liabilities to capital. After the reclassification, dividends on the capital stock will no longer be classified as interest expense.

Restricted Retained Earnings

The Joint Capital Enhancement Agreement, as amended (Capital Agreement), provides that each FHLBank will, on a quarterly basis, allocate 20% of its net income to a separate restricted retained earnings account until the balance of that account, calculated as of the last day of each calendar quarter, equals at least one percent of that FHLBank's average balance of outstanding consolidated obligations for the calendar quarter. Additionally, the Capital Agreement provides that amounts in restricted retained earnings in excess of 150% of an FHLBank's restricted retained earnings minimum (i.e., one percent of that FHLBank's average balance of outstanding consolidated obligations calculated as of the last day of each calendar quarter) may be released from restricted retained earnings. The FHLBanks' restricted retained earnings are not available to pay dividends and are presented separately on the Combined Statement of Condition.

Gains on Litigation Settlement, Net

Litigation settlement gains, net of related legal expenses, are recorded in non-interest income as other, net on the Combined Statement of Income. A litigation settlement gain is considered realized and recorded when an affected FHLBank receives cash or assets that are readily convertible to known amounts of cash or claims to cash. In addition, a litigation settlement gain is considered realizable and recorded when an FHLBank enters into a signed agreement that is not subject to appeal, where the counterparty has the ability to pay, and the amount to be received can be reasonably estimated. Prior to being realized or realizable, the FHLBanks consider potential litigation settlement gains to be gain contingencies, and therefore they are not recorded on the Combined Statement of Income. The related legal expenses are contingent-based fees and are only incurred and recorded upon a litigation settlement gain.

FHFA Expenses

The portion of the FHFA's expenses and working capital fund paid by the FHLBanks are allocated among the FHLBanks based on the pro-rata share of the annual assessments (which are based on the ratio between each FHLBank's minimum required regulatory capital and the aggregate minimum required regulatory capital of every FHLBank).

Office of Finance Expenses

Each FHLBank's proportionate share of Office of Finance operating and capital expenditures is calculated using a formula that is based upon the following components: (1) two-thirds based upon each FHLBank's share of total consolidated obligations outstanding and (2) one-third based upon an equal pro-rata allocation.

Assessments

Affordable Housing Program. The FHLBank Act requires each FHLBank to establish and fund an AHP, providing subsidies to members to assist in the purchase, construction, or rehabilitation of housing for very low- and low- or moderate-income households. Each FHLBank charges the required funding for AHP to earnings and establishes a liability. An FHLBank issues AHP advances at interest rates below the customary interest rate for non-subsidized advances. A discount on the AHP advance and charge against AHP liability is recorded for the present value of the variation in the cash flow caused by the difference in the interest rate between the AHP advance rate and that FHLBank's related cost of funds for comparable maturity funding. As an alternative, that FHLBank has the authority to make the AHP subsidy available to members as a grant. The discount on AHP advances is accreted to interest income on advances using a level-yield methodology over the life of the advance.

Note 2 - Recently Issued and Adopted Accounting Guidance

The following table provides a summary of recently issued accounting standards which may have an effect on the combined financial statements.

Accounting Standards Update (ASU)	Description	Effective Date	Effect on the Combined Financial Statements or Other Significant Matters
Facilitation of the Effects of Reference Rate Reform on Financial Reporting, as amended (ASU 2020-04)	This guidance provides temporary optional guidance to ease the potential burden in accounting for reference rate reform. The new guidance provides optional expedients and exceptions for applying generally accepted accounting principles to transactions affected by reference rate reform if certain criteria are met. These transactions include: <ul style="list-style-type: none"> contract modifications, hedging relationships, and sale and/or transfer of debt securities classified as HTM. 	This guidance became effective immediately for the FHLBanks, and they may elect to apply the amendments through December 31, 2022.	The FHLBanks either elected or plan to elect the majority of the optional expedients and exceptions provided; however, the full effect on the FHLBanks' combined financial condition, combined results of operations, and combined cash flows has not yet been determined. In particular, during the fourth quarter of 2020, as amended by and in accordance with ASU 2021-01, the FHLBanks elected optional expedients specific to discounting transition on a retrospective basis, which did not have a material effect on the FHLBanks' combined financial condition, combined results of operations, or combined cash flows. Additionally, to date, certain FHLBanks sold or transferred to AFS certain HTM securities, pursuant to the guidance.

Note 3 - Cash and Due from Banks

Cash and due from banks on the Statement of Condition includes cash on hand, cash items in the process of collection, compensating balances, and amounts due from correspondent banks and the Federal Reserve Bank.

Compensating Balances

The FHLBanks maintain collected cash balances with commercial banks in return for certain services. These agreements contain no legal restrictions on the withdrawal of funds. The average collected cash balances were \$920 million and \$775 million for the years ended December 31, 2021 and 2020.

Pass-through Deposit Reserves

Certain FHLBanks act as pass-through correspondents for member institutions required to deposit reserves with the Federal Reserve Banks. The amount shown as cash and due from banks includes pass-through reserves deposited with the Federal Reserve Banks of \$32 million and \$34 million at December 31, 2021 and 2020.

Note 4 - Investments

The FHLBanks make short-term investments in interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold and may make other investments in debt securities, which are classified as trading, AFS, or HTM.

Interest-Bearing Deposits, Securities Purchased under Agreements to Resell, and Federal Funds Sold

The FHLBanks invest in interest-bearing deposits, securities purchased under agreements to resell, and federal funds sold to provide short-term liquidity. These investments are generally transacted with counterparties that have received a credit rating of triple-B or greater (investment grade) by a nationally recognized statistical rating organization. At December 31, 2021 and 2020, none of these investments were with counterparties rated below triple-B and 1% and 7% of these investments, based on amortized cost, were with counterparties that are unrated. These may differ from any internal ratings of the investments by an FHLBank, if applicable.

Federal funds sold are unsecured loans that are generally transacted on an overnight term. FHFA regulations include a limit on the amount of unsecured credit an individual FHLBank may extend to a counterparty. At December 31, 2021 and 2020, all investments in interest-bearing deposits and federal funds sold were repaid or expected to be repaid according to the contractual terms. No allowance for credit losses was recorded for these assets at December 31, 2021 and 2020. The carrying values of interest-bearing deposits and federal funds sold exclude accrued interest receivable totaling \$1 million at both December 31, 2021 and 2020.

Securities purchased under agreements to resell are short-term collateralized loans and are structured such that they are evaluated regularly to determine if the market value of the underlying securities decreases below the market value required as collateral (i.e., subject to collateral maintenance provisions). If so, the counterparty must place an equivalent amount of additional securities as collateral or remit an equivalent amount of cash, generally by the next business day. Based upon the collateral held as security and collateral maintenance provisions with the relevant counterparties, each FHLBank determined that no allowance for credit losses was needed for its securities purchased under agreements to resell at December 31, 2021 and 2020. The carrying value of securities purchased under agreements to resell excludes accrued interest receivable of less than \$1 million at both December 31, 2021 and 2020.

Debt Securities

The FHLBanks invest in debt securities, which are classified as trading, AFS, or HTM. Within these investments, the FHLBanks are primarily subject to credit risk related to private-label mortgage-backed securities (private-label MBS or PLMBS) that are supported by underlying mortgage or asset-backed loans. The FHLBanks are prohibited by FHFA regulations from purchasing certain higher-risk securities, such as equity securities and debt instruments that are not investment quality, other than certain investments targeted at low-income persons or communities and instruments that experienced credit deterioration after their purchase by the FHLBanks.

Trading Securities

Table 4.1 presents the fair value of trading securities by major security type at December 31, 2021 and 2020.

Table 4.1 - Trading Securities by Major Security Type

(dollars in millions)

Fair Value	December 31, 2021	December 31, 2020
Non-mortgage-backed securities		
Certificates of deposit	\$ 200	\$ —
U.S. Treasury obligations	20,367	50,734
Other U.S. obligations	102	114
GSE and Tennessee Valley Authority obligations	2,359	2,827
Other	202	254
Total non-mortgage-backed securities	23,230	53,929
Mortgage-backed securities		
U.S. obligations single-family	2	6
GSE single-family	37	48
GSE multifamily	1,085	1,235
Total mortgage-backed securities	1,124	1,289
Total	\$ 24,354	\$ 55,218

Table 4.2 presents a summary of net gains (losses) on trading securities for the years ended December 31, 2021, 2020, and 2019.

Table 4.2 - Net Gains (Losses) on Trading Securities

(dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
Net unrealized gains (losses) on trading securities held at period-end	\$ (477)	\$ 402	\$ 424
Net gains (losses) on trading securities sold/matured during the period	(232)	85	27
Net gains (losses) on trading securities	\$ (709)	\$ 487	\$ 451

Available-for-Sale Securities

Table 4.3 presents the amortized cost and fair value of AFS securities by major security type at December 31, 2021 and 2020.

Table 4.3 - AFS Securities by Major Security Type

(dollars in millions)

	December 31, 2021				
	Amortized Cost ⁽¹⁾	Allowance for Credit Losses	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Non-mortgage-backed securities					
U.S. Treasury obligations	\$ 23,857	\$ —	\$ 37	\$ (12)	\$ 23,882
Other U.S. obligations	2,875	—	40	(12)	2,903
GSE and Tennessee Valley Authority obligations	10,199	—	205	(27)	10,377
State or local housing agency obligations	1,761	—	9	(5)	1,765
Federal Family Education Loan Program ABS	2,642	—	130	—	2,772
Other	724	—	11	(6)	729
Total non-mortgage-backed securities	42,058	—	432	(62)	42,428
Mortgage-backed securities					
U.S. obligations single-family	3,549	—	28	—	3,577
U.S. obligations multifamily	541	—	—	—	541
GSE single-family	4,866	—	46	(1)	4,911
GSE multifamily	64,194	—	1,098	(142)	65,150
Private-label	1,614	(19)	213	(4)	1,804
Total mortgage-backed securities	74,764	(19)	1,385	(147)	75,983
Total	\$ 116,822	\$ (19)	\$ 1,817	\$ (209)	\$ 118,411
December 31, 2020					
	Amortized Cost ⁽¹⁾	Allowance for Credit Losses	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Non-mortgage-backed securities					
U.S. Treasury obligations	\$ 8,522	\$ —	\$ 7	\$ —	\$ 8,529
Other U.S. obligations	3,550	—	88	(2)	3,636
GSE and Tennessee Valley Authority obligations	11,726	—	204	(37)	11,893
State or local housing agency obligations	1,081	—	16	(23)	1,074
Federal Family Education Loan Program ABS	2,922	—	121	(9)	3,034
Other	777	—	12	(12)	777
Total non-mortgage-backed securities	28,578	—	448	(83)	28,943
Mortgage-backed securities					
U.S. obligations single-family	4,419	—	33	(1)	4,451
U.S. obligations multifamily	47	—	—	—	47
GSE single-family	5,412	—	62	—	5,474
GSE multifamily	61,198	—	848	(126)	61,920
Private-label	2,117	(24)	215	(20)	2,288
Total mortgage-backed securities	73,193	(24)	1,158	(147)	74,180
Total	\$ 101,771	\$ (24)	\$ 1,606	\$ (230)	\$ 103,123

(1) Includes adjustments made to the cost basis of an investment for accretion, amortization, net charge-offs, and/or fair value hedge accounting adjustments, and excludes accrued interest receivable of \$247 million and \$249 million at December 31, 2021 and 2020.

Table 4.4 presents the AFS securities with unrealized losses by major security type and length of time that individual securities have been in a continuous unrealized loss position at December 31, 2021 and 2020.

Table 4.4 - AFS Securities in a Continuous Unrealized Loss Position

(dollars in millions)

	December 31, 2021					
	Less than 12 Months		12 months or more		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Non-mortgage-backed securities						
U.S. Treasury obligations	\$ 7,438	\$ (12)	\$ —	\$ —	\$ 7,438	\$ (12)
Other U.S. obligations	695	(12)	115	—	810	(12)
GSE and Tennessee Valley Authority obligations	1,193	—	562	(27)	1,755	(27)
State or local housing agency obligations	—	—	522	(5)	522	(5)
Other	—	—	389	(6)	389	(6)
Total non-mortgage-backed securities	9,326	(24)	1,588	(38)	10,914	(62)
Mortgage-backed securities						
GSE single-family	378	(1)	106	—	484	(1)
GSE multifamily	8,177	(88)	4,783	(54)	12,960	(142)
Private-label	19	—	154	(4)	173	(4)
Total mortgage-backed securities	8,574	(89)	5,043	(58)	13,617	(147)
Total	\$ 17,900	\$ (113)	\$ 6,631	\$ (96)	\$ 24,531	\$ (209)

	December 31, 2020					
	Less than 12 Months		12 months or more		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
Non-mortgage-backed securities						
Other U.S. obligations	\$ 348	\$ —	\$ 700	\$ (2)	\$ 1,048	\$ (2)
GSE and Tennessee Valley Authority obligations	121	(2)	508	(35)	629	(37)
State or local housing agency obligations	335	(15)	398	(8)	733	(23)
Federal Family Education Loan Program ABS	21	—	460	(9)	481	(9)
Other	—	—	430	(12)	430	(12)
Total non-mortgage-backed securities	825	(17)	2,496	(66)	3,321	(83)
Mortgage-backed securities						
U.S. obligations single-family	9	—	619	(1)	628	(1)
GSE multifamily	2,573	(18)	15,431	(108)	18,004	(126)
Private-label	156	(7)	178	(13)	334	(20)
Total mortgage-backed securities	2,738	(25)	16,228	(122)	18,966	(147)
Total	\$ 3,563	\$ (42)	\$ 18,724	\$ (188)	\$ 22,287	\$ (230)

Table 4.5 presents the amortized cost and fair value of AFS securities by contractual maturity at December 31, 2021 and 2020.

Table 4.5 - AFS Securities by Contractual Maturity

(dollars in millions)

Year of Maturity	December 31, 2021		December 31, 2020	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
Non-mortgage-backed securities				
Due in one year or less	\$ 7,468	\$ 7,471	\$ 7,343	\$ 7,346
Due after one year through five years	15,855	15,957	10,181	10,256
Due after five years through ten years	12,986	13,094	5,444	5,565
Due after ten years	3,107	3,134	2,688	2,742
Federal Family Education Loan Program ABS(1)	2,642	2,772	2,922	3,034
Total non-mortgage-backed securities	42,058	42,428	28,578	28,943
Mortgage-backed securities(1)	74,764	75,983	73,193	74,180
Total	\$ 116,822	\$ 118,411	\$ 101,771	\$ 103,123

(1) MBS and Federal Family Education Loan Program ABS are not presented by contractual maturity because their expected maturities will likely differ from contractual maturities as borrowers may have the right to call or prepay obligations with or without call or prepayment fees.

Table 4.6 presents the proceeds from sale and gross gains and losses on sale of AFS securities for the years ended December 31, 2021, 2020, and 2019.

Table 4.6 - Proceeds from Sale and Gross Gains and Losses on Sale of AFS Securities

(dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
Proceeds from sale of AFS securities(1)	\$ 20	\$ 1,937	\$ 511
Gross gains on sale of AFS securities	\$ 1	\$ 121	\$ 1
Gross losses on sale of AFS securities	—	—	—
Net realized gains (losses) from sale of AFS securities	\$ 1	\$ 121	\$ 1

(1) Proceeds from sale of AFS securities for the year ended December 31, 2020, was revised from \$3,301 million to \$1,937 million to correct an error in the amount previously reported. This revision was not deemed to be material.

Held-to-Maturity Securities

Table 4.7 presents the amortized cost, net carrying value, and fair value of HTM securities by major security type at December 31, 2021 and 2020.

Table 4.7 - HTM Securities by Major Security Type

(dollars in millions)

	December 31, 2021						
	Amortized Cost(1)	Allowance for Credit Losses	OTTI Recognized in AOCI	Net Carrying Value	Gross Unrecognized Holding Gains(2)	Gross Unrecognized Holding Losses(2)	Fair Value
Non-mortgage-backed securities							
U.S. Treasury obligations	\$ 47	\$ —	\$ —	\$ 47	\$ —	\$ —	\$ 47
Other U.S. obligations	1,509	—	—	1,509	10	—	1,519
GSE and Tennessee Valley Authority obligations	1,824	—	—	1,824	77	(6)	1,895
State or local housing agency obligations	522	—	—	522	1	(19)	504
Total non-mortgage-backed securities	3,902	—	—	3,902	88	(25)	3,965
Mortgage-backed securities							
U.S. obligations single-family	4,177	—	—	4,177	24	(21)	4,180
GSE single-family	11,766	—	—	11,766	179	(23)	11,922
GSE multifamily	27,429	—	—	27,429	424	(37)	27,816
Private-label	404	—	(6)	398	22	(3)	417
Total mortgage-backed securities	43,776	—	(6)	43,770	649	(84)	44,335
Total	\$ 47,678	\$ —	\$ (6)	\$ 47,672	\$ 737	\$ (109)	\$ 48,300
	December 31, 2020						
	Amortized Cost(1)	Allowance for Credit Losses	OTTI Recognized in AOCI	Net Carrying Value	Gross Unrecognized Holding Gains(2)	Gross Unrecognized Holding Losses(2)	Fair Value
Non-mortgage-backed securities							
Certificates of deposit	\$ 750	\$ —	\$ —	\$ 750	\$ —	\$ —	\$ 750
U.S. Treasury obligations	41	—	—	41	—	—	41
Other U.S. obligations	1,101	—	—	1,101	25	—	1,126
GSE and Tennessee Valley Authority obligations	2,624	—	—	2,624	103	—	2,727
State or local housing agency obligations	1,491	—	—	1,491	2	(26)	1,467
Total non-mortgage-backed securities	6,007	—	—	6,007	130	(26)	6,111
Mortgage-backed securities							
U.S. obligations single-family	4,466	—	—	4,466	60	(5)	4,521
GSE single-family	19,888	—	—	19,888	322	(13)	20,197
GSE multifamily	31,451	—	—	31,451	738	(31)	32,158
Private-label	552	(1)	(13)	538	31	(9)	560
Total mortgage-backed securities	56,357	(1)	(13)	56,343	1,151	(58)	57,436
Total	\$ 62,364	\$ (1)	\$ (13)	\$ 62,350	\$ 1,281	\$ (84)	\$ 63,547

(1) Amortized cost of HTM securities includes adjustments made to the cost basis of an investment for accretion, amortization, and/or net charge-offs and excludes accrued interest receivable of \$48 million and \$64 million as of December 31, 2021 and 2020.

(2) Gross unrecognized holding gains (losses) represent the difference between fair value and net carrying value.

Table 4.8 presents the amortized cost, net carrying value, and fair value of HTM securities by contractual maturity at December 31, 2021 and 2020.

Table 4.8 - HTM Securities by Contractual Maturity

(dollars in millions)

Year of Maturity	December 31, 2021			December 31, 2020		
	Amortized Cost	Net Carrying Value(1)	Fair Value	Amortized Cost	Net Carrying Value(1)	Fair Value
Non-mortgage-backed securities						
Due in one year or less	\$ 1,706	\$ 1,706	\$ 1,706	\$ 1,711	\$ 1,711	\$ 1,712
Due after one year through five years	1,142	1,142	1,169	2,058	2,058	2,105
Due after five years through ten years	599	599	618	703	703	720
Due after ten years	455	455	472	1,535	1,535	1,574
Total non-mortgage-backed securities	3,902	3,902	3,965	6,007	6,007	6,111
Mortgage-backed securities(2)	43,776	43,770	44,335	56,357	56,343	57,436
Total	\$ 47,678	\$ 47,672	\$ 48,300	\$ 62,364	\$ 62,350	\$ 63,547

(1) Net carrying value of HTM securities represents amortized cost after adjustments for non-credit-related losses recognized in AOCI and allowance for credit losses.

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

Upon adopting Facilitation of the Effects of Reference Rate Reform on Financial Reporting (ASU 2020-04), certain FHLBanks exercised a one-time election in the second quarter of 2021, under which they transferred from HTM to AFS certain securities, which had an amortized cost of \$3.4 billion and unrealized gains of \$11.7 million on the date of transfer. During 2020, certain FHLBanks exercised a one-time election under which they sold certain HTM PLMBS, which had an amortized cost of \$378 million and realized a net gain of \$107 million, and they transferred from HTM to AFS certain securities, which had an amortized cost of \$254 million and a fair value of \$270 million on the date of transfer.

Certain FHLBanks sold securities out of their respective HTM portfolio that were near enough to their maturity date (for example, within three months of maturity) that changes in market interest rates would not have a significant effect on the security's fair value or had less than 15% of the acquired principal outstanding at the time of the sale. These sales are considered maturities for purposes of security classification. Table 4.9 presents the proceeds from sale and gains and losses on sale of HTM securities for the years ended December 31, 2021, 2020, and 2019.

Table 4.9 - Proceeds from Sale and Gains and Losses on Sale of HTM Securities

(dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
Proceeds from sale of HTM securities	\$ 6	\$ 862	\$ 195
Amortized cost of HTM securities sold	6	709	183
Net realized gains (losses) from sale of HTM securities	\$ —	\$ 153	\$ 12

Allowance for Credit Losses on AFS and HTM Securities

The FHLBanks evaluate AFS and HTM securities for credit losses on a quarterly basis. During the year ended December 31, 2021, the FHLBanks recognized a reversal of credit losses of \$4 million on AFS securities and during the year ended December 31, 2020, recognized a provision for credit losses of \$23 million on AFS and HTM securities, net, due primarily to a decline in the fair value of AFS PLMBS. Under the previous accounting methodology for securities impairment, the FHLBanks recognized a net OTTI loss of \$26 million on AFS and HTM securities during the year ended December 31, 2019.

Table 4.10 presents a rollforward of the allowance for credit losses on debt securities for the years ended December 31, 2021 and 2020.

Table 4.10 - Allowance for Credit Losses on Debt Securities

(dollars in millions)

	Year Ended December 31,			
	2021		2020	
	AFS	HTM	AFS	HTM
Balance, at beginning of period	\$ 24	\$ 1	\$ —	\$ —
Adjustments for cumulative effect of accounting change	—	—	—	6
Provision (reversal) for credit losses	(4)	—	27	(4)
Reduction due to intent to sell	1	(1)	1	(1)
Charge-offs, net of recoveries	(2)	—	(4)	—
Balance, at end of period	\$ 19	\$ —	\$ 24	\$ 1

To evaluate investment securities for credit losses at December 31, 2021 and 2020, the FHLBanks employed the following methodologies, based on the type of security:

AFS and HTM Securities (Excluding PLMBS)

The FHLBanks' AFS and HTM securities are principally certificates of deposit, U.S. Treasury and other U.S. obligations, GSE and Tennessee Valley Authority obligations, state or local housing agency obligations, and MBS issued by Ginnie Mae, Freddie Mac, and Fannie Mae that are backed by single-family or multifamily mortgage loans. The FHLBanks only purchase securities that are considered investment quality. Excluding PLMBS investments, at both December 31, 2021 and 2020, substantially all of the AFS and HTM securities, based on amortized cost, were rated single-A or above by a nationally recognized statistical rating organization, based on the lowest long-term credit rating for each security used by each individual FHLBank. These may differ from any internal ratings of the securities by an FHLBank, if applicable.

Each FHLBank evaluates its individual AFS securities for impairment by comparing the security's fair value to its amortized cost. Impairment may exist when the fair value of the investment is less than its amortized cost (i.e., in an unrealized loss position). At December 31, 2021 and 2020, certain of the FHLBanks' AFS securities were in an unrealized loss position. These losses are considered temporary as each FHLBank expects to recover the entire amortized cost basis on these AFS securities and neither intends to sell these securities nor considers it more likely than not that it will be required to sell these securities before its anticipated recovery of each security's remaining amortized cost basis. Furthermore, the FHLBanks had not experienced any payment defaults on these securities as of December 31, 2021 or 2020; and substantially all of these securities carry an implicit or explicit government guarantee. As a result, no allowance for credit losses was recorded on these AFS securities at December 31, 2021 and 2020.

Each FHLBank evaluates its HTM securities for impairment on a collective or pooled basis unless an individual assessment is deemed necessary because the securities do not possess similar risk characteristics. At December 31, 2021 and 2020, the FHLBanks had not established an allowance for credit losses on any of these HTM securities because the securities: (1) were all highly-rated and/or had short remaining terms to maturity, (2) had not experienced, nor did the FHLBanks expect, any payment default on these securities, and (3) in the case of U.S. Treasury, GSE, or other agency obligations, carry an implicit or explicit government guarantee such that the FHLBanks consider the risk of nonpayment to be zero.

Private-label MBS

Certain FHLBanks also hold investments in private-label MBS. No FHLBank has purchased private-label MBS since 2008. Although the FHLBanks invested in private-label MBS that at the date of purchase were substantially all rated triple-A, many of these securities have subsequently experienced significant credit deterioration. At both December 31, 2021 and 2020, 9% of private-label MBS, based on amortized cost, were rated single-A, or above, by a nationally recognized statistical rating organization; and the remaining securities were either rated less than single-A, or were unrated. To determine whether an allowance for credit losses is necessary on these securities, the FHLBanks perform cash flow analyses.

Each applicable FHLBank's evaluation of credit losses includes estimating the projected cash flows that the FHLBank is likely to collect based on an assessment of available information, including the structure of the applicable security and certain assumptions such as:

- the remaining payment terms for the security;
- prepayment speeds based on underlying loan-level borrower and loan characteristics;
- expected default rates based on underlying loan-level borrower and loan characteristics;
- loss severity on the collateral supporting each FHLBank's security based on underlying loan-level borrower and loan characteristics;
- expected housing price changes; and
- expected interest-rate assumptions.

Each applicable FHLBank performed a cash flow analysis using third-party models to assess whether the entire amortized cost basis of its private-label MBS will be recovered. The projected cash flows are based on a number of assumptions and expectations, and the results of these models can vary significantly with changes in assumptions and expectations. The projected cash flows, determined based on the model approach, reflect a best estimate scenario and include a base case housing price forecast and a base case housing price recovery path. At December 31, 2021 and 2020, the allowance for credit losses was \$19 million and \$24 million for AFS PLMBS. There was no allowance for credit losses on HTM PLMBS at December 31, 2021, and there was \$1 million of allowance for credit losses on HTM PLMBS at December 31, 2020. For certain private-label MBS where underlying collateral data is not available, alternative procedures as determined by each FHLBank are used to assess these securities for credit loss.

Table 4.11 presents a rollforward of amounts related to OTTI credit losses recognized in earnings for the year ended December 31, 2019.

Table 4.11 - Rollforward of the Amounts Related to OTTI Credit Losses Recognized into Earnings

(dollars in millions)

	2019
Balance, at beginning of period	\$ 2,495
Additions	
Additional OTTI credit losses for securities upon which an OTTI charge was previously recognized	26
Reductions	
Securities sold or matured during the period	(70)
Increases in cash flows expected to be collected (accreted as interest income over the remaining lives of the applicable securities)	(190)
Balance, at end of period	\$ 2,261

Note 5 - Advances

The FHLBanks offer a wide range of fixed- and variable-rate advance products with different maturities, interest rates, payment characteristics, and optionality. Fixed-rate advances generally have maturities ranging from one day to 30 years. Variable-rate advances generally have maturities ranging from less than 30 days to 20 years, where the interest rates reset periodically at a fixed spread to the London Interbank Offered Rate (LIBOR), the Secured Overnight Financing Rate (SOFR) or other specified indices, or to consolidated obligation yields.

Table 5.1 presents advances outstanding by redemption term and weighted-average interest rate at December 31, 2021 and 2020.

Table 5.1 - Advances by Redemption Term

(dollars in millions)

Redemption Term	December 31, 2021		December 31, 2020	
	Amount(1)	Weighted-Average Interest Rate	Amount(1)	Weighted-Average Interest Rate
Overdrawn demand and overnight deposit accounts	\$ —	—	\$ 3	1.25 %
Due in 1 year or less	145,099	0.62 %	182,211	0.73 %
Due after 1 year through 2 years	41,787	1.37 %	49,140	1.66 %
Due after 2 years through 3 years	40,987	1.22 %	45,678	1.54 %
Due after 3 years through 4 years	29,364	1.25 %	34,258	1.44 %
Due after 4 years through 5 years	26,868	1.31 %	30,369	1.36 %
Thereafter	65,278	1.50 %	73,987	1.55 %
Total principal amount	349,383	1.05 %	415,646	1.18 %
Commitment fees	—		(1)	
Discounts on AHP advances	(24)		(24)	
Premiums	85		47	
Discounts	(116)		(113)	
Hedging adjustments	1,829		6,851	
Fair value option valuation adjustments	121		233	
Total	\$ 351,278		\$ 422,639	

(1) Carrying amounts exclude accrued interest receivable of \$274 million and \$363 million as of December 31, 2021 and 2020.

The FHLBanks offer advances to members and housing associates that provide the right, based upon predetermined option exercise dates, to call the advance prior to maturity without incurring prepayment or termination fees (callable advances). The FHLBanks also offer certain floating-rate and/or amortizing advances that may be contractually prepaid by the borrower on specified dates without incurring prepayment or termination fees (prepayable advances). Other advances may only be prepaid by paying a fee to the FHLBank (prepayment fee) that makes the FHLBank financially indifferent to the prepayment of the advance.

Some advances contain embedded options allowing an FHLBank to offer puttable and convertible advances. A member can either sell an embedded option to an FHLBank or purchase an embedded option from an FHLBank. With a puttable advance to a member, an FHLBank effectively purchases a put option from the member that allows that FHLBank to put or extinguish the fixed-rate advance to the member on predetermined exercise dates. Generally, these put options are exercised when interest rates increase relative to contractual rates.

Convertible advances allow an FHLBank to convert an advance from one interest-payment term structure to another. Fixed-rate to variable-rate convertible advances have a defined lockout period after which they convert to the current market rate or another structure. A convertible advance generally carries a lower initial interest rate

than a comparable-maturity fixed-rate advance without the conversion feature. Variable- to fixed-rate convertible advances have a defined lockout period during which the interest rates adjust based on a spread to LIBOR, SOFR or other specified indices, or consolidated obligation yields. At the end of the lockout period, these advances may convert to fixed-rate advances. The fixed rates on the converted advances are determined at origination.

Table 5.2 presents advances by redemption term or next call date and next put or convert date at December 31, 2021 and 2020.

Table 5.2 - Advances by Redemption Term or Next Call Date and Next Put or Convert Date

(dollars in millions)

	Redemption Term or Next Call Date(1)		Redemption Term or Next Put or Convert Date	
	December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
Overdrawn demand and overnight deposit accounts	\$ —	\$ 3	\$ —	\$ 3
Due in 1 year or less	188,779	229,463	180,635	214,742
Due after 1 year through 2 years	32,593	44,081	42,535	54,231
Due after 2 years through 3 years	27,933	33,053	40,138	45,866
Due after 3 years through 4 years	22,944	23,868	28,769	33,118
Due after 4 years through 5 years	18,411	24,171	26,113	28,765
Thereafter	58,723	61,007	31,193	38,921
Total principal amount	\$ 349,383	\$ 415,646	\$ 349,383	\$ 415,646

(1) Also includes certain floating-rate and/or amortizing advances that may be contractually prepaid by the borrower on specified dates without incurring prepayment or termination fees.

Table 5.3 presents the redemption term for fixed-rate and variable-rate advances at December 31, 2021 and 2020.

Table 5.3 - Advances by Current Interest Rate Terms

(dollars in millions)

Redemption Term	December 31, 2021	December 31, 2020
Fixed-rate		
Due in one year or less	\$ 122,443	\$ 143,546
Due after one year	153,937	177,191
Total fixed-rate	276,380	320,737
Variable-rate		
Due in one year or less	22,657	38,668
Due after one year	50,346	56,241
Total variable-rate	73,003	94,909
Total principal amount	\$ 349,383	\$ 415,646

Credit Risk Exposure and Security Terms

The FHLBanks' advances are primarily made to member financial institutions, including commercial banks and insurance companies. Each FHLBank manages its credit exposure to advances through an integrated approach that includes establishing a credit limit for each borrower. This approach includes an ongoing review of each borrower's financial condition, in conjunction with the FHLBank's collateral and lending policies to limit risk of loss, while balancing borrowers' needs for a reliable source of funding.

In addition, each FHLBank lends to eligible borrowers in accordance with federal law and FHFA regulations. Specifically, each FHLBank is required to obtain sufficient collateral to fully secure credit products up to the counterparty's total credit limit. Collateral eligible to secure new or renewed advances includes:

- one-to-four family and multifamily mortgage loans (delinquent for no more than 90 days) and securities representing such mortgages;
- loans and securities issued, insured, or guaranteed by the U.S. government or any U.S. government agency (for example, mortgage-backed securities issued or guaranteed by Fannie Mae, Freddie Mac, or Ginnie Mae);
- cash or deposits in the FHLBank;
- certain other collateral that is real estate-related, such as commercial real estate loans, provided it meets certain eligibility requirements; and
- certain qualifying securities representing undivided equity interests in eligible advance collateral.

Residential mortgage loans are the principal form of collateral for advances. The estimated value of the collateral required to secure each member's credit products is calculated by applying collateral discounts, or haircuts, to the market value or unpaid principal balance of the collateral, as applicable. In addition, community financial institutions are eligible to use expanded statutory collateral provisions for small business, agriculture loans, and community development loans. The FHLBank capital stock owned by each borrower is also pledged as collateral. Collateral arrangements may vary depending upon borrower credit quality, financial condition, and performance; borrowing capacity; and overall credit exposure to the borrower. Each FHLBank can also require additional or substitute collateral to protect its security interest. The FHLBanks also have policies and procedures for validating the reasonableness of their collateral valuations. In addition, collateral verifications and on-site reviews are performed by the FHLBanks based on the risk profile of the borrower. Management of each FHLBank believes that these policies effectively manage that FHLBank's respective credit risk from advances.

An FHLBank either allows a borrower to retain physical possession of the collateral assigned to it, or requires the borrower to specifically assign or place physical possession of the collateral with the FHLBank or its safekeeping agent. Each FHLBank perfects its security interest in all pledged collateral. The FHLBank Act provides that, notwithstanding any other provision of law, any security interest granted to an FHLBank by any member of any FHLBank, or any affiliate of any member, is entitled to a priority over the claims and rights of any party (including any receiver, conservator, trustee, or similar lien creditor), other than claims and rights that (1) would be entitled to priority under otherwise applicable law, and (2) are held by actual bona fide purchasers for value or by actual secured parties that are secured by actual perfected security interests. Moreover, with respect to federally-insured depository institution borrowers, pursuant to its regulations, the Federal Deposit Insurance Corporation (FDIC) has recognized the priority of an FHLBank's security interest under the FHLBank Act and the right of an FHLBank to require delivery of collateral held by the FDIC, as receiver, for a failed depository institution. Each FHLBank takes steps necessary to help ensure that its security interest in all collateral pledged by non-depository institutions, such as insurance companies and housing associates, is perfected and protected to the same extent as its security interest in the collateral pledged by depository institutions.

Using a risk-based approach and taking into consideration each borrower's financial strength, the FHLBanks consider the types and level of collateral to be the primary indicator of credit quality on their advances. At December 31, 2021 and 2020, each FHLBank had rights to collateral on a borrower-by-borrower basis with an estimated value equal to, or greater than, its outstanding advances.

Each FHLBank continues to evaluate and make changes to its collateral guidelines, as necessary, based on current market conditions. At December 31, 2021 and 2020, none of the FHLBanks had any advances that were considered past due for financial reporting purposes, on nonaccrual status, or considered impaired. In addition, there were no TDRs related to advances at any FHLBank during the years ended December 31, 2021 and 2020, and based on the collateral held as security, each FHLBank management's credit extension and collateral policies, and repayment history on advances, no allowance for credit losses on advances was recorded at December 31, 2021 and 2020.

In December 2020, the FHLBank of Des Moines declared a member in default under the member's contractual terms and demanded all of its outstanding advances to be repaid in full. As of March 31, 2021, all outstanding advances to this member were considered past due based on the member's interest payments being in default for 30 days or more. During the second quarter of 2021, all outstanding advances to this member were repaid in full.

Note 6 - Mortgage Loans

Mortgage Loans Held for Portfolio

Mortgage loans held for portfolio primarily consist of loans obtained through the MPP and MPF Program and are either conventional mortgage loans or government-guaranteed or -insured mortgage loans. In addition, the FHLBank of New York implemented the Mortgage Asset Program (MAP®) in order to replace its participation in the MPF Program beginning in March 2021. Under these mortgage programs, the FHLBanks purchase single-family mortgage loans that are originated or acquired by participating financial institutions. These mortgage loans are credit-enhanced by participating financial institutions or are guaranteed or insured by Federal agencies.

Table 6.1 presents the composition of mortgage loans held for portfolio, net of the allowance for credit losses at December 31, 2021 and 2020.

Table 6.1 - Mortgage Loans Held for Portfolio

(dollars in millions)

	December 31,	
	2021	2020
Fixed-rate, long-term single-family mortgage loans	\$ 47,897	\$ 55,095
Fixed-rate, medium-term(1) single-family mortgage loans	6,616	6,614
Total unpaid principal balance	54,513	61,709
Premiums	995	1,107
Discounts	(17)	(23)
Hedging adjustments	29	82
Total mortgage loans held for portfolio(2)	55,520	62,875
Allowance for credit losses on mortgage loans	(23)	(33)
Mortgage loans held for portfolio, net	\$ 55,497	\$ 62,842

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

(2) Excludes accrued interest receivable of \$237 million and \$283 million at December 31, 2021 and 2020.

Table 6.2 presents mortgage loans held for portfolio by collateral/guarantee type at December 31, 2021 and 2020.

Table 6.2 - Mortgage Loans Held for Portfolio by Collateral/Guarantee Type

(dollars in millions)

	December 31,	
	2021	2020
Conventional mortgage loans	\$ 52,042	\$ 58,766
Government-guaranteed or -insured mortgage loans	2,471	2,943
Total unpaid principal balance	\$ 54,513	\$ 61,709

Credit Enhancements. An FHLBank's allowance for credit losses considers the credit enhancements associated with conventional mortgage loans under the MPF Program, MPP, and MAP. Credit enhancements may include primary mortgage insurance, supplemental mortgage insurance, the credit enhancement amount plus any recoverable performance-based credit enhancement fees (for certain MPF loans), Lender Risk Account (for MPP loans), and Member Performance Account (for MAP loans). The credit risk analysis of all conventional loans is performed at the individual master commitment level to determine the credit enhancements available to recover losses on loans under each individual master commitment.

MPF Program. Participating financial institutions are paid a credit enhancement fee for assuming credit risk, and in some instances all or a portion of the credit enhancement fee may be performance-based. An FHLBank records credit enhancement fees paid to the participating financial institutions as a reduction to mortgage interest income. A participating financial institution may obtain supplemental mortgage insurance that it intends to use to cover a portion of its credit loss obligation under a master commitment.

Conventional MPF loans are evaluated for credit enhancement by use of third-party models. Each FHLBank participating in the MPF program (MPF FHLBank) and its participating financial institution share the risk of credit losses on conventional MPF loan products held for portfolio, by structuring potential losses into layers with respect to each master commitment. Credit losses in a master commitment are first absorbed by an FHLBank, up to a specified amount referred to as the First Loss Account. For each master commitment, the FHLBank may withhold a participating financial institution's scheduled performance credit enhancement fee in order to reimburse the FHLBank for a portion of credit losses allocated to the First Loss Account.

The First Loss Account represents the first layer or portion of credit losses that each MPF FHLBank absorbs with respect to its MPF loans after considering the borrower's equity, primary mortgage insurance, and recoverable credit enhancement fees. The participating financial institution is required to cover the next layer of losses up to an agreed-upon credit enhancement obligation amount, which may consist of a direct liability of the participating financial institution to pay credit losses up to a specified amount, a contractual obligation of a participating financial institution to provide supplemental mortgage insurance, or a combination of both. Any remaining unallocated losses are absorbed by the MPF FHLBank.

Unlike conventional MPF products held for portfolio, under the MPF Xtra, MPF Direct, MPF Government, and MPF Government MBS products, participating financial institutions are not required to provide credit enhancement and do not receive credit enhancement fees. Loans sold to the FHLBank of Chicago under the MPF Xtra and MPF Direct products are concurrently sold to third-party investors, and are not recorded on the MPF FHLBank's statement of condition.

MPP and MAP Loans. The conventional mortgage loans under the MPP are supported by a Lender Risk Account, and may also be supported by primary or supplemental mortgage insurance, in addition to the associated property as collateral. The Lender Risk Account is funded by an FHLBank participating in the MPP (MPP FHLBank) either upfront as a portion of the purchase proceeds or through a portion of the net interest remitted monthly by the borrower in an amount sufficient to cover expected losses on the pool of mortgages. The Lender Risk Account is recorded in other liabilities on the Combined Statement of Condition. To the extent available, Lender Risk Account funds are used to offset any losses that occur. Typically after five years, excess funds over required balances are returned to the participating financial institution in accordance with a step-down schedule that is established upon execution of a master commitment contract. The Lender Risk Account is released in accordance with the terms of the master commitment. Similar to the MPP's Lender Risk Account, the FHLBank of New York maintains a Member Performance Account as credit enhancement for MAP loans. At December 31, 2021 and 2020, the amount of the credit enhancements in the Lender Risk and Member Performance accounts remaining to cover future potential losses totaled \$488 million and \$455 million.

Relief to Borrowers During the COVID-19 Pandemic. The FHLBanks elected to apply Section 4013 of the CARES Act to the FHLBanks' loan modifications that qualify under the CARES Act. As a result, the FHLBanks have elected to suspend TDR accounting for eligible modifications under Section 4013 of the CARES Act. At December 31, 2021 and 2020, the FHLBanks had \$239 million and \$22 million of these modifications outstanding, of which \$22 million and \$12 million were on non-accrual status.

The FHLBanks' servicers granted a forbearance period to eligible borrowers who had requested forbearance based on COVID-19 related difficulties regardless of the status of the loan at the time of the request. There were \$250 million and \$1,017 million in unpaid principal balance (UPB) of conventional mortgage loans in forbearance due to the COVID-19 pandemic that were not TDRs at December 31, 2021 and 2020, which represented less than 1% and 2% of the FHLBanks' mortgage loans held for portfolio. (See [Note 1 - Summary of Significant Accounting Policies](#) for additional information on the CARES Act.)

Payment Status of Mortgage Loans. Payment status is the key credit quality indicator for conventional mortgage loans and allows the FHLBanks to monitor borrower performance. A past due loan is one where the borrower has failed to make a full payment of principal and interest within 30 days of its due date. Other delinquency statistics include, non-accrual loans and loans in process of foreclosure. Tables 6.3 and 6.4 present the payment status for conventional mortgage loans and other delinquency statistics for all of the FHLBanks' mortgage loans at December 31, 2021 and 2020.

Table 6.3 - Credit Quality Indicator for Conventional Mortgage Loans

(dollars in millions)

Payment Status at Amortized Cost(1)(2)	December 31, 2021		
	Conventional Mortgage Loans		
	Origination Year		
	Prior to 2017	2017 to 2021	Total
Past due 30-59 days	\$ 120	\$ 159	\$ 279
Past due 60-89 days	33	34	67
Past due 90 days or more	141	182	323
Total past due mortgage loans	294	375	669
Total current mortgage loans	13,109	39,232	52,341
Total conventional mortgage loans	\$ 13,403	\$ 39,607	\$ 53,010

Payment Status at Amortized Cost(1)(2)	December 31, 2020		
	Conventional Mortgage Loans		
	Origination Year		
	Prior to 2016	2016 to 2020	Total
Past due 30-59 days	\$ 139	\$ 248	\$ 387
Past due 60-89 days	59	104	163
Past due 90 days or more	245	683	928
Total past due mortgage loans	443	1,035	1,478
Total current mortgage loans	13,576	44,833	58,409
Total conventional mortgage loans	\$ 14,019	\$ 45,868	\$ 59,887

(1) Amortized cost excludes accrued interest receivable.

(2) At December 31, 2021 and 2020, there were \$250 million and \$1,017 million in UPB of conventional mortgage loans in forbearance as a result of the COVID-19 pandemic, of which \$77 million and \$188 million had a current payment status, \$17 million and \$71 million were 30 to 59 days past due, \$15 million and \$83 million were 60 to 89 days past due, and \$141 million and \$675 million were 90 days or more past due.

Table 6.4 - Other Delinquency Statistics*(dollars in millions)*

Amortized Cost	December 31, 2021		
	Conventional Mortgage Loans	Government-Guaranteed or -Insured	Total
In process of foreclosure(1)	\$ 37	\$ 12	\$ 49
Serious delinquency rate(2)	0.63 %	2.51 %	0.71 %
Past due 90 days or more and still accruing interest	\$ 68	\$ 63	\$ 131
Loans on non-accrual status(3)	\$ 353	\$ —	\$ 353

Amortized Cost	December 31, 2020		
	Conventional Mortgage Loans	Government-Guaranteed or -Insured	Total
In process of foreclosure(1)	\$ 67	\$ 20	\$ 87
Serious delinquency rate(2)	1.57 %	4.25 %	1.70 %
Past due 90 days or more and still accruing interest	\$ 144	\$ 94	\$ 238
Loans on non-accrual status(3)	\$ 874	\$ 10	\$ 884

- (1) Includes loans where the decision of foreclosure or a similar alternative, such as pursuit of deed-in-lieu, has been reported. There were foreclosure moratoriums enacted in many areas during 2020 that expired on July 31, 2021, but an eviction moratorium was extended by the FHFA to September 30, 2021.
- (2) Represents seriously delinquent loans as a percentage of total mortgage loans. Seriously delinquent loans are comprised of all loans past due 90 days or more and loans that are in the process of foreclosure.
- (3) At December 31, 2021 and 2020, \$199 million and \$370 million of conventional mortgage loans on non-accrual status did not have a related allowance for credit losses because these loans were either previously charged-off to the expected recoverable value or the fair value of the underlying collateral, including any credit enhancements, is greater than the amortized cost of the loans; and \$108 million and \$587 million in UPB of these conventional mortgage loans were in forbearance due to the COVID-19 pandemic.

Allowance for Credit Losses for Mortgage Loans

Conventional Mortgage Loans. Loans are evaluated collectively when similar risk characteristics exists; loans that do not share risk characteristics with other pools are evaluated for expected credit losses on an individual basis. Each FHLBank determines its allowance for credit losses on conventional loans through analyses that include consideration of various loan portfolio and collateral-related characteristics, such as past performance, current conditions, and reasonable and supportable forecasts of expected economic conditions. The FHLBanks use models that employ a variety of methods, such as projected cash flows, to estimate expected credit losses over the life of the loans. These models rely on a number of inputs, such as both current and forecasted property values and interest rates as well as historical borrower behavior experience. At December 31, 2021 and 2020, the range of short-term forecasts for housing prices used by the FHLBanks varied, but the FHLBanks were generally using forecasts for 1 to 5 years before transitioning to historical trends. Each FHLBank also incorporates associated credit enhancements, if any, to determine its estimate of expected credit losses.

Certain conventional loans may be evaluated for credit losses by an FHLBank using the practical expedient for collateral dependent assets. A mortgage loan is considered collateral dependent when the borrower is experiencing financial difficulty and repayment is expected to be substantially through the sale of the underlying collateral. An FHLBank may estimate the fair value of this collateral by applying an appropriate loss severity rate or using third party estimates or property valuation model(s). The expected credit loss of a collateral dependent mortgage loan is equal to the difference between the amortized cost of the loan and the estimated fair value of the collateral, less estimated selling costs. The FHLBanks will either reserve for these estimated losses or record a direct charge-off of the loan balance, if certain triggering criteria are met. Expected recoveries of prior charge-offs, if any, are included in the allowance for credit losses.

Each FHLBank established an allowance for credit losses on its conventional mortgage loans held for portfolio. Table 6.5 presents a rollforward of the allowance for credit losses on conventional mortgage loans for the years ended December 31, 2021, 2020, and 2019.

Table 6.5 - Allowance for Credit Losses on Conventional Mortgage Loans*(dollars in millions)*

	Year Ended December 31,		
	2021	2020	2019(1)
Balance, at beginning of period	\$ 33	\$ 16	\$ 15
Adjustment for cumulative effect of accounting change	—	11	—
(Charge-offs), net of recoveries	1	(8)	(1)
Provision (reversal) for credit losses	(11)	14	2
Balance, at end of period	\$ 23	\$ 33	\$ 16

(1) Prior to the adoption of the CECL accounting guidance, the FHLBanks' allowance for credit losses on mortgage loans consisted of an estimate of incurred losses from individually evaluated mortgage loans, including collateral dependent mortgage loans; collectively evaluated mortgage loans; and may have included estimating additional credit losses on mortgage loans.

Government-Guaranteed or -Insured Mortgage Loans. An FHLBank may invest in fixed-rate mortgage loans that are insured or guaranteed by the Federal Housing Administration, the Department of Veterans Affairs, the Rural Housing Service of the Department of Agriculture, and/or the Department of Housing and Urban Development. The servicer provides and maintains insurance or a guarantee from the applicable government agency. The servicer is responsible for compliance with all government agency requirements and for obtaining the benefit of the applicable guarantee or insurance with respect to defaulted government-guaranteed or -insured mortgage loans. Any losses incurred on these loans that are not recovered from the issuer or the guarantor are absorbed by the servicer. Therefore, each FHLBank only has credit risk for these loans if the servicer fails to pay for losses not covered by the guarantee or insurance, but in such instance, the FHLBank would have recourse against the servicer for such failure. Based on each FHLBank's assessment of its servicers and the collateral backing the loans, the risk of loss was immaterial and, consequently, no FHLBank recorded an allowance for credit losses for government-guaranteed or -insured mortgage loans at December 31, 2021 and 2020.

Troubled Debt Restructurings. Excluding loans subject to forbearance under the CARES Act, a TDR is considered to have occurred when a concession is granted to a borrower for economic or legal reasons related to the borrower's financial difficulties and that concession would not have been considered otherwise. An FHLBank has granted a concession when it does not expect to collect all amounts due to the FHLBank under the original contract as a result of the restructuring. Loans that are discharged in Chapter 7 bankruptcy and have not been reaffirmed by the borrowers are also considered to be TDRs, except in certain cases where supplemental mortgage insurance policies are held or where all contractual amounts due are still expected to be collected as a result of certain credit enhancements or government guarantees.

A conventional mortgage loan considered to be a TDR is individually evaluated for impairment when determining its related allowance for credit losses. At December 31, 2021 and 2020, the amortized cost of mortgage loans classified as TDRs was \$93 million and \$95 million.

Note 7 - Derivatives and Hedging Activities**Nature of Business Activity**

The FHLBanks are exposed to interest-rate risk primarily from the effect of interest rate changes on their interest-earning assets and their interest-bearing liabilities that finance these assets. The goal of each FHLBank's interest-rate risk management strategy is not to eliminate interest-rate risk, but to manage it within appropriate limits. To mitigate the risk of loss, each FHLBank has established policies and procedures, which include guidelines on the amount of exposure to interest rate changes it is willing to accept. In addition, each FHLBank monitors the risk to its interest income, net interest margin, and average maturity of interest-earning assets and interest-bearing liabilities.

Consistent with FHFA regulation, an FHLBank enters into derivatives: (1) to manage the interest-rate risk exposures inherent in its otherwise unhedged assets and funding positions, (2) to achieve the FHLBank's risk management objectives, and (3) to act as an intermediary between its members and counterparties. FHFA regulation and each FHLBank's risk management policy prohibit the speculative use of these derivative instruments and limit credit risk arising from these instruments. The use of derivatives is an integral part of each FHLBank's financial and risk management strategy.

Each FHLBank reevaluates its hedging strategies periodically and may change the hedging techniques it uses or may adopt new strategies. The most common ways in which an FHLBank uses derivatives are to:

- reduce the interest-rate sensitivity and repricing gaps of assets and liabilities;
- preserve a favorable interest-rate spread between the yield of an asset (e.g., an advance) and the cost of the related liability (e.g., the consolidated obligation used to fund the advance);
- mitigate the adverse earnings effects of the shortening or extension of certain assets (e.g., advances or mortgage assets) and liabilities;
- manage embedded options in assets and liabilities;
- reduce funding costs by combining a derivative with a consolidated obligation because the cost of a combined funding structure can be lower than the cost of a comparable consolidated obligation; and
- protect the value of existing asset or liability positions or of anticipated transactions.

Application of Derivatives

Each FHLBank documents at inception all relationships between derivatives designated as hedging instruments and hedged items, its risk management objectives and strategies for undertaking various hedge transactions, and its method of assessing effectiveness for all derivatives qualifying for hedge accounting. This process includes linking all derivatives that are designated as fair value or cash flow hedges to: (1) assets and liabilities on the statement of condition, (2) firm commitments, or (3) forecasted transactions.

Derivative instruments are designated by the FHLBanks as:

- A qualifying fair value or cash flow hedge of an associated financial instrument, a firm commitment, or an anticipated transaction.
- A non-qualifying economic hedge to manage certain defined risks on the statement of condition. These hedges are primarily used to: (1) manage mismatches between the coupon features of assets and liabilities, (2) offset prepayment risks in certain assets, (3) mitigate the income statement volatility that occurs when financial instruments are recorded at fair value and hedge accounting is not permitted, or (4) to reduce exposure reset risk.
- A non-qualifying intermediary hedge to meet the asset or liability management needs of its members. An FHLBank acts as an intermediary by entering into derivatives with its members and offsetting derivatives with other counterparties. This intermediation grants smaller members indirect access to the derivatives market. The derivatives used in intermediary activities do not receive hedge accounting treatment and are separately marked-to-market through earnings. The net result of the accounting for these derivatives does not significantly affect the operating results of the FHLBanks.

Each FHLBank transacts most of its derivatives with large banks and major broker-dealers. Some of these banks and broker-dealers, or their affiliates, buy, sell, and distribute consolidated obligations. Derivative transactions may be either executed with a counterparty, referred to as uncleared derivatives, or cleared through a Futures Commission Merchant (i.e., clearing agent) with a Derivative Clearing Organization, referred to as cleared derivatives. Once a derivative transaction has been accepted for clearing by a Derivative Clearing Organization (Clearinghouse) the executing counterparty is replaced with the Clearinghouse. The FHLBanks are not derivative dealers and do not trade derivatives for short-term profit.

Types of Derivatives

The FHLBanks primarily use the following derivative instruments:

Interest-Rate Swaps. An interest-rate swap is an agreement between two entities to exchange cash flows in the future. The agreement sets the dates on which the cash flows will be exchanged and the manner in which the cash flows will be calculated. One of the simplest forms of an interest-rate swap involves the promise by one party to pay cash flows equivalent to the interest on a notional amount at a predetermined fixed rate for a given period of time. In return for this promise, this party receives cash flows equivalent to the interest on the same notional amount at a variable-rate index for the same period of time. The variable rate received or paid by the FHLBanks in most derivative transactions is based on SOFR, LIBOR, or the overnight indexed swap rate.

Options. An option is an agreement between two entities that conveys the right, but not the obligation, to engage in a future transaction on some underlying security or other financial asset at an agreed-upon price during a certain period of time or on a specific date. Premiums paid to acquire options are considered the fair value of the derivative at inception of the hedge and are reported in derivative assets.

Swaptions. A swaption is an option on a swap that gives the buyer the right to enter into a specified interest-rate swap at a certain time in the future. When used as a hedge, a swaption can protect an FHLBank that is planning to lend or borrow funds in the future against future interest rate changes. The FHLBanks may enter into both payer swaptions and receiver swaptions. A payer swaption is the option to make fixed interest payments at a later date and a receiver swaption is the option to receive fixed interest payments at a later date.

Interest-Rate Cap and Floor Agreements. In an interest-rate cap agreement, a cash flow is generated if the price or rate of an underlying variable rises above a certain threshold (or cap) price. In an interest-rate floor agreement, a cash flow is generated if the price or rate of an underlying variable falls below a certain threshold (or floor) price. Interest-rate caps and floors are designed as protection against the interest rate on a variable-rate asset or liability falling below or rising above a certain level.

Futures and Forwards Contracts. Futures and forwards contracts gives the buyer the right to buy or sell a specific type of asset at a specific time at a given price. For example, certain mortgage delivery commitments entered into by an FHLBank are considered derivatives. An FHLBank may hedge these commitments by selling to-be-announced (TBA) mortgage-backed securities for forward settlement. A TBA represents a forward contract for the sale of mortgage-backed securities at a future agreed upon date for an established price.

Types of Hedged Items

An FHLBank may have the following types of hedged items:

Investments. The FHLBanks classify investment securities as HTM, AFS, or trading securities. The interest-rate and prepayment risks associated with these investment securities are managed through a combination of debt issuance and derivatives. An FHLBank may manage the prepayment and interest-rate risk by funding investment securities with consolidated obligations that have call features or by hedging the prepayment risk with caps or floors, callable swaps, or swaptions. An FHLBank may manage prepayment and duration risk by funding

investment securities with consolidated obligations that contain call features. An FHLBank may also manage the risk arising from changing market prices and volatility of investment securities by entering into economic derivatives that generally offset the changes in fair value of the securities. Derivatives held by an FHLBank that are associated with trading and HTM securities are designated as economic hedges and derivatives held by an FHLBank associated with available-for-sale securities may qualify as either a fair value hedge or a cash flow hedge, or may be designated as an economic hedge.

Advances. The FHLBanks offer a wide range of fixed- and variable-rate advance products with different maturities, interest rates, payment characteristics, and optionality. An FHLBank may use derivatives to manage the repricing and/or option characteristics of advances in order to more closely match the characteristics of that FHLBank's funding liabilities. In general, whenever a member executes a fixed-rate advance or a variable-rate advance with embedded options, the FHLBank may simultaneously execute a derivative with terms that offset the terms and embedded options, in the advance. For example, an FHLBank may hedge a fixed-rate advance with an interest-rate swap where the FHLBank pays a fixed-rate and receives a variable-rate, effectively converting the fixed-rate advance to a variable-rate advance. This type of hedge is typically treated as a fair value hedge. In addition, an FHLBank may hedge a callable, prepayable, convertible or puttable advance by entering into a cancelable interest-rate swap.

Mortgage Loans. The FHLBanks invest in fixed-rate mortgage loans. The prepayment options embedded in mortgage loans can result in extensions or contractions in the expected repayment of these investments, depending on changes in actual and estimated prepayment speeds. The FHLBanks manage the interest-rate and prepayment risks associated with mortgage loans through a combination of debt issuance and derivatives. The FHLBanks issue both callable and non-callable debt and prepayment-linked consolidated obligations to achieve cash flow patterns and liability durations similar to those expected on the mortgage loans. Interest-rate swaps, to the extent the payments on the mortgage loans result in a simultaneous reduction of the notional amount on the swaps, may receive fair value hedge accounting.

A combination of swaps and options, including futures, may be used as a portfolio of derivatives linked to a portfolio of mortgage loans. The portfolio of mortgage loans consists of one or more pools of similar assets, as determined by factors such as product type and coupon. As the portfolio of loans changes due to new loans, liquidations, and payments, the derivative portfolio is modified accordingly to hedge the interest-rate and prepayment risks effectively. A new hedging relationship is created and is treated as a fair value hedge.

The FHLBanks may also enter into interest-rate caps and floors, swaptions, callable swaps, and calls and puts to minimize the prepayment risk embedded in the mortgage loans. These type of hedges are treated as economic hedges as they are not identified to specific mortgage loans and are marked-to-market through earnings.

Consolidated Obligations. An FHLBank may enter into derivatives to hedge the interest-rate risk associated with its debt issuances. An FHLBank manages the risk arising from changing market prices and volatility of a consolidated obligation by matching the cash inflow on the derivative with the cash outflow on the consolidated obligation.

For example, an FHLBank may issue a fixed-rate consolidated obligation and simultaneously enter into a matching derivative in which the FHLBank receives a fixed cash flow designed to match in timing and amount the cash outflows the FHLBank pays on the consolidated obligation and the FHLBank pays a variable cash flow that closely matches the interest payments it receives on short-term or variable-rate advances. These transactions are typically treated as fair value hedges. The FHLBanks may issue variable-rate consolidated obligations indexed to specified indices, such as SOFR, and simultaneously execute interest-rate swaps to hedge the basis risk of the variable-rate debt. This type of hedge is treated as an economic hedge and is marked-to-market through earnings.

This strategy of issuing consolidated obligations while simultaneously entering into derivatives enables an FHLBank to offer a wider range of attractively-priced advances to its members and may allow an FHLBank to reduce its funding costs and manage its interest-rate risk. The continued attractiveness of this strategy depends on yield relationships between the FHLBanks' consolidated obligations and the derivatives markets. If conditions change, an FHLBank may alter the types or terms of the consolidated obligations that it issues.

Anticipated Streams of Future Cash Flows. An FHLBank may enter into an option to hedge a specified future variable cash stream as a result of rolling over short-term, fixed-rate financial instruments, such as SOFR advances and consolidated discount notes. The option will effectively cap the variable cash stream at a predetermined target rate.

Firm Commitments. Certain mortgage loan purchase commitments are considered derivatives. An FHLBank normally hedges these commitments by selling TBA mortgage-backed securities or other derivatives for forward settlement. The mortgage loan purchase commitment and the TBA used in the firm commitment hedging strategy are treated as an economic hedge and are marked-to-market through earnings. When the mortgage loan purchase commitment derivative settles, the current market value of the commitment is included with the basis of the mortgage loan and amortized accordingly.

Additionally, an FHLBank may enter into a commitment to issue consolidated obligations beyond the timeframe of normal market settlement conventions. These commitments are considered derivatives and treated as economic hedges, with changes in the fair value of the derivative marked-to-market through earnings. When the consolidated obligation issuance commitment derivative settles, the current market value of the commitment is included with the basis of the consolidated obligation and amortized accordingly.

An FHLBank may also hedge a firm commitment for a forward-starting advance through the use of an interest-rate swap. In this case, the interest-rate swap functions as the hedging instrument for both the firm commitment and the subsequent advance and is treated as a fair value hedge. If the hedge relationship is de-designated when the commitment is terminated and the advance is issued, the fair value change associated with the firm commitment is recorded as a basis adjustment of the advance and amortized accordingly. In addition, if a hedged firm commitment no longer qualifies as a fair value hedge, the hedge would be terminated and net gains and losses would be recognized in current period earnings. There were no material amounts of gains and losses recognized due to disqualification of firm commitment hedges during the years ended December 31, 2021, 2020, and 2019.

Anticipated Debt Issuance. Certain FHLBanks use derivatives to lock in the cost of funding prior to an anticipated debt issuance and designate them as cash flow hedges. The derivative is terminated upon issuance of the debt instrument.

Variable Cash Streams. Certain FHLBanks use derivatives to hedge the variability of cash flows over a specified period of time as a result of the issuances and maturities of short-term, fixed-rate instruments, such as discount notes, and designate them as cash flow hedges. The maturity dates of the cash flow streams are matched to the maturity dates of the derivatives. If the hedge relationships are terminated prior to their maturity dates by an FHLBank, that FHLBank continues to carry the derivative on the statement of condition at its fair value and reclassifies the cumulative other comprehensive income adjustment into earnings when earnings are affected by the existing hedged item (i.e., the original forecasted transaction).

Financial Statement Effect and Additional Financial Information

Derivative Notional Amounts. The notional amount of derivatives serves as a factor in determining periodic interest payments or cash flows received and paid. However, the notional amount of derivatives reflects the FHLBanks' involvement in the various classes of financial instruments and represents neither the actual amounts exchanged nor the overall exposure of the FHLBanks to credit and market risk; the overall risk is much smaller. The risks of derivatives can be measured meaningfully on a portfolio basis that takes into account the counterparties,

the types of derivatives, the items being hedged, and any offsets between the derivatives and the items being hedged.

Table 7.1 presents the notional amount, fair value of derivative instruments, and total derivative assets and liabilities at December 31, 2021 and 2020. Total derivative assets and liabilities include the effect of netting adjustments and cash collateral. For purposes of this disclosure, the derivative values include the fair value of derivatives and the related accrued interest.

Table 7.1 - Fair Value of Derivative Instruments

(dollars in millions)

	December 31, 2021			December 31, 2020		
	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities	Notional Amount of Derivatives	Derivative Assets	Derivative Liabilities
Derivatives designated as hedging instruments						
Interest-rate swaps	\$ 464,621	\$ 956	\$ 3,549	\$ 330,785	\$ 646	\$ 4,440
Derivatives not designated as hedging instruments						
Interest-rate swaps	114,741	57	199	148,925	139	400
Interest-rate swaptions	1,819	10	—	3,455	8	—
Interest-rate caps or floors	7,538	5	1	11,346	4	1
Interest-rate futures or forwards	213	—	—	350	—	3
Mortgage delivery commitments	1,228	2	3	3,581	10	7
Other	203	—	—	256	—	1
Total derivatives not designated as hedging instruments	125,742	74	203	167,913	161	412
Total derivatives before netting and collateral adjustments	\$ 590,363	1,030	3,752	\$ 498,698	807	4,852
Netting adjustments and cash collateral(1)		1,085	(3,575)		810	(3,978)
Total derivative assets and total derivative liabilities		\$ 2,115	\$ 177		\$ 1,617	\$ 874

(1) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, and also cash collateral, including accrued interest, held or placed by that FHLBank with the same clearing agent and/or counterparty. Cash collateral posted, including accrued interest, was \$4,518 million and \$4,502 million at December 31, 2021 and 2020. Cash collateral received, including accrued interest, was \$492 million and \$623 million at December 31, 2021 and 2020.

Table 7.2 presents the net gains (losses) on qualifying and discontinued fair value and cash flow hedging relationships for the years ended December 31, 2021, 2020, and 2019.

Table 7.2 - Net Gains (Losses) on Fair Value and Cash Flow Hedging Relationships

(dollars in millions)

	Year Ended December 31, 2021				
	Interest Income/Expense				Other Comprehensive Income
	Advances	Available-for-Sale Securities	Consolidated Discount Notes	Consolidated Bonds	
Total interest income (expense) presented on the Combined Statement of Income	\$ 2,634	\$ 1,073	\$ (226)	\$ (2,473)	
Gains (losses) on fair value hedging relationships					
Interest rate contracts					
Derivatives(1)	\$ 2,857	\$ 2,039	\$ —	\$ (1,374)	
Hedged items(2)	(4,899)	(3,329)	1	2,514	
Net gains (losses) on fair value hedging relationships	\$ (2,042)	\$ (1,290)	\$ 1	\$ 1,140	
Gains (losses) on cash flow hedging relationships(3)					
Interest rate contracts					
Reclassified from AOCI into interest income (expense)	\$ —	\$ —	\$ (39)	\$ (8)	
Recognized in OCI					\$ 173

	Year Ended December 31, 2020				Other Comprehensive Income
	Interest Income/Expense				
	Advances	Available-for-Sale Securities	Consolidated Discount Notes	Consolidated Bonds	
Total interest income (expense) presented on the Combined Statement of Income	<u>\$ 6,654</u>	<u>\$ 1,440</u>	<u>\$ (2,535)</u>	<u>\$ (5,748)</u>	
Gains (losses) on fair value hedging relationships					
Interest rate contracts					
Derivatives(1)	\$ (6,478)	\$ (4,828)	\$ 73	\$ 1,260	
Hedged items(2)	4,456	3,741	(1)	(553)	
Net gains (losses) on fair value hedging relationships	<u>\$ (2,022)</u>	<u>\$ (1,087)</u>	<u>\$ 72</u>	<u>\$ 707</u>	
Gains (losses) on cash flow hedging relationships(3)					
Interest rate contracts					
Reclassified from AOCI into interest income (expense)	\$ —	\$ —	\$ (35)	\$ (10)	
Recognized in OCI					\$ (259)
	Year Ended December 31, 2019				Other Comprehensive Income
	Interest Income/Expense				
	Advances	Available-for-Sale Securities	Consolidated Discount Notes	Consolidated Bonds	
Total interest income (expense) presented on the Combined Statement of Income	<u>\$ 16,856</u>	<u>\$ 2,752</u>	<u>\$ (9,028)</u>	<u>\$ (14,319)</u>	
Gains (losses) on fair value hedging relationships					
Interest rate contracts					
Derivatives(1)	\$ (2,669)	\$ (2,573)	\$ —	\$ 1,190	
Hedged items(2)	3,187	2,497	—	(1,617)	
Net gains (losses) on fair value hedging relationships	<u>\$ 518</u>	<u>\$ (76)</u>	<u>\$ —</u>	<u>\$ (427)</u>	
Gains (losses) on cash flow hedging relationships(3)					
Interest rate contracts					
Reclassified from AOCI into interest income (expense)	\$ —	\$ —	\$ (23)	\$ (8)	
Recognized in OCI					\$ (205)

(1) Includes changes in fair value and net interest settlements and excludes the interest income (expense) of the respective hedged item.

(2) Includes changes in fair value and amortization and accretion of basis adjustments.

(3) Includes changes in fair value, net interest settlements, and amortization and accretion of hedging activities into interest income. Excludes the interest income (expense) of the respective hedged item.

For the years ended December 31, 2021, 2020, and 2019, no material amounts were reclassified from AOCI into earnings as a result of discontinued cash flow hedges because the original forecasted transactions occurred by the end of the originally specified time period or within a two-month period thereafter. At December 31, 2021, \$24 million of deferred net losses on derivative instruments in AOCI is expected to be reclassified to earnings during the next twelve months. At December 31, 2021, the maximum length of time over which an FHLBank is hedging its exposure to the variability in future cash flows for forecasted transactions is eleven years, excluding those forecasted transactions related to the payment of variable interest on existing financial instruments.

Table 7.3 presents the cumulative basis adjustments on hedged items designated in fair value hedging relationships and the related amortized cost of the hedged items at December 31, 2021 and 2020.

Table 7.3 - Cumulative Basis Adjustments for Fair Value Hedges

(dollars in millions)

	December 31, 2021				
	Advances	Available-for-Sale Securities	Mortgage Loans	Consolidated Discount Notes	Consolidated Bonds
Amortized cost of hedged asset or liability(1)	\$ 163,515	\$ 84,412	\$ 265	\$ 3,325	\$ 216,851
Fair value hedging adjustments					
Basis adjustments for active hedging relationships included in amortized cost	\$ 1,586	\$ 668	\$ —	\$ —	\$ (1,315)
Basis adjustments for discontinued hedging relationships included in amortized cost	231	1,715	6	—	136
Total amount of fair value hedging basis adjustments	\$ 1,817	\$ 2,383	\$ 6	\$ —	\$ (1,179)

	December 31, 2020				
	Advances	Available-for-Sale Securities	Mortgage Loans	Consolidated Discount Notes	Consolidated Bonds
Amortized cost of hedged asset or liability(1)	\$ 185,806	\$ 72,712	\$ 354	\$ 9,030	\$ 80,994
Fair value hedging adjustments					
Basis adjustments for active hedging relationships included in amortized cost	\$ 6,710	\$ 4,701	\$ —	\$ —	\$ 1,200
Basis adjustments for discontinued hedging relationships included in amortized cost	141	1,142	9	—	140
Total amount of fair value hedging basis adjustments	\$ 6,851	\$ 5,843	\$ 9	\$ —	\$ 1,340

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

Table 7.4 presents net gains (losses) related to derivatives and economic hedging activities recorded in non-interest income for the years ended December 31, 2021, 2020, and 2019.

Table 7.4 - Net Gains (Losses) on Derivatives and Economic Hedging Activities Recorded in Non-interest Income

(dollars in millions)

Derivatives not designated as hedging instruments	Year Ended December 31,		
	2021	2020	2019
Economic hedges			
Interest-rate swaps	\$ 638	\$ (670)	\$ (417)
Interest-rate swaptions	5	86	(11)
Interest-rate caps or floors	1	1	(11)
Interest-rate futures or forwards	7	(65)	(21)
Net interest settlements	(436)	(504)	(45)
Other	7	(10)	—
Mortgage delivery commitments	(28)	60	36
Total net gains (losses) related to derivatives not designated as hedging instruments	194	(1,102)	(469)
Price alignment amount(1)	1	8	20
Net gains (losses) on derivatives	\$ 195	\$ (1,094)	\$ (449)

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

Managing Credit Risk on Derivatives

Each FHLBank is subject to credit risk due to the risk of non-performance by counterparties to its derivative transactions, and manages credit risk through credit analysis, collateral requirements, and adherence to the requirements set forth in its policies, U.S. Commodity Futures Trading Commission regulations, and FHFA regulations.

Uncleared Derivatives. For uncleared derivatives, the degree of credit risk depends on the extent to which master netting arrangements are included in these contracts to mitigate the risk. Each FHLBank requires collateral agreements on its uncleared derivatives. Additionally, collateral related to derivatives with member institutions includes collateral assigned to an FHLBank, as evidenced by a written security agreement and held by the member institution for the benefit of that FHLBank.

Certain of the FHLBanks' uncleared derivative instruments contain provisions that require an FHLBank to post additional collateral with its counterparties if there is deterioration in that FHLBank's credit rating. If an FHLBank's credit rating is lowered by a nationally recognized statistical rating organization, that FHLBank may be required to deliver additional collateral on uncleared derivative instruments in net liability positions, unless the collateral delivery threshold is set to zero. The aggregate fair value of all uncleared derivative instruments with credit-risk-related contingent features that require an FHLBank to deliver additional collateral due to a credit downgrade and were in a net liability position (before cash collateral and related accrued interest) at December 31, 2021, was \$682 million, for which the FHLBanks have posted collateral with a fair value of \$669 million in the normal course of business. If each FHLBank's credit rating had been lowered from its current rating to the next lower rating that would have triggered additional collateral to be delivered, the FHLBanks would have been required to deliver less than one million dollars of additional collateral at fair value to their uncleared derivatives counterparties at December 31, 2021.

Cleared Derivatives. For cleared derivatives, a Derivative Clearing Organization (Clearinghouse) is an FHLBank's counterparty. The Clearinghouse notifies the clearing agent of the required initial and variation margin and the clearing agent in turn notifies the FHLBank. Each FHLBank utilizes one or two Clearinghouses for all cleared derivative transactions, LCH Ltd. and/or CME Clearing. At both Clearinghouses, variation margin is characterized as daily settlement payments and initial margin is considered collateral. The requirement that an FHLBank post initial and variation margin, through the clearing agent to the Clearinghouse, exposes an FHLBank to credit risk if the clearing agent or the Clearinghouse fails to meet its obligations. The use of cleared derivatives is intended to mitigate credit risk exposure because a central counterparty is substituted for individual counterparties and collateral/payments for changes in the fair value of cleared derivatives is posted daily through a clearing agent.

The Clearinghouse determines initial margin requirements and generally credit ratings are not factored into the initial margin. However, clearing agents may require additional initial margin to be posted based on credit considerations, including, but not limited to, credit rating downgrades. None of the FHLBanks were required to post additional initial margin by its clearing agents, based on credit considerations, at December 31, 2021.

Offsetting of Derivative Assets and Derivative Liabilities

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

Each FHLBank has analyzed the enforceability of offsetting rights incorporated in its cleared derivative transactions and determined that the exercise of those offsetting rights by a non-defaulting party under these transactions should be upheld under applicable law upon an event of default including a bankruptcy, insolvency, or similar proceeding involving the Clearinghouse or that FHLBank's clearing agent, or both. Based on this analysis, each FHLBank presents a net derivative receivable or payable for all of its transactions through a particular clearing agent with a particular Clearinghouse.

Table 7.5 presents separately the fair value of derivative instruments meeting or not meeting netting requirements, with and without the legal right of offset, including the related collateral at December 31, 2021 and 2020.

Table 7.5 - Offsetting of Derivative Assets and Derivative Liabilities

(dollars in millions)

December 31, 2021							
Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Not Offset			
Gross Recognized Amount	Gross Amounts of Netting Adjustments and Cash Collateral	Derivative Instruments Not Meeting Netting Requirements(1)	Total Derivative Assets and Total Derivative Liabilities	Can Be Sold or Repledged	Cannot Be Sold or Repledged	Net Amount(2)	
Derivative Assets							
Uncleared	\$ 715	\$ (566)	\$ 2	\$ 151	\$ —	\$ 120	\$ 31
Cleared	313	1,651	—	1,964	(252)	—	2,216
Total			\$ 2,115				\$ 2,247
Derivative Liabilities							
Uncleared	\$ 3,385	\$ (3,239)	\$ 3	\$ 149	\$ —	\$ 28	\$ 121
Cleared	364	(336)	—	28	5	23	—
Total			\$ 177				\$ 121
December 31, 2020							
Derivative Instruments Meeting Netting Requirements				Non-cash Collateral Not Offset			
Gross Recognized Amount	Gross Amounts of Netting Adjustments and Cash Collateral	Derivative Instruments Not Meeting Netting Requirements(1)	Total Derivative Assets and Total Derivative Liabilities	Can Be Sold or Repledged	Cannot Be Sold or Repledged	Net Amount(2)	
Derivative Assets							
Uncleared	\$ 514	\$ (465)	\$ 10	\$ 59	\$ —	\$ 30	\$ 29
Cleared	283	1,275	—	1,558	(379)	—	1,937
Total			\$ 1,617				\$ 1,966
Derivative Liabilities							
Uncleared	\$ 4,488	\$ (3,657)	\$ 9	\$ 840	\$ —	\$ 691	\$ 149
Cleared	355	(321)	—	34	14	8	12
Total			\$ 874				\$ 161

(1) Represents derivatives that are not subject to an enforceable netting agreement (e.g., mortgage delivery commitments and certain interest-rate futures or forwards).

(2) Any over-collateralization at an FHLBank's individual clearing agent and/or counterparty level is not included in the determination of the net amount. At December 31, 2021 and 2020, the FHLBanks had additional net credit exposure of \$1,515 million and \$1,970 million due to instances where an FHLBank's non-cash collateral to a counterparty exceeded the FHLBank's net derivative position.

Note 8 - Deposits

The FHLBanks offer demand and overnight deposit programs to members and to qualifying non-members. In addition, certain FHLBanks offer short-term interest-bearing deposit programs to members, and in certain cases, to qualifying non-members. A member that services mortgage loans may deposit in its FHLBank funds collected in connection with the mortgage loans, pending disbursement of these funds to the owners of the mortgage loans. The FHLBanks classify these funds as other deposits. Deposits classified as demand, overnight, or other pay interest based on a daily interest rate. Term deposits pay interest based on a fixed rate determined at the issuance of the deposit.

Table 8.1 presents interest-bearing and non-interest bearing deposits at December 31, 2021 and 2020.

Table 8.1 - Deposits

(dollars in millions)

	December 31, 2021	December 31, 2020
Interest-bearing		
Demand and overnight	\$ 13,380	\$ 13,609
Term	194	262
Other	12	19
Total interest-bearing	13,586	13,890
Non-interest-bearing		
Demand and overnight	336	547
Other	381	903
Total non-interest-bearing	717	1,450
Total deposits	\$ 14,303	\$ 15,340

Note 9 - Consolidated Obligations

Consolidated obligations consist of consolidated bonds and consolidated discount notes, which are joint and several obligations of all FHLBanks. The FHLBanks issue consolidated obligations through the Office of Finance as their agent. In connection with each debt issuance, an FHLBank specifies the amount of debt it wants issued on its behalf. The Office of Finance tracks the amount of debt issued on behalf of each FHLBank. In addition, each FHLBank records as a liability its specific portion of consolidated obligations for which it is the primary obligor.

The FHFA and the Secretary of the Treasury oversee the issuance of FHLBank debt through the Office of Finance. Consolidated bonds may be issued to raise short-, intermediate-, or long-term funds for the FHLBanks and are not subject to any statutory or regulatory limits on their maturity. Consolidated discount notes are issued primarily to raise short-term funds and have original maturities of up to one year. These notes generally sell below their face value and are redeemed at face value when they mature.

Although each FHLBank is primarily liable for its portion of consolidated obligations, each FHLBank is also jointly and severally liable with the other FHLBanks for the payment of principal and interest on all consolidated obligations of the FHLBanks. The principal amount of the FHLBanks' outstanding consolidated obligations, including consolidated obligations held by other FHLBanks, was \$652.9 billion and \$746.8 billion at December 31, 2021 and 2020. The FHFA, at its discretion, may require any FHLBank to make principal or interest payments due on any consolidated obligation whether or not the consolidated obligation represents a primary liability of that FHLBank. Although an FHLBank has never made the principal or interest payments due on a consolidated obligation on behalf of another FHLBank, if that event should occur, FHFA regulations provide that the paying FHLBank is entitled to reimbursement from the FHLBank that is primarily liable for that consolidated obligation for any payments and other associated costs, including interest to be determined by the FHFA. If, however, that FHLBank is unable to satisfy its repayment obligations, then the FHFA may allocate the outstanding liabilities of that FHLBank among the remaining FHLBanks on a pro-rata basis in proportion to each FHLBank's participation in all consolidated obligations outstanding or in any other manner it may determine to ensure that the FHLBanks operate in a safe and sound manner.

Regulations require each FHLBank to maintain unpledged qualifying assets at least equal to its participation in the consolidated obligations outstanding. Qualifying assets are defined as cash; obligations of or fully guaranteed by the United States; secured advances; mortgages, which have any guaranty, insurance, or commitment from the United States or any agency of the United States; and investments described in Section 16(a) of the FHLBank Act (i.e., obligations, participations, or other instruments of or issued by Fannie Mae or Ginnie Mae; mortgages, obligations, or other securities which are or ever have been sold by Freddie Mac; and such securities as fiduciary and trust funds may invest in under the laws of the state in which the FHLBank is located). Any assets subject to a

lien or pledge for the benefit of the holders of any issue of consolidated obligations are treated as if they were free from lien or pledge for purposes of compliance with these regulations.

Table 9.1 presents the carrying value and principal amount of consolidated discount notes outstanding and the weighted-average interest rate at December 31, 2021 and 2020.

Table 9.1 - Consolidated Discount Notes Outstanding

(dollars in millions)

	Carrying Value	Principal Amount	Weighted-Average Interest Rate(1)
December 31, 2021	\$ 210,897	\$ 210,926	0.05 %
December 31, 2020	\$ 274,804	\$ 274,853	0.11 %

(1) Represents yield to maturity excluding concession fees.

Table 9.2 presents consolidated bonds outstanding by contractual maturity and the weighted-average interest rate at December 31, 2021 and 2020.

Table 9.2 - Consolidated Bonds Outstanding by Contractual Maturity

(dollars in millions)

Year of Contractual Maturity	December 31,			
	2021		2020	
	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
Due in 1 year or less	\$ 186,568	0.38 %	\$ 308,260	0.42 %
Due after 1 year through 2 years	38,856	1.29 %	75,647	0.86 %
Due after 2 years through 3 years	56,852	1.03 %	22,349	1.97 %
Due after 3 years through 4 years	30,531	0.92 %	15,379	2.22 %
Due after 4 years through 5 years	67,545	0.98 %	12,143	1.29 %
Thereafter	61,474	1.88 %	38,030	2.56 %
Total principal amount	441,826	0.88 %	471,808	0.82 %
Net premiums	400		533	
Hedging adjustments	(1,179)		1,340	
Fair value option valuation adjustments	(23)		33	
Total	\$ 441,024		\$ 473,714	

Consolidated bonds outstanding were issued with either fixed-rate coupon payment terms or variable-rate coupon payment terms that are indexed to SOFR, LIBOR, or other specified indices. To meet the specific needs of both the FHLBanks and certain investors in consolidated obligations, both fixed-rate and variable-rate consolidated bonds may contain features that result in complex coupon payment terms and call options. When these consolidated bonds are issued, an FHLBank may enter into derivatives containing features that offset the terms and embedded options, if any, of the consolidated bond obligations.

Table 9.3 presents consolidated bonds outstanding by call features at December 31, 2021 and 2020.

Table 9.3 - Consolidated Bonds Outstanding by Call Features

(dollars in millions)

Principal Amount of Consolidated Bonds	December 31,	
	2021	2020
Non-callable/non-puttable	\$ 253,520	\$ 428,719
Callable	188,306	43,089
Total principal amount	\$ 441,826	\$ 471,808

Table 9.4 presents consolidated bonds outstanding by contractual maturity or next call date at December 31, 2021 and 2020.

Table 9.4 - Consolidated Bonds Outstanding by Contractual Maturity or Next Call Date

(dollars in millions)

Year of Contractual Maturity or Next Call Date	December 31,	
	2021	2020
Due in 1 year or less	\$ 360,003	\$ 338,548
Due after 1 year through 2 years	36,397	76,174
Due after 2 years through 3 years	15,512	20,658
Due after 3 years through 4 years	9,247	12,258
Due after 4 years through 5 years	6,632	7,642
Thereafter	14,035	16,528
Total principal amount	\$ 441,826	\$ 471,808

Consolidated bonds, beyond having fixed-rate or simple variable-rate interest-rate payment terms, may also have the following interest-rate payment types:

- *Step-up bonds* pay interest at increasing fixed rates and *step-down bonds* pay interest at decreasing fixed rates for specified intervals over the life of the consolidated bond. These consolidated bonds generally contain provisions enabling an FHLBank to call consolidated bonds at its option on the step-up or step-down dates.
- *Conversion bonds* have interest rates that convert from fixed to variable, or variable to fixed, or from one index to another, on predetermined dates according to the terms of the consolidated bond offerings.
- *Range bonds* pay interest based on the number of days a specified index is within/outside of a specified range. The computation of the variable interest rate differs for each consolidated bond issue, but the consolidated bond generally pays zero interest or a minimal rate if the specified index is outside of the specified range.

Table 9.5 presents consolidated bonds by interest-rate payment type at December 31, 2021 and 2020.

Table 9.5 - Consolidated Bonds by Interest-Rate Payment Type

(dollars in millions)

Principal Amount of Consolidated Bonds	December 31,	
	2021	2020
Fixed-rate	\$ 326,912	\$ 220,914
Simple variable-rate	90,106	212,047
Step-up	24,808	38,802
Step-down	—	45
Total principal amount	\$ 441,826	\$ 471,808

Consolidated Bonds Denominated in Foreign Currencies. Consolidated bonds issued can be denominated in foreign currencies. Concurrent with these issuances, the FHLBanks exchange the interest and principal payment obligations related to the issues for equivalent amounts denominated in U.S. dollars. There were no consolidated bonds denominated in foreign currencies outstanding at December 31, 2021 and 2020.

Note 10 - Affordable Housing Program

The FHLBank Act requires each FHLBank to establish an AHP. Each FHLBank provides subsidies in the form of direct grants or below-market interest rate advances to members who use the funds to assist in the purchase, construction, or rehabilitation of housing for very low- and low- or moderate-income households. Each FHLBank is required to contribute to its AHP the greater of 10% of its annual income subject to assessment, or the prorated sum required to ensure the aggregate contribution by the FHLBanks is no less than \$100 million for each year. For purposes of the AHP calculation, each FHLBank's income subject to assessment is defined as the individual FHLBank's net income before AHP assessments, plus interest expense related to mandatorily redeemable capital stock. Each FHLBank accrues this expense monthly based on its income subject to assessment. An FHLBank reduces its AHP liability as members use subsidies.

If an FHLBank experienced a net loss during a quarter, but still had income subject to assessment year-to-date, the FHLBank's obligation to the AHP would be calculated based on the FHLBank's year-to-date income subject to assessment. If the FHLBank had income subject to assessment in subsequent quarters, it would be required to contribute additional amounts to meet its calculated annual obligation. If the FHLBank experienced a net loss for a full year, the FHLBank would have no obligation to the AHP for the year, because each FHLBank's required annual AHP contribution is limited to its annual income subject to assessment. If the aggregate 10% calculation previously discussed was less than \$100 million for the FHLBanks, each FHLBank would be required to contribute a prorated sum to ensure that the aggregate contribution by the FHLBanks equals \$100 million. The proration would be made on the basis of an FHLBank's income in relation to the income of all FHLBanks for the previous year, subject to the annual income limitation as previously discussed. In addition to the required AHP assessment, an FHLBank's board of directors may elect to make voluntary contributions to the AHP. There was no shortfall in assessments below the \$100 million minimum amount in the years ended December 31, 2021, 2020, or 2019. If an FHLBank finds that its required contributions are contributing to the financial instability of that FHLBank, it may apply to the FHFA for a temporary suspension of its contributions under the FHLBank Act. The FHLBanks did not make any such applications in the years ended December 31, 2021, 2020, or 2019.

Table 10.1 presents a rollforward of the AHP liability balance for the years ended December 31, 2021, 2020, and 2019.

Table 10.1 - Rollforward of the AHP Liability

(dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
Balance, at beginning of year	\$ 1,032	\$ 1,088	\$ 1,096
Assessments (1)	205	316	364
Subsidy usage, net (2)	(338)	(372)	(372)
Balance, at end of year	\$ 899	\$ 1,032	\$ 1,088

(1) Includes \$4 million, \$1 million, and \$2 million of voluntary AHP contributions in 2021, 2020, and 2019.

(2) Amounts may not agree to the Affordable Housing Program payments, net amounts on the Combined Statement of Cash Flows for each applicable period due to rounding and the amount of subsidies provided for AHP advance disbursements.

Note 11 - Capital

Each FHLBank is subject to three capital requirements under its capital plan and the FHFA rules and regulations. Regulatory capital does not include AOCI, but does include mandatorily redeemable capital stock.

1. *Risk-based capital.* Each FHLBank must maintain at all times permanent capital, defined as Class B stock and retained earnings, in an amount at least equal to the sum of its credit risk, market risk, and operational risk capital requirements, all of which are calculated in accordance with the rules and regulations of the FHFA.
2. *Total regulatory capital.* Each FHLBank must maintain at all times a total capital-to-assets ratio of at least four percent. Total regulatory capital is the sum of permanent capital, the amounts paid-in for Class A stock, any general loss allowance, if consistent with GAAP and not established for specific assets, and other amounts from sources determined by the FHFA as available to absorb losses.
3. *Leverage capital.* Each FHLBank must maintain at all times a leverage capital-to-assets ratio of at least five percent. Leverage capital is defined as the sum of permanent capital weighted 1.5 times and all other components of total capital.

The FHFA may require an FHLBank to maintain greater minimum capital levels than are required based on FHFA rules and regulation. At December 31, 2021, each FHLBank was in compliance with FHFA regulatory capital requirements.

Table 11.1 presents the risk-based capital requirements at December 31, 2021.

Table 11.1 - Risk-Based Capital Requirements at December 31, 2021

(dollars in millions)

FHLBank	Risk-Based Capital	
	Minimum Requirement	Actual
Boston	\$ 387	\$ 2,516
New York	844	6,434
Pittsburgh	407	2,648
Atlanta	814	4,612
Cincinnati	856	3,804
Indianapolis	1,091	3,473
Chicago	1,297	6,656
Des Moines	585	5,783
Dallas	758	3,758
Topeka	363	2,408
San Francisco	1,054	5,896
Combined(1)	8,456	47,988

(1) Based on FHFA rules and regulations, risk-based capital requirements apply to individual FHLBanks, and there are no minimum risk-based capital requirements at a combined level. The combined risk-based capital amounts are for analysis only and are calculated based on the sum of the individual FHLBanks' risk-based capital amounts. The sum of the individual FHLBank amounts may not agree to the combined amount due to combining adjustments.

Table 11.2 presents the regulatory capital requirements at December 31, 2021.

Table 11.2 - Regulatory Capital Requirements at December 31, 2021

(dollars in millions)

FHLBank	Regulatory Capital Ratio		Regulatory Capital	
	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	4.00 %	7.73 %	\$ 1,302	\$ 2,516
New York	4.00 %	6.11 %	4,214	6,434
Pittsburgh	4.00 %	7.03 %	1,506	2,648
Atlanta	4.00 %	5.86 %	3,150	4,612
Cincinnati	4.00 %	6.28 %	2,425	3,804
Indianapolis	4.00 %	5.79 %	2,400	3,473
Chicago	4.00 %	6.87 %	3,878	6,656
Des Moines	4.00 %	6.74 %	3,434	5,783
Dallas	4.00 %	5.92 %	2,540	3,758
Topeka	4.00 %	5.50 %	1,921	2,643
San Francisco	4.00 %	10.89 %	2,165	5,896
Combined(1)		6.67 %	28,935	48,223

(1) Based on FHFA rules and regulations, regulatory capital requirements apply to individual FHLBanks, and there are no minimum regulatory capital requirements at a combined level. The combined regulatory capital ratio and amounts are for analysis only. The combined regulatory capital ratio is calculated based on the combined regulatory capital as a percentage of combined total assets, and the combined regulatory capital amounts are calculated based on the sum of the individual FHLBanks' regulatory capital amounts. The sum of the individual FHLBank amounts may not agree to the combined amount due to combining adjustments.

Table 11.3 presents the leverage capital requirements at December 31, 2021.

Table 11.3 - Leverage Capital Requirements at December 31, 2021

(dollars in millions)

FHLBank	Leverage Capital Ratio		Leverage Capital	
	Minimum Requirement	Actual	Minimum Requirement	Actual
Boston	5.00 %	11.59 %	\$ 1,627	\$ 3,773
New York	5.00 %	9.16 %	5,268	9,651
Pittsburgh	5.00 %	10.55 %	1,883	3,972
Atlanta	5.00 %	8.79 %	3,937	6,918
Cincinnati	5.00 %	9.41 %	3,031	5,706
Indianapolis	5.00 %	8.69 %	3,000	5,211
Chicago	5.00 %	10.30 %	4,848	9,984
Des Moines	5.00 %	10.10 %	4,293	8,675
Dallas	5.00 %	8.88 %	3,174	5,636
Topeka	5.00 %	8.01 %	2,401	3,846
San Francisco	5.00 %	16.34 %	2,706	8,844
Combined(1)		9.99 %	36,168	72,216

(1) Based on FHFA rules and regulations, leverage capital requirements apply to individual FHLBanks, and there are no minimum leverage capital requirements at a combined level. The combined leverage capital ratio and amounts are for analysis only. The combined leverage capital ratio is calculated based on the combined leverage capital as a percentage of combined total assets, and the combined leverage capital amounts are calculated based on the sum of the individual FHLBanks' leverage capital amounts. The sum of the individual FHLBank amounts may not agree to the combined amount due to combining adjustments.

Capital Stock

Each FHLBank is a cooperative whose member financial institutions own most of the FHLBank's capital stock. Former members (including certain non-members that own FHLBank capital stock as a result of merger or acquisition, relocation, charter termination, voluntary termination, or involuntary termination of an FHLBank member) own the remaining capital stock to support business transactions still carried on an FHLBank's statement of condition. Shares of capital stock cannot be purchased or sold except between an FHLBank and its members at its \$100 per share par value, as mandated by each FHLBank's capital plan.

Members can redeem Class A stock by giving six-months written notice, and members can redeem Class B stock by giving five-years written notice, subject to certain restrictions. Any member that withdraws from membership, or otherwise has had its membership terminated, may not be readmitted to membership in any FHLBank until five years from the divestiture date for all capital stock that is held as a condition of membership, as that requirement is set out in an FHLBank's capital plan, unless the institution has canceled its notice of withdrawal prior to that date. This restriction does not apply if the member is transferring its membership from one FHLBank to another on an uninterrupted basis.

Each class of FHLBank stock is considered putable by the member and an FHLBank may repurchase, at its sole discretion, any member's stock investments that exceed the required minimum amount. However, there are significant statutory and regulatory restrictions on the obligation to redeem, or right to repurchase, the outstanding stock. As a result, whether or not a member may have its capital stock in an FHLBank repurchased (at an FHLBank's discretion at any time before the end of the redemption period) or redeemed (at a member's request, completed at the end of a redemption period) will depend in part on whether the FHLBank is in compliance with those restrictions.

An FHLBank's board of directors may declare and pay dividends in either cash or capital stock, assuming the FHLBank is in compliance with FHFA rules.

Restricted Retained Earnings

The Joint Capital Enhancement Agreement, as amended (Capital Agreement), is intended to enhance the capital position of each FHLBank. The Capital Agreement provides that each FHLBank will, on a quarterly basis, allocate 20% of its net income to a separate restricted retained earnings account until the balance of that account, calculated as of the last day of each calendar quarter, equals at least one percent of that FHLBank's average balance of outstanding consolidated obligations for the calendar quarter. These restricted retained earnings are not available to pay dividends. At December 31, 2021, each of the FHLBanks of Boston, Pittsburgh, and San Francisco had restricted retained earnings that exceeded one percent of its average balance of outstanding consolidated obligations. Accordingly, no further allocation of income into restricted retained earnings is required for those three FHLBanks until such time as the contribution requirement exceeds the balance of restricted retained earnings. Additionally, the Capital Agreement provides that amounts in restricted retained earnings in excess of 150% of an FHLBank's restricted retained earnings minimum (i.e., one percent of that FHLBank's average balance of outstanding consolidated obligations calculated as of the last day of each calendar quarter) may be released from restricted retained earnings. As a result of the FHLBank of San Francisco exceeding this threshold, \$53 million was reclassified from restricted retained earnings to unrestricted retained earnings during the year ended December 31, 2021. No amounts were reclassified during the years ended December 31, 2020 and 2019.

Mandatorily Redeemable Capital Stock

An FHLBank generally reclassifies capital stock subject to redemption from capital to the mandatorily redeemable capital stock liability upon expiration of a grace period, if applicable, after a member exercises a written redemption right, or gives notice of intent to withdraw from membership, or attains non-member status by merger or acquisition, relocation, charter termination, or involuntary termination from membership. Shares of capital stock meeting these definitions are reclassified to mandatorily redeemable capital stock at fair value. Dividends related to capital stock classified as mandatorily redeemable capital stock are accrued at the expected dividend rate and reported as interest expense on the Combined Statement of Income. For the years ended December 31, 2021, 2020, and 2019, dividends on mandatorily redeemable capital stock of \$22 million, \$52 million, and \$74 million were recorded as interest expense.

A member may cancel or revoke its written notice of redemption or its notice of withdrawal from membership prior to the end of the applicable redemption period. Each FHLBank's capital plan provides the terms for cancellation fees that may be incurred by the member upon cancellation.

Table 11.4 presents a rollforward of capital stock subject to mandatory redemption for the years ended December 31, 2021, 2020, and 2019. Payment is contingent on, among other things, each FHLBank's waiting period and the FHLBank's ability to meet its minimum regulatory capital requirements. These amounts have been classified as a liability on the Combined Statement of Condition. The number of stockholders holding mandatorily redeemable capital stock was 86, 118, and 136 at December 31, 2021, 2020, and 2019.

Table 11.4 - Rollforward of Mandatorily Redeemable Capital Stock

(dollars in millions)

	Year Ended December 31,		
	2021	2020	2019
Balance, beginning of year	\$ 772	\$ 1,378	\$ 1,062
Capital stock subject to mandatory redemption reclassified from capital	899	2,968	859
Capital stock previously subject to mandatory redemption reclassified to capital	—	(101)	(1)
Redemption/repurchase of mandatorily redeemable capital stock	(1,273)	(3,475)	(559)
Other(1)	—	2	17
Balance, end of year	\$ 398	\$ 772	\$ 1,378

(1) Represents a direct purchase of mandatorily redeemable capital stock by a member and rounding adjustments.

Table 11.5 presents the amount of mandatorily redeemable capital stock by contractual year of redemption at December 31, 2021 and 2020. The year of redemption in the table is the end of the appropriate redemption period applicable to each FHLBank's capital plan. An FHLBank is not required to redeem membership stock until either five years or six months, depending on the type of capital stock issuable under its capital plan, after the membership is terminated or the FHLBank receives notice of withdrawal. However, for certain membership terminations such as mergers, consolidations, terminations related to insolvency, or out-of-district relocations, the FHLBank may recalculate the former member's stock requirement following that termination and the stock may be deemed excess stock subject to repurchase at the FHLBank's discretion. An FHLBank is not required to redeem activity-based stock until the later of the expiration of the notice of redemption or until the activity to which the capital stock relates no longer remains outstanding. If activity-based stock becomes excess stock as a result of an activity no longer remaining outstanding, an FHLBank may repurchase those shares, at its sole discretion, subject to the statutory and regulatory restrictions on excess capital stock redemption.

Table 11.5 - Mandatorily Redeemable Capital Stock by Contractual Year of Redemption*(dollars in millions)*

	December 31,	
	2021	2020
Year 1	\$ 25	\$ 11
Year 2	29	16
Year 3	12	58
Year 4	25	276
Year 5	282	45
Thereafter(1)	—	329
Past contractual redemption date due to remaining activity(2)	25	37
Total	\$ 398	\$ 772

- (1) Represents mandatorily redeemable capital stock resulting from an FHFA rule effective February 19, 2016, that made captive insurance companies ineligible for FHLBank membership. Captive insurance company members that were admitted as FHLBank members prior to September 12, 2014, had their memberships terminated no later than February 19, 2021. The related mandatorily redeemable capital stock is not required to be redeemed until five years after the member's termination.
- (2) Represents mandatorily redeemable capital stock that is past the end of the contractual redemption period because there is activity outstanding to which the mandatorily redeemable capital stock relates.

Excess Capital Stock

Excess capital stock is defined as the amount of stock held by a member (or former member) in excess of that institution's minimum stock ownership requirement. FHFA rules limit the ability of an FHLBank to create member excess capital stock under certain circumstances. An FHLBank may not pay dividends in the form of capital stock or issue new excess capital stock to members if that FHLBank's excess capital stock exceeds one percent of its total assets or if the issuance of excess capital stock would cause that FHLBank's excess capital stock to exceed one percent of its total assets. At December 31, 2021, each of the FHLBanks of Indianapolis and Dallas had excess capital stock outstanding totaling more than one percent of its total assets.

Capital Classification Determination

The FHFA determines each FHLBank's capital classification on at least a quarterly basis. If an FHLBank is determined to be other than adequately capitalized, that FHLBank becomes subject to additional supervisory authority by the FHFA. Before implementing a reclassification, the Director of the FHFA is required to provide that FHLBank with written notice of the proposed action and an opportunity to submit a response. Each FHLBank was classified by the FHFA as adequately capitalized as of the date of the FHFA's most recent notification to each FHLBank.

Note 12 - Accumulated Other Comprehensive Income (Loss)

Table 12.1 presents a summary of changes in accumulated other comprehensive income (loss) for the years ended December 31, 2021, 2020, and 2019.

Table 12.1 - Accumulated Other Comprehensive Income (Loss)

(dollars in millions)

	Net Unrealized Gains (Losses) on AFS Securities (Note 4)	Net Non-Credit Portion of OTTI Gains (Losses) on AFS Securities (Note 4)	Net Non-Credit Portion of OTTI Gains (Losses) on HTM Securities (Note 4)	Net Unrealized Gains (Losses) Relating to Hedging Activities (Note 7)	Pension and Postretirement Benefits (Note 13)	Total Accumulated Other Comprehensive Income (Loss)
Balance, December 31, 2018	\$ 318	\$ 425	\$ (268)	\$ (25)	\$ (108)	\$ 342
Other comprehensive income before reclassifications						
Unrealized gains (losses)	175	(74)	—	(205)	—	(104)
Non-credit OTTI losses	—	(5)	—	—	—	(5)
Non-credit losses included in basis of securities sold	—	—	29	—	—	29
Accretion of non-credit loss	—	—	59	—	—	59
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	(1)	—	—	—	—	(1)
Non-credit OTTI to credit OTTI	—	16	1	—	—	17
Amortization on hedging activities	—	—	—	31	—	31
Amortization - pension and postretirement	—	—	—	—	(24)	(24)
Net current period other comprehensive income (loss)	174	(63)	89	(174)	(24)	2
Balance, December 31, 2019	492	362	(179)	(199)	(132)	344
Other comprehensive income before reclassifications						
Unrealized gains (losses)	643	—	—	(259)	—	384
Non-credit losses included in basis of securities sold	—	—	112	—	—	112
Adjustment for transfer of HTM securities to AFS securities	—	—	32	—	—	32
Accretion of non-credit loss	—	—	22	—	—	22
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	(121)	—	—	—	—	(121)
Amortization on hedging activities	—	—	—	45	—	45
Amortization - pension and postretirement	—	—	—	—	(34)	(34)
Net current period other comprehensive income (loss)	522	—	166	(214)	(34)	440
Adjustment for the adoption of ASU 2016-13, as amended(1)	362	(362)	—	—	—	—
Balance, December 31, 2020	1,376	—	(13)	(413)	(166)	784
Other comprehensive income before reclassifications						
Unrealized gains (losses)	233	—	—	173	—	406
Accretion of non-credit loss	—	—	7	—	—	7
Reclassifications from accumulated other comprehensive income (loss) to net income						
Reclassification of realized net (gains) losses included in net income	(1)	—	—	—	—	(1)
Amortization on hedging activities	—	—	—	47	—	47
Amortization - pension and postretirement	—	—	—	—	54	54
Net current period other comprehensive income (loss)	232	—	7	220	54	513
Balance, December 31, 2021	\$ 1,608	\$ —	\$ (6)	\$ (193)	\$ (112)	\$ 1,297

(1) With the adoption of the CECL accounting guidance on January 1, 2020, OTTI assessment was replaced with an allowance for credit losses. (See [Note 1 - Summary of Significant Accounting Policies](#) for further information.)

Note 13 - Pension and Postretirement Benefit Plans

Qualified Defined Benefit Multiemployer Plan

All of the FHLBanks participate in the Pentegra Defined Benefit Plan for Financial Institutions (Pentegra DB Plan), except for the FHLBank of San Francisco, which provides a Cash Balance Plan to eligible employees. The Pentegra DB Plan is a tax-qualified, defined-benefit pension plan. The Pentegra DB Plan is treated as a multiemployer plan for accounting purposes, but operates as a multiple-employer plan under the Employee Retirement Income Security Act of 1974 (ERISA) and the Internal Revenue Code. As a result, certain multiemployer plan disclosures are not applicable to the Pentegra DB Plan. Under the Pentegra DB Plan, contributions made by a participating employer may be used to provide benefits to employees of other participating employers because assets contributed by an employer are not segregated in a separate account or restricted to provide benefits only to employees of that employer. Also, in the event a participating employer is unable to meet its contribution requirements, the required contributions for the other participating employers could increase proportionately.

The Pentegra DB Plan covers officers and employees of the FHLBanks that meet certain eligibility requirements, except that:

- In November 2020, the FHLBank of Boston's board of directors elected to freeze the Pentegra DB Plan to newly hired employees effective January 1, 2021. After January 1, 2024, new benefits will no longer accrue under the Pentegra DB Plan for all employees.
- FHLBank of Pittsburgh employees are eligible to participate only if hired before January 1, 2019;
- FHLBank of Atlanta employees are eligible to participate only if hired before March 1, 2011;
- FHLBank of Indianapolis employees are eligible to participate only if hired before February 1, 2010;
- In August 2016, the FHLBank of Des Moines' board of directors elected to freeze the Pentegra DB Plan effective January 1, 2017. After January 1, 2017, participants no longer accrue new benefits under the Pentegra DB Plan;
- FHLBank of Dallas employees are eligible to participate only if hired before January 1, 2007, or hired on or after January 1, 2007, provided that the new employee had prior service with a financial services institution that participated in the Pentegra DB Plan, during which service the employee was covered by that plan. Effective July 1, 2015, coverage was extended to include all of the FHLBank of Dallas' non-highly compensated employees (as defined by the Internal Revenue Service rules) who were hired on and after January 1, 2007, but before August 1, 2010; and
- In September 2019, the FHLBank of Topeka's board of directors elected to freeze the Pentegra DB Plan effective December 31, 2019. After December 31, 2019, participants no longer accrue new benefits under the Pentegra DB Plan. Prior to the plan freeze, employees of the FHLBank of Topeka who began employment prior to January 1, 2009 were eligible to participate.

The Pentegra DB Plan operates on a fiscal year from July 1 through June 30. The Pentegra DB Plan files one Form 5500 on behalf of all employers who participate in the plan. The Employer Identification Number is 13-5645888 and the three-digit plan number is 333. There are no collective bargaining agreements in place at any FHLBank.

The Pentegra DB Plan's annual valuation process includes calculating the plan's funded status and separately calculating the funded status of each participating employer. The funded status is defined as the market value of assets divided by the funding target (100% of the present value of all benefit liabilities accrued at that date). As

permitted by ERISA, the Pentegra DB Plan accepts contributions for the prior plan year up to eight and a half months after the asset valuation date. As a result, the market value of assets at the valuation date (July 1) will increase by any subsequent contributions designated for the immediately preceding plan year ended June 30.

The most recent Form 5500 available for the Pentegra DB Plan is for the plan year ended June 30, 2020. None of the individual FHLBanks' contributions during 2021 were more than 5% of the total contributions to the Pentegra DB Plan for the plan year ended June 30, 2020. The contributions made by each of the FHLBanks of New York, Atlanta, Chicago and Dallas during 2020 were each more than 5% of the total contributions to the Pentegra DB Plan for the plan year ended June 30, 2019.

Table 13.1 presents the Pentegra DB Plan net pension cost and funded status.

Table 13.1 - Pentegra DB Plan Net Pension Cost and Funded Status

(dollars in millions)

	2021	2020	2019
Net pension cost charged to compensation and benefit expense for the year ended December 31	\$ 55	\$ 132	\$ 57
Pentegra DB Plan funded status as of July 1	129.6 % ^(a)	108.5 % ^(b)	108.6 %
Range of the FHLBanks' funded status as of July 1	118.6%-179.7%	90.1%-145.4%	94.8%-144.8%

(a) The Pentegra DB Plan's funded status as of July 1, 2021, is preliminary and may increase because the plan's participants were permitted to make contributions for the plan year ended June 30, 2021 through March 15, 2022. Contributions made on or before March 15, 2022, and designated for the plan year ended June 30, 2021, will be included in the final valuation as of July 1, 2021. The final funded status as of July 1, 2021, will not be available until the Form 5500 for the plan year July 1, 2021 through June 30, 2022, is filed (this Form 5500 is due to be filed no later than April 2023).

(b) The Pentegra DB Plan's funded status as of July 1, 2020, is preliminary and may increase because the plan's participants were permitted to make contributions for the plan year ended June 30, 2020 through March 15, 2021. Contributions made on or before March 15, 2021, and designated for the plan year ended June 30, 2020, will be included in the final valuation as of July 1, 2020. The final funded status as of July 1, 2020, will not be available until the Form 5500 for the plan year July 1, 2020 through June 30, 2021, is filed (this Form 5500 is due to be filed no later than April 2022).

Defined Contribution Retirement Plans

Qualified Defined Contribution Plans. Each FHLBank participates in a defined contribution plan. Under these plans, each FHLBank contributes a percentage of the participants' compensation by making a matching contribution equal to a percentage of the employee's voluntary contributions, subject to certain limitations.

Nonqualified Supplemental Defined Contribution Retirement Plans. Certain FHLBanks maintain at least one or more nonqualified, unfunded supplemental defined contribution plans. These plans restore all or a portion of defined contributions to those employees who have had their qualified defined contribution benefits limited by IRS regulations. The unfunded liability associated with these nonqualified supplemental defined contribution retirement plans was \$139 million and \$132 million at December 31, 2021 and 2020. However, certain of these FHLBanks have established a grantor/rabbi trust to meet future benefit obligations and current payments to the beneficiaries.

Costs expensed for all qualified and nonqualified defined contribution plans were \$35 million, \$32 million, and \$31 million for the years ended December 31, 2021, 2020, and 2019.

Defined Benefit Retirement Plans

Nonqualified Supplemental Defined Benefit Retirement Plans. Certain FHLBanks maintain one or more nonqualified, unfunded supplemental defined benefit plans. These plans ensure that participants receive the full amount of benefits to which they would have been entitled under the qualified defined benefit plan in the absence of limits on benefit levels imposed by the IRS. Certain of these FHLBanks have established a grantor/rabbi trust to meet future benefit obligations and current payments to the beneficiaries. There are no funded plan assets that have been designated to provide supplemental retirement benefits.

FHLBank of San Francisco Cash Balance Plan. The FHLBank of San Francisco provides retirement benefits through its Cash Balance Plan, a qualified defined benefit plan. The Cash Balance Plan is provided to all employees who have completed six months of FHLBank of San Francisco service. Under the plan, each eligible FHLBank of San Francisco employee accrues benefits annually equal to six percent of the employee's total annual compensation, plus six percent interest on the benefits accrued to the employee through the prior year-end. The Cash Balance Plan is funded through a qualified trust established by the FHLBank of San Francisco. The fair value of the plan assets were \$93 million and \$86 million at December 31, 2021 and 2020; all plan assets were Level 1 within the fair value hierarchy. (See [Note 14 - Fair Value](#) for more information.)

Table 13.2 presents the obligations and funding status of the FHLBanks' nonqualified supplemental defined benefit retirement plans and the FHLBank of San Francisco's Cash Balance Plan (collectively referred to as "Defined Benefit Retirement Plans") at December 31, 2021 and 2020.

Table 13.2 - Benefit Obligation, Fair Value of Plan Assets, and Funded Status

(dollars in millions)

Defined Benefit Retirement Plans	December 31,	
	2021	2020
Benefit obligation	\$ 430	\$ 495
Fair value of plan assets	93	86
Funded status	\$ (337)	\$ (409)

Amounts recognized in other liabilities on the Combined Statement of Condition for the FHLBanks' Defined Benefit Retirement Plans at December 31, 2021 and 2020, were \$337 million and \$409 million. Amounts recognized for net actuarial loss and prior service cost in accumulated other comprehensive income (loss) on the Combined Statement of Condition for the FHLBanks' Defined Benefit Retirement Plans at December 31, 2021 and 2020, were \$117 million and \$172 million. The accumulated benefit obligation for the Defined Benefit Retirement Plans was \$397 million and \$440 million at December 31, 2021 and 2020. The net periodic benefit cost recognized in compensation and benefits on the Combined Statement of Income for the FHLBanks' Defined Benefit Retirement Plans was \$46 million, \$39 million, and \$35 million for the years ended December 31, 2021, 2020, and 2019.

Estimated future benefit payments are based on each plan's census data, benefit formulas and provisions, and valuation assumptions reflecting the probability of decrement and survival. The present value of the future benefit payments is determined by using duration-based interest rate yields from a variety of highly rated relevant corporate bond indices as of December 31, 2021, and solving for the single discount rate that produces the same present value. The discount rate used to determine the benefit obligation for the FHLBanks' Defined Benefit Retirement Plans ranged from 2.0% - 2.7% for 2021, and 1.3% - 2.3% for 2020.

The nonqualified supplemental retirement plans are not funded; therefore, no contributions will be made in 2022 other than for the payment of benefits. Table 13.3 presents the estimated future payments of benefits.

Table 13.3 - Estimated Future Benefit Payments

(dollars in millions)

Years	Payments
2022	\$ 51
2023	24
2024	26
2025	31
2026	58
2027-2031	130

Postretirement Benefit Plans

Certain FHLBanks offer postretirement benefit plans that may include health care and/or life insurance benefits for eligible retirees. There are no funded plan assets that have been designated to provide postretirement benefits. The financial amounts related to postretirement benefit plans are immaterial to the FHLBanks' combined financial condition, combined results of operations, and combined cash flows.

Note 14 - Fair Value

The fair value amounts recorded on the Combined Statement of Condition and presented in the note disclosures for the periods presented have been determined by the FHLBanks using available market and other pertinent information and reflect each FHLBank's best judgment of appropriate valuation methods. GAAP defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (i.e., an exit price). Although each FHLBank uses its best judgment in estimating the fair value of its financial instruments, there are inherent limitations in any valuation technique. Therefore, the fair values may not be indicative of the amounts that would have been realized in market transactions at December 31, 2021 and 2020. Additionally, these values do not represent an estimate of the overall market value of the FHLBanks as going concerns, which would take into account future business opportunities and the net profitability of assets and liabilities.

Fair Value Hierarchy

GAAP establishes a fair value hierarchy and requires an entity to maximize the use of significant observable inputs and minimize the use of significant unobservable inputs when measuring fair value. The inputs are evaluated and an overall level for the fair value measurement is determined. This overall level is an indication of market observability of the fair value measurement for the asset or liability. An entity must disclose the level within the fair value hierarchy in which the measurements are classified.

The fair value hierarchy prioritizes the inputs used to measure fair value into three broad levels:

- **Level 1 Inputs.** Quoted prices (unadjusted) for identical assets or liabilities in an active market that the reporting entity can access on the measurement date. An active market for the asset or liability is a market in which the transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis.
- **Level 2 Inputs.** Inputs other than quoted prices within Level 1, that are observable inputs for the asset or liability, either directly or indirectly. If the asset or liability has a specified or contractual term, a Level 2 input must be observable for substantially the full term of the asset or liability. Level 2 inputs include the following: (1) quoted prices for similar assets or liabilities in active markets; (2) quoted prices for identical or similar assets or liabilities in markets that are not active; (3) inputs other than quoted prices that are observable for the asset or liability (e.g., interest rates and yield curves that are observable at commonly quoted intervals, and implied volatilities); and (4) inputs that are derived principally from or corroborated by observable market data by correlation or other means.
- **Level 3 Inputs.** Unobservable inputs for the asset or liability. Valuations are derived from techniques that use significant assumptions not observable in the market, which include pricing models, discounted cash flow models, or similar techniques.

Each FHLBank reviews its fair value hierarchy classifications on a quarterly basis. Changes in the observability of the valuation inputs may result in a reclassification of certain assets or liabilities. The FHLBanks had no transfers of assets or liabilities into or out of Level 3 of the fair value hierarchy during the years ended December 31, 2021, 2020, or 2019.

Table 14.1 presents the carrying value, fair value, and fair value hierarchy of financial assets and liabilities of the FHLBanks at December 31, 2021 and 2020. The FHLBanks record trading securities, AFS securities, derivative assets, derivative liabilities, certain advances, certain consolidated obligations, and certain other assets at fair value on a recurring basis, and on occasion certain mortgage loans held for portfolio and certain other assets at fair value on a non-recurring basis. The FHLBanks record all other financial assets and liabilities at amortized cost. Refer to Table 14.2 for further details about the financial assets and liabilities held at fair value on either a recurring or non-recurring basis.

Table 14.1 - Fair Value Summary

(dollars in millions)

Financial Instruments	December 31, 2021					
	Carrying Value(1)	Fair Value				Netting Adjustment and Cash Collateral(2)
		Total	Level 1	Level 2	Level 3	
Assets						
Cash and due from banks	\$ 3,532	\$ 3,532	\$ 3,532	\$ —	\$ —	\$ —
Interest-bearing deposits	6,382	6,382	2,688	3,694	—	—
Securities purchased under agreements to resell	64,292	64,292	—	64,292	—	—
Federal funds sold	47,360	47,360	—	47,360	—	—
Trading securities	24,354	24,354	5,821	18,533	—	—
Available-for-sale securities	118,411	118,411	—	115,546	2,865	—
Held-to-maturity securities	47,672	48,300	—	47,643	657	—
Advances(3)	351,278	352,483	—	352,483	—	—
Mortgage loans held for portfolio	55,497	56,262	—	56,087	175	—
Mortgage loans held for sale(4)	54	54	—	54	—	—
Accrued interest receivable	874	874	—	874	—	—
Derivative assets, net	2,115	2,115	—	1,030	—	1,085
Other assets	414	415	311	104	—	—
Liabilities						
Deposits	14,303	14,303	—	14,303	—	—
Consolidated obligations						
Discount notes(5)	210,897	210,889	—	210,889	—	—
Bonds(6)	441,024	442,491	—	442,491	—	—
Total consolidated obligations	651,921	653,380	—	653,380	—	—
Mandatorily redeemable capital stock	398	398	398	—	—	—
Accrued interest payable	830	830	—	830	—	—
Derivative liabilities, net	177	177	—	3,752	—	(3,575)
Other liabilities	65	66	30	36	—	—

Financial Instruments	December 31, 2020					
	Carrying Value(1)	Fair Value				Netting Adjustment and Cash Collateral(2)
		Total	Level 1	Level 2	Level 3	
Assets						
Cash and due from banks	\$ 25,125	\$ 25,125	\$ 25,125	\$ —	\$ —	\$ —
Interest-bearing deposits	8,076	8,076	3,282	4,794	—	—
Securities purchased under agreements to resell	45,588	45,588	—	45,588	—	—
Federal funds sold	31,510	31,510	—	31,510	—	—
Trading securities	55,218	55,218	11,741	43,477	—	—
Available-for-sale securities	103,123	103,123	—	100,712	2,411	—
Held-to-maturity securities	62,350	63,547	—	61,835	1,712	—
Advances(3)	422,639	425,227	—	425,227	—	—
Mortgage loans held for portfolio	62,842	65,007	—	64,722	285	—
Mortgage loans held for sale(4)	105	105	—	105	—	—
Accrued interest receivable	1,146	1,146	—	1,146	—	—
Derivative assets, net	1,617	1,617	—	807	—	810
Other assets	368	371	313	58	—	—
Liabilities						
Deposits	15,340	15,340	—	15,340	—	—
Consolidated obligations						
Discount notes(5)	274,804	274,817	—	274,817	—	—
Bonds(6)	473,714	479,178	—	479,178	—	—
Total consolidated obligations	748,518	753,995	—	753,995	—	—
Mandatorily redeemable capital stock	772	774	774	—	—	—
Accrued interest payable	776	774	—	774	—	—
Derivative liabilities, net	874	874	—	4,852	—	(3,978)
Other liabilities	67	70	32	38	—	—

(1) For certain financial instruments, the amounts represent net carrying value, which includes an allowance for credit losses.

(2) Amounts represent the application of the netting requirements that allow an FHLBank to settle positive and negative positions, and also cash collateral and related accrued interest held or placed by that FHLBank with the same clearing agent and/or counterparty.

(3) Includes \$2,971 million and \$3,489 million of advances recorded under fair value option at December 31, 2021 and 2020.

(4) Represents mortgage loans held for sale recorded under fair value option, included in other assets, net on the Combined Statement of Condition.

(5) Includes \$32,769 million and \$9,134 million of consolidated discount notes recorded under fair value option at December 31, 2021 and 2020.

(6) Includes \$15,853 million and \$20,798 million of consolidated bonds recorded under fair value option at December 31, 2021 and 2020.

Summary of Valuation Methodologies and Primary Inputs

The valuation methodologies and primary inputs used to develop the measurement of fair value for assets and liabilities that are measured at fair value on a recurring or nonrecurring basis in the Statement of Condition are listed below. The fair values and level within the fair value hierarchy of these assets and liabilities are reported in Table 14.2.

Investment securities-MBS. Each FHLBank's valuation technique incorporates prices from multiple designated third-party pricing vendors, when available. The third-party pricing vendors use various proprietary models to price MBS. The inputs to those models are derived from various sources, including, but not limited to, benchmark yields, reported trades, dealer estimates, issuer spreads, benchmark securities, bids, offers, and other market-related data. As many MBS do not trade on a daily basis, the pricing vendors use applicable, available information, such as benchmark curves, benchmarking of like securities, sector groupings, and matrix pricing, to determine the prices for individual securities. Each pricing vendor has an established challenge process in place for all MBS valuations, which facilitates resolution of potentially erroneous prices identified by the FHLBanks. Each FHLBank has conducted reviews of multiple pricing vendors to confirm and further augment its understanding of the vendors' pricing processes, methodologies, and control procedures for specific instruments.

The FHLBanks' valuation technique for estimating the fair values of MBS first requires the establishment of a median price for each security. All prices that are within a specified tolerance threshold of the median price are included in the cluster of prices that are averaged to compute a default price. All prices that are outside the threshold (outliers) are subject to further analysis to determine if an outlier is a better estimate of fair value. These steps include, but are not limited to, comparison to prices provided by an additional third-party valuation service, prices for similar securities, and/or non-binding dealer estimates. If an outlier or some other price identified in the analysis is determined to be a better estimate of fair value, then the outlier or the other price as appropriate is used as the final price rather than the default price. Alternatively, if the analysis confirms that an outlier (or outliers) is (are) in fact not representative of fair value and the default price is the best estimate, then the default price is used as the final price. In all cases, the final price is used to determine the fair value of the security.

As of December 31, 2021 and 2020, multiple prices were received for substantially all of the FHLBanks' MBS holdings and the final prices for those securities were computed by averaging the prices received. Based on each FHLBank's review of the pricing methods employed by the third-party pricing vendors and the relative lack of dispersion among the vendor prices (or, in those instances in which there were outliers or significant yield variances, the FHLBanks' additional analyses), each FHLBank believes its final prices result in reasonable estimates of fair value and that the fair value measurements are classified appropriately in the fair value hierarchy. Based on the lack of significant market activity for private-label MBS, the recurring and non-recurring fair value measurements for those securities were classified as Level 3 within the fair value hierarchy as of December 31, 2021 and 2020.

Investment securities-Non-MBS. To determine the estimated fair values of non-MBS investment securities, each FHLBank uses either a market approach using prices from third-party pricing vendors, generally consistent with the methodologies for MBS, or an income approach based on a market-observable interest rate curve adjusted for a spread, which may be based on unobservable information. Differing spreads may be applied to distinct term points along the discount curve in determining the fair values of instruments with varying maturities. Each FHLBank believes that its methodologies result in fair values that are reasonable and similar in all material respects based on the nature of the financial instruments being measured. The market-observable interest rate curves used by the FHLBanks and the related financial instrument they measure are as follows:

- *Treasury Curve.* U.S. Treasury obligations.
- *LIBOR Swap Curve.* Certificates of deposit and Federal Family Education Loan Program ABS.
- *U.S. Government Agency Fair Value Curve.* Government-sponsored enterprises and Tennessee Valley Authority obligations.

Advances recorded under fair value option. Each FHLBank generally determines the fair values of its advances recorded under fair value option by calculating the present value of expected future cash flows from the advances, excluding the amount of the accrued interest receivable. The discount rates used in these calculations are equivalent to the replacement advance rates for advances with similar terms. Each FHLBank calculates its replacement advance rates at a spread to its cost of funds. Each FHLBank's cost of funds approximates the consolidated obligation (CO) curve. (See *Summary of Valuation Methodologies and Primary Inputs - Consolidated obligations* within this note for a discussion of the CO curve.) To estimate the fair values of advances with optionality, market-based expectations of future interest rate volatility implied from current market prices for similar options are also used. In accordance with the FHFA's advances regulations, an advance with a maturity or repricing period greater than six months requires a prepayment fee sufficient to make an FHLBank financially indifferent to the borrower's decision to prepay the advances. Therefore, the fair values of advances do not assume prepayment risk.

The FHLBanks did not adjust their fair value measurement of advances recorded under fair value option for creditworthiness primarily because advances were fully collateralized. (See [Note 5 - Advances](#) for additional information.)

Mortgage loans held for sale. The fair value of mortgage loans held for sale is based on to-be-announced (TBA) securities, which represent quoted market prices for new mortgage-backed securities issued by U.S. government-sponsored enterprises.

Impaired mortgage loans held for portfolio and real estate owned. The estimated fair values of impaired mortgage loans held for portfolio and real estate owned on a non-recurring basis are generally based on broker prices, property values obtained from a third-party pricing vendor, or current actual loss severity rates that the FHLBanks have incurred on sales. All estimated fair values of impaired mortgage loans held for portfolio and real estate owned are net of any estimated selling costs.

Derivative assets/liabilities. Each FHLBank bases the fair values of derivatives with similar terms on market prices, when available. However, active markets do not exist for many of the FHLBanks' derivatives. Consequently, fair values for these instruments are generally estimated using standard valuation techniques such as discounted cash flow analysis and comparisons to similar instruments. In limited instances, fair value estimates for derivatives are obtained from dealers and are corroborated by an FHLBank using a pricing model and observable market data. Each FHLBank is subject to credit risk due to the risk of nonperformance by counterparties to its derivative transactions. For uncleared derivatives, the degree of credit risk depends on the extent to which master netting arrangements are included in these contracts to mitigate the risk. In addition, each FHLBank requires collateral agreements with collateral delivery thresholds on the majority of its uncleared derivatives. The use of cleared derivatives is intended to mitigate credit risk exposure because a central counterparty is substituted for individual counterparties and collateral is posted daily, through a clearing agent, for changes in the value of cleared derivatives. Each FHLBank has evaluated the potential for the fair value of the instruments to be affected by counterparty credit risk and its own credit risk and has determined that no adjustments were significant to the overall fair value measurements.

The fair values of each FHLBank's derivative assets and liabilities include accrued interest receivable/payable and related cash collateral. The estimated fair values of the accrued interest receivable/payable and cash collateral approximate their carrying values due to their short-term nature. Derivatives are presented on a net basis by clearing agent and/or by counterparty when it has met the netting requirements. If these netted amounts are positive, they are classified as an asset and, if negative, they are classified as a liability.

Each FHLBank's discounted cash flow analysis uses market-observable inputs. Inputs by class of derivative are as follows:

Interest-rate related:

- *Discount rate assumption.* The FHLBanks used the Federal Funds Overnight Index Swap (OIS) or the SOFR swap curve depending on the terms of the derivative.
- *Forward interest rate assumption.* The swap curve of the instrument's index rate.
- *Volatility assumption.* Market-based expectations of future interest rate volatility implied from current market prices for similar options.
- *Prepayment assumption* (if applicable).
- *TBA securities prices.* Market-based prices of TBAs are determined by coupon class and expected term until settlement.
- *TBA "drops."* TBA price "drops" are used to adjust base TBA prices and are a function of current short-term interest rates, prepayment estimates, and the supply and demand for pass-throughs in the current delivery month. TBA drops are obtained from a market-observable source.

Mortgage delivery commitments:

- *TBA securities prices.* TBA security prices are generally adjusted for differences in coupon, average loan rate, and seasoning.

Consolidated obligations recorded under fair value option. Each FHLBank estimates the fair values of consolidated obligations recorded under fair value option based on prices received from pricing vendors, consistent with the methodology for MBS previously discussed, or by using standard valuation techniques and inputs based on the cost of raising comparable term debt.

The inputs used to determine the fair values of consolidated obligations are as follows:

- *CO Curve and LIBOR or SOFR Swap Curve.* The Office of Finance constructs an internal curve, referred to as the CO curve, using the U.S. Treasury curve as a base curve that is then adjusted by adding indicative spreads obtained from market observable sources. These market indications are generally derived from pricing indications from dealers of consolidated obligations, historical pricing relationships, recent GSE trades, and secondary market activity. The LIBOR swap curve was used for certain callable consolidated obligations. The FHLBanks construct a SOFR swap curve using available SOFR market data, including futures prices and SOFR swap rates, to determine fair value for SOFR-indexed consolidated obligations.
- *Volatility assumption.* To estimate the fair values of consolidated obligations with optionality the FHLBanks use market-based expectations of future interest rate volatility implied from current market prices for similar options.
- *Spread adjustment.* FHLBanks may apply an adjustment to the curve.

The FHLBanks monitor their own creditworthiness and determine if any credit risk adjustments are necessary in their fair value measurement of consolidated obligations.

Subjectivity of estimates. Estimates of the fair value of financial assets and liabilities using the methodologies described above are highly subjective and require judgments regarding significant matters such as the amount and timing of future cash flows, prepayment speed assumptions, expected interest rate volatility, possible distributions of future interest rates used to value options, and the selection of discount rates that appropriately reflect market and credit risks. The use of different assumptions could have a material effect on the fair value estimates.

Fair Value Measurements

Table 14.2 presents the fair value of assets and liabilities that are recorded on a recurring or non-recurring basis at December 31, 2021 and 2020, by level within the fair value hierarchy. The FHLBanks measure certain mortgage loans at fair value on a non-recurring basis due to the recognition of a credit loss. Real estate owned is measured at fair value when the asset's fair value less costs to sell is lower than its carrying amount.

Table 14.2 - Fair Value Measurements

(dollars in millions)

	December 31, 2021				Netting Adjustment and Cash Collateral(1)
	Total	Level 1	Level 2	Level 3	
Recurring fair value measurements - Assets					
Trading securities					
Certificates of deposit	\$ 200	\$ —	\$ 200	\$ —	\$ —
U.S. Treasury obligations	20,367	5,821	14,546	—	—
Other U.S. obligations	102	—	102	—	—
GSE and Tennessee Valley Authority obligations	2,359	—	2,359	—	—
Other non-MBS	202	—	202	—	—
U.S. obligations single-family MBS	2	—	2	—	—
GSE single-family MBS	37	—	37	—	—
GSE multifamily MBS	1,085	—	1,085	—	—
Total trading securities	24,354	5,821	18,533	—	—
Available-for-sale securities					
U.S. Treasury obligations	23,882	—	23,882	—	—
Other U.S. obligations	2,903	—	2,903	—	—
GSE and Tennessee Valley Authority obligations	10,377	—	10,377	—	—
State or local housing agency obligations	1,765	—	704	1,061	—
Federal Family Education Loan Program ABS	2,772	—	2,772	—	—
Other non-MBS	729	—	729	—	—
U.S. obligations single-family MBS	3,577	—	3,577	—	—
U.S. obligations multifamily MBS	541	—	541	—	—
GSE single-family MBS	4,911	—	4,911	—	—
GSE multifamily MBS	65,150	—	65,150	—	—
Private-label MBS	1,804	—	—	1,804	—
Total available-for-sale securities	118,411	—	115,546	2,865	—
Advances(2)	2,971	—	2,971	—	—
Mortgage loans held for sale(2)	54	—	54	—	—
Derivative assets, net					
Interest-rate related	2,113	—	1,028	—	1,085
Mortgage delivery commitments	2	—	2	—	—
Total derivative assets, net	2,115	—	1,030	—	1,085
Other assets	379	311	68	—	—
Total recurring assets at fair value	\$ 148,284	\$ 6,132	\$ 138,202	\$ 2,865	\$ 1,085
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(2)	\$ 32,769	\$ —	\$ 32,769	\$ —	\$ —
Bonds(2)	15,853	—	15,853	—	—
Total consolidated obligations	48,622	—	48,622	—	—
Derivative liabilities, net					
Interest-rate related	174	—	3,749	—	(3,575)
Mortgage delivery commitments	3	—	3	—	—
Total derivative liabilities, net	177	—	3,752	—	(3,575)
Total recurring liabilities at fair value	\$ 48,799	\$ —	\$ 52,374	\$ —	\$ (3,575)
Non-recurring fair value measurements - Assets(3)					
Mortgage loans held for portfolio	\$ 52	\$ —	\$ 1	\$ 51	—
Real estate owned	1	—	—	1	—
Total non-recurring assets at fair value	\$ 53	\$ —	\$ 1	\$ 52	—

	December 31, 2020				
	Total	Level 1	Level 2	Level 3	Netting Adjustment and Cash Collateral(1)
Recurring fair value measurements - Assets					
Trading securities					
U.S. Treasury obligations	\$ 50,734	\$ 11,741	\$ 38,993	\$ —	\$ —
Other U.S. obligations	114	—	114	—	—
GSE and Tennessee Valley Authority obligations	2,827	—	2,827	—	—
Other non-MBS	254	—	254	—	—
U.S. obligations single-family MBS	6	—	6	—	—
GSE single-family MBS	48	—	48	—	—
GSE multifamily MBS	1,235	—	1,235	—	—
Total trading securities	55,218	11,741	43,477	—	—
Available-for-sale securities					
U.S. Treasury obligations	8,529	—	8,529	—	—
Other U.S. obligations	3,636	—	3,636	—	—
GSE and Tennessee Valley Authority obligations	11,893	—	11,893	—	—
State or local housing agency obligations	1,074	—	951	123	—
Federal Family Education Loan Program ABS	3,034	—	3,034	—	—
Other non-MBS	777	—	777	—	—
U.S. obligations single-family MBS	4,451	—	4,451	—	—
U.S. obligations multifamily MBS	47	—	47	—	—
GSE single-family MBS	5,474	—	5,474	—	—
GSE multifamily MBS	61,920	—	61,920	—	—
Private-label MBS	2,288	—	—	2,288	—
Total available-for-sale securities	103,123	—	100,712	2,411	—
Advances(2)	3,489	—	3,489	—	—
Mortgage loans held for sale(2)	105	—	105	—	—
Derivative assets, net					
Interest-rate related	1,607	—	797	—	810
Mortgage delivery commitments	10	—	10	—	—
Total derivative assets, net	1,617	—	807	—	810
Other assets	333	313	20	—	—
Total recurring assets at fair value	\$ 163,885	\$ 12,054	\$ 148,610	\$ 2,411	\$ 810
Recurring fair value measurements - Liabilities					
Consolidated Obligations					
Discount notes(2)	\$ 9,134	\$ —	\$ 9,134	\$ —	\$ —
Bonds(2)	20,798	—	20,798	—	—
Total consolidated obligations	29,932	—	29,932	—	—
Derivative liabilities, net					
Interest-rate related	867	—	4,845	—	(3,978)
Mortgage delivery commitments	7	—	7	—	—
Total derivative liabilities, net	874	—	4,852	—	(3,978)
Total recurring liabilities at fair value	\$ 30,806	\$ —	\$ 34,784	\$ —	\$ (3,978)
Non-recurring fair value measurements - Assets(3)					
Mortgage loans held for portfolio	\$ 89	\$ —	2	\$ 87	—
Real estate owned	2	—	—	2	—
Total non-recurring assets at fair value	\$ 91	\$ —	\$ 2	\$ 89	—

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

(2) Represents financial instruments recorded under fair value option at December 31, 2021 and 2020.

(3) The fair value information presented is as of the date the fair value adjustment was recorded during the period.

Level 3 Disclosures for All Assets and Liabilities that are Measured at Fair Value on a Recurring Basis

Table 14.3 presents a rollforward of assets and liabilities measured at fair value on a recurring basis and classified as Level 3 during the years ended December 31, 2021, 2020, and 2019.

Table 14.3 - Rollforward of Level 3 Assets and Liabilities

(dollars in millions)

	Year Ended December 31,					
	2021		2020		2019	
	State and Local Housing Agency Obligations	Private-Label MBS	State and Local Housing Agency Obligations	Private-Label MBS	State and Local Housing Agency Obligations	Private-Label MBS
Balance, at beginning of period	\$ 123	\$ 2,288	\$ 65	\$ 3,642	\$ 50	\$ 4,473
Total gains (losses) included in earnings						
Net gains (losses) on sale of available-for-sale securities	—	—	—	118	—	—
Interest income	—	79	—	86	—	145
Net other-than-temporary impairment losses	n/a	n/a	n/a	n/a	—	(25)
(Provision) reversal for credit losses on available-for-sale securities	—	4	—	(27)	n/a	n/a
Total gains (losses) included in other comprehensive income						
Net unrealized gains (losses) on available-for-sale securities	3	14	7	(195)	1	(1)
Net amount of impairment losses reclassified to (from) non-interest income	—	—	—	—	—	11
Net change in fair value of other-than-temporarily impaired securities	—	—	—	—	—	(74)
Purchases, issuances, sales, and settlements						
Purchases	100	—	—	—	14	—
Sales and maturities	(61)	—	(19)	(946)	—	—
Settlements	(7)	(583)	(1)	(573)	—	(888)
Transfers from held-to-maturity securities to available-for-sale securities	903	2	71	183	—	1
Balance, at end of period	\$ 1,061	\$ 1,804	\$ 123	\$ 2,288	\$ 65	\$ 3,642
Total amount of unrealized gains (losses) for the period included in OCI relating to assets held at the end of the period	\$ —	\$ 14	\$ 6	\$ (125)		
Total amount of gains (losses) for the period included in earnings attributable to the change in unrealized gains/losses relating to assets held at the end of period	\$ —	\$ 81	\$ —	\$ 54	\$ —	\$ 63

Fair Value Option

The fair value option provides an irrevocable option to elect fair value as an alternative measurement for selected financial assets, financial liabilities, unrecognized firm commitments, and written loan commitments not previously carried at fair value. It requires entities to display the fair value of those assets and liabilities for which the entity has chosen to use fair value on the face of the statement of condition. Fair value is used for both the initial and subsequent measurement of the designated assets, liabilities and commitments, with the changes in fair value recognized in net income. Interest income and interest expense on advances and consolidated obligations at fair value are recognized solely on the contractual amount of interest due or unpaid. Any transaction fees or costs are immediately recognized into non-interest income or non-interest expense.

The FHLBanks of New York, Cincinnati, Chicago, Des Moines, and San Francisco (Electing FHLBanks) have each elected the fair value option for certain financial instruments when a hedge relationship does not qualify for hedge accounting or may be at risk for not meeting hedge effectiveness requirements. These fair value elections were made primarily in an effort to mitigate the potential income statement volatility that can arise when an economic derivative is adjusted for changes in fair value, but the related hedged item is not.

Table 14.4 presents net gains (losses) recognized in earnings related to financial assets and liabilities for which the fair value option was elected during the years ended December 31, 2021, 2020, and 2019.

Table 14.4 - Fair Value Option - Financial Assets and Liabilities

(dollars in millions)

Net Gains (Losses) from Changes in Fair Value Recognized in Earnings	Year Ended December 31,		
	2021	2020	2019
Advances	\$ (111)	\$ 150	\$ 165
Mortgage loans held for sale(1)	(3)	(1)	(1)
Consolidated discount notes	4	(1)	(1)
Consolidated bonds	43	(10)	(85)
Total net gains (losses)	\$ (67)	\$ 138	\$ 78

(1) Included in other assets, net on the Combined Statement of Condition.

For instruments for which the fair value option has been elected, the related contractual interest income, contractual interest expense, and the discount amortization on fair value option discount notes are recorded as part of net interest income on the Combined Statement of Income. The remaining changes in fair value for instruments for which the fair value option has been elected are recorded as net gains (losses) on financial instruments held under fair value option on the Combined Statement of Income, except for changes in fair value related to instrument specific credit risk, which are recorded in AOCI on the Combined Statement of Condition. Each of the Electing FHLBanks determined that none of the remaining changes in fair value were related to instrument specific credit risk during the years ended December 31, 2021, 2020, and 2019. In determining that there has been no change in instrument specific credit risk period to period, the Electing FHLBanks primarily considered the following factors:

- The FHLBanks are federally chartered GSEs, and as a result of this status, the FHLBanks' consolidated obligations have historically received the same credit ratings as the government bond credit rating of the United States, even though they are not obligations of the United States and are not guaranteed by the United States.
- Each FHLBank is jointly and severally liable with the other FHLBanks for the payment of principal and interest on all consolidated obligations of each of the FHLBanks.

Table 14.5 presents the difference between the aggregate fair value and the aggregate unpaid principal balance outstanding for advances, mortgage loans held for sale, and consolidated obligations for which the fair value option has been elected at December 31, 2021 and 2020.

Table 14.5 - Aggregate Fair Value and Aggregate Unpaid Balance

(dollars in millions)

	December 31, 2021			December 31, 2020		
	Aggregate Fair Value	Aggregate Unpaid Principal Balance	Aggregate Fair Value Over/(Under) Aggregate Unpaid Principal Balance	Aggregate Fair Value	Aggregate Unpaid Principal Balance	Aggregate Fair Value Over/(Under) Aggregate Unpaid Principal Balance
Advances	\$ 2,971	\$ 2,850	\$ 121	\$ 3,489	\$ 3,256	\$ 233
Mortgage loans held for sale(1)	54	52	2	105	100	5
Consolidated discount notes	32,769	32,781	(12)	9,134	9,119	15
Consolidated bonds	15,853	15,876	(23)	20,798	20,765	33

(1) Included in other assets, net on the Combined Statement of Condition.

Note 15 - Commitments and Contingencies

Off-Balance Sheet Commitments

Table 15.1 represents off-balance sheet commitments at December 31, 2021 and 2020. Each FHLBank has deemed it unnecessary to record any liabilities for credit losses on these commitments at December 31, 2021 and 2020.

Table 15.1 - Off-Balance Sheet Commitments

(dollars in millions)

Notional amount	December 31, 2021			December 31, 2020
	Expire Within One Year	Expire After One Year	Total	Total
Standby letters of credit notional amount(1)	\$ 132,310	\$ 18,846	\$ 151,156	\$ 164,446
Unsettled consolidated bonds, principal amount	3,590	—	3,590	528
Commitments for standby bond purchases	391	2,263	2,654	2,695
Unused lines of credit - advances	2,145	—	2,145	2,325
Commitments to fund additional advances	2,000	112	2,112	1,391
Unsettled consolidated discount notes, principal amount	1,350	—	1,350	4,724
Commitments to purchase mortgage loans	969	—	969	2,276
Other	4	—	4	3

(1) Excludes unconditional commitments to issue standby letters of credit of \$415 million and \$68 million at December 31, 2021 and 2020.

Standby Letters of Credit. An FHLBank issues standby letters of credit on behalf of its members to support certain obligations of the members (or member's customers) to third-party beneficiaries. These standby letters of credit are generally subject to the same collateralization and borrowing limits that are applicable to advances. Standby letters of credit may be offered to assist members and non-member housing associates in facilitating residential housing finance, community lending, and asset-liability management, and to provide liquidity. In particular, members often use standby letters of credit as collateral for deposits from federal, state, and local government agencies. Standby letters of credit are executed for members for a fee. If an FHLBank is required to make payment for a beneficiary's draw, the member either reimburses the FHLBank for the amount drawn or, subject to the applicable FHLBank's discretion, the amount drawn may be converted into a collateralized advance to the member. However, standby letters of credit usually expire without being drawn upon. At December 31, 2021, standby letters of credit have original expiration periods of up to 26 years, expiring no later than 2047. The carrying value of guarantees related to standby letters of credit are recorded in other liabilities and were \$89 million and \$97 million at December 31, 2021 and 2020.

Each FHLBank monitors the creditworthiness of its members that have standby letters of credit. In addition, standby letters of credit are subject to the same collateralization and borrowing limits that apply to advances and are fully collateralized at the time of issuance.

Standby Bond-Purchase Agreements. Certain FHLBanks have entered into standby bond-purchase agreements with state housing authorities within their district whereby these FHLBanks agree to provide liquidity for a fee. If required, the affected FHLBanks will purchase and hold the state housing authority's bonds until the designated marketing agent can find a suitable investor or the state housing authority repurchases the bond according to a schedule established by the standby bond-purchase agreement. Each standby bond-purchase agreement dictates the specific terms that would require the affected FHLBank to purchase the bond and typically allows the FHLBank to terminate the agreement upon the occurrence of a default event of the issuer. The standby bond-purchase commitments entered into by these FHLBanks have original expiration periods of up to seven years, currently expiring no later than 2026, although some are renewable at the option of the affected FHLBank. At December 31, 2021 and 2020, the FHLBanks had standby bond-purchase commitments with 13 and 14 state housing authorities. During the year ended December 31, 2021, the FHLBanks were not required to purchase any bonds under these agreements. During the year ended December 31, 2020, the FHLBanks were required to purchase one bond for \$122 million under these agreements.

Pledged Collateral

Certain FHLBanks pledged securities, as collateral, related to derivatives. (See [Note 7 - Derivatives and Hedging Activities](#) for additional information about the FHLBanks' pledged collateral and other credit-risk-related contingent features.)

Legal Proceedings

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

Note 16 - Subsequent Events

Subsequent events have been evaluated from January 1, 2022, through the time of this Combined Financial Report publication. No significant subsequent events were identified, except for the declaration of dividends or repurchase or redemption of excess capital stock, which generally occur in the normal course of business unless there are regulatory or self-imposed restrictions, and the following event:

FHLBank of San Francisco

One of the FHLBank of San Francisco's private-label residential MBS investments is held within a trust that has been the subject of litigation by the trustee since 2012. Upon final resolution of the litigation, to which the FHLBank of San Francisco was not a party, the trustee was required to transmit settlement proceeds to the trust. As a result of the distribution of the settlement proceeds in January 2022, to the beneficial owners of the securities in the trust, including the FHLBank of San Francisco, this FHLBank recorded settlement proceeds of \$28 million as income and also recognized a reduction of the principal balance of the private-label residential MBS of \$53 million in January 2022. Additionally, upon resolution of the trustee litigation and distribution of the FHLBank of San Francisco's share of the settlement proceeds, a triggering event occurred causing the FHLBank of San Francisco to pay one of the defendants in a settled private-label residential MBS litigation a previously recorded liability of \$41 million in the first quarter of 2022.

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES

STATEMENTS OF CONDITION

DECEMBER 31, 2021

<i>(dollars in millions, except par value)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Assets							
Cash and due from banks	\$ 3,532	\$ (2)	\$ 205	\$ 22	\$ 428	\$ 879	\$ 168
Investments, net	308,471	(119)	16,372	30,802	18,098	31,821	29,392
Advances	351,278	2	12,340	71,536	14,124	45,415	23,055
Mortgage loans held for portfolio, net	55,497	1	3,120	2,320	4,676	149	7,588
Other assets, net	4,460	(3)	508	678	325	482	415
Total assets	\$ 723,238	\$ (121)	\$ 32,545	\$ 105,358	\$ 37,651	\$ 78,746	\$ 60,618
Liabilities							
Deposits	\$ 14,303	\$ (13)	\$ 884	\$ 1,321	\$ 1,088	\$ 2,054	\$ 1,416
Consolidated obligations							
Discount notes	210,897	1	2,275	42,197	10,494	25,506	29,838
Bonds	441,024	(112)	26,613	54,829	23,106	46,186	24,602
Total consolidated obligations	651,921	(111)	28,888	97,026	33,600	71,692	54,440
Mandatorily redeemable capital stock	398	1	14	2	22	1	21
Other liabilities	7,494	1	228	563	207	404	945
Total liabilities	674,116	(122)	30,014	98,912	34,917	74,151	56,822
Capital							
Capital stock							
Class B putable (\$100 par value) issued and outstanding	24,831	(2)	954	4,501	1,227	2,383	2,490
Class A putable (\$100 par value) issued and outstanding	234	—	—	—	—	—	—
Total capital stock	25,065	(2)	954	4,501	1,227	2,383	2,490
Retained earnings							
Unrestricted	17,110	1	1,180	1,104	941	1,613	783
Restricted	5,650	—	368	827	457	615	510
Total retained earnings	22,760	1	1,548	1,931	1,398	2,228	1,293
Accumulated other comprehensive income (loss)	1,297	2	29	14	109	(16)	13
Total capital	49,122	1	2,531	6,446	2,734	4,595	3,796
Total liabilities and capital	\$ 723,238	\$ (121)	\$ 32,545	\$ 105,358	\$ 37,651	\$ 78,746	\$ 60,618

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF CONDITION (continued)

DECEMBER 31, 2021

<i>(dollars in millions, except par value)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Assets						
Cash and due from banks	\$ 868	\$ 45	\$ 295	\$ 543	\$ 26	\$ 55
Investments, net	23,601	38,583	33,442	34,653	16,058	35,768
Advances	27,498	48,049	44,111	24,637	23,484	17,027
Mortgage loans held for portfolio, net	7,616	9,843	7,578	3,491	8,135	980
Other assets, net	422	434	426	164	318	291
Total assets	\$ 60,005	\$ 96,954	\$ 85,852	\$ 63,488	\$ 48,021	\$ 54,121
Liabilities						
Deposits	\$ 1,367	\$ 1,034	\$ 1,847	\$ 1,590	\$ 946	\$ 769
Consolidated obligations						
Discount notes	12,116	24,563	22,348	11,003	6,569	23,987
Bonds	42,362	63,373	55,205	44,514	37,630	22,716
Total consolidated obligations	54,478	87,936	77,553	55,517	44,199	46,703
Mandatorily redeemable capital stock	50	247	29	7	1	3
Other liabilities	554	985	585	2,440	160	422
Total liabilities	56,449	90,202	80,014	59,554	45,306	47,897
Capital						
Capital stock						
Class B putable (\$100 par value) issued and outstanding	2,246	2,149	3,364	2,193	1,265	2,061
Class A putable (\$100 par value) issued and outstanding	—	—	—	—	234	—
Total capital stock	2,246	2,149	3,364	2,193	1,499	2,061
Retained earnings						
Unrestricted	890	3,558	1,773	1,291	852	3,124
Restricted	287	703	617	267	291	708
Total retained earnings	1,177	4,261	2,390	1,558	1,143	3,832
Accumulated other comprehensive income (loss)	133	342	84	183	73	331
Total capital	3,556	6,752	5,838	3,934	2,715	6,224
Total liabilities and capital	\$ 60,005	\$ 96,954	\$ 85,852	\$ 63,488	\$ 48,021	\$ 54,121

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES

STATEMENTS OF CONDITION

DECEMBER 31, 2020

<i>(dollars in millions, except par value)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Assets							
Cash and due from banks	\$ 25,125	\$ 1	\$ 2,050	\$ 1,896	\$ 1,036	\$ 2,905	\$ 2,984
Investments, net	305,865	(131)	13,342	39,668	16,523	36,380	27,041
Advances	422,639	—	18,817	92,067	24,971	52,168	25,362
Mortgage loans held for portfolio, net	62,842	—	3,930	2,900	4,886	218	9,549
Other assets, net	4,269	(2)	322	465	297	624	360
Total assets	\$ 820,740	\$ (132)	\$ 38,461	\$ 136,996	\$ 47,713	\$ 92,295	\$ 65,296
Liabilities							
Deposits	\$ 15,340	\$ (17)	\$ 1,089	\$ 1,753	\$ 923	\$ 1,998	\$ 1,327
Consolidated obligations							
Discount notes	274,804	1	12,878	57,659	9,510	25,385	27,500
Bonds	473,714	(131)	21,472	69,716	33,855	59,379	31,997
Total consolidated obligations	748,518	(130)	34,350	127,375	43,365	84,764	59,497
Mandatorily redeemable capital stock	772	1	6	3	143	—	19
Other liabilities	5,930	1	234	609	241	273	523
Total liabilities	770,560	(145)	35,679	129,740	44,672	87,035	61,366
Capital							
Capital stock							
Class B putable (\$100 par value) issued and outstanding	26,986	(2)	1,268	5,367	1,528	3,078	2,641
Class A putable (\$100 par value) issued and outstanding	412	—	—	—	—	—	—
Total capital stock	27,398	(2)	1,268	5,367	1,528	3,078	2,641
Retained earnings							
Unrestricted	16,564	13	1,130	1,135	919	1,610	803
Restricted	5,434	—	368	774	457	588	501
Total retained earnings	21,998	13	1,498	1,909	1,376	2,198	1,304
Accumulated other comprehensive income (loss)	784	2	16	(20)	137	(16)	(15)
Total capital	50,180	13	2,782	7,256	3,041	5,260	3,930
Total liabilities and capital	\$ 820,740	\$ (132)	\$ 38,461	\$ 136,996	\$ 47,713	\$ 92,295	\$ 65,296

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF CONDITION (continued)

DECEMBER 31, 2020

<i>(dollars in millions, except par value)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Assets						
Cash and due from banks	\$ 1,812	\$ 3,541	\$ 978	\$ 3,178	\$ 4,570	\$ 174
Investments, net	23,756	39,649	31,497	25,660	17,252	35,228
Advances	31,347	46,695	46,530	32,479	21,227	30,976
Mortgage loans held for portfolio, net	8,516	10,038	8,242	3,423	9,205	1,935
Other assets, net	494	433	444	173	338	321
Total assets	\$ 65,925	\$ 100,356	\$ 87,691	\$ 64,913	\$ 52,592	\$ 68,634
Liabilities						
Deposits	\$ 1,375	\$ 1,284	\$ 1,908	\$ 1,583	\$ 1,230	\$ 887
Consolidated obligations						
Discount notes	16,617	48,643	27,345	22,171	10,882	16,213
Bonds	43,333	42,670	52,254	37,113	37,648	44,408
Total consolidated obligations	59,950	91,313	79,599	59,284	48,530	60,621
Mandatorily redeemable capital stock	251	279	52	14	2	2
Other liabilities	899	1,191	392	475	162	930
Total liabilities	62,475	94,067	81,951	61,356	49,924	62,440
Capital						
Capital stock						
Class B putable (\$100 par value) issued and outstanding	2,208	2,010	3,341	2,101	1,162	2,284
Class A putable (\$100 par value) issued and outstanding	—	—	—	—	412	—
Total capital stock	2,208	2,010	3,341	2,101	1,574	2,284
Retained earnings						
Unrestricted	869	3,424	1,775	1,174	793	2,919
Restricted	268	648	576	234	259	761
Total retained earnings	1,137	4,072	2,351	1,408	1,052	3,680
Accumulated other comprehensive income (loss)	105	207	48	48	42	230
Total capital	3,450	6,289	5,740	3,557	2,668	6,194
Total liabilities and capital	\$ 65,925	\$ 100,356	\$ 87,691	\$ 64,913	\$ 52,592	\$ 68,634

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF INCOME

YEARS ENDED DECEMBER 31, 2021 and 2020

<i>(dollars in millions)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
December 31, 2021							
Interest income							
Advances	\$ 2,634	\$ 2	\$ 204	\$ 483	\$ 140	\$ 306	\$ 147
Investments	2,408	(7)	129	412	148	133	319
Mortgage loans held for portfolio	1,425	1	93	71	126	9	169
Other interest income	4	1	—	—	—	—	—
Total interest income	6,471	(3)	426	966	414	448	635
Interest expense							
Consolidated obligations - Discount notes	226	—	5	75	7	12	14
Consolidated obligations - Bonds	2,473	12	210	349	223	155	344
Other interest expense	25	1	—	1	4	—	—
Total interest expense	2,724	13	215	425	234	167	358
Net interest income	3,747	(16)	211	541	180	281	277
Provision (reversal) for credit losses	(15)	1	(1)	(6)	(3)	(1)	—
Net interest income after provision (reversal) for credit losses	3,762	(17)	212	547	183	282	277
Non-interest income (loss)	(358)	(29)	(47)	(48)	13	15	(138)
Non-interest expense	1,432	(34)	88	204	100	149	92
Affordable Housing Program assessments	201	—	8	29	10	15	5
Net income	\$ 1,771	\$ (12)	\$ 69	\$ 266	\$ 86	\$ 133	\$ 42
December 31, 2020							
Interest income							
Advances	\$ 6,654	\$ —	\$ 424	\$ 1,167	\$ 626	\$ 870	\$ 469
Investments	4,286	—	205	675	312	394	502
Mortgage loans held for portfolio	1,862	(1)	125	92	155	13	276
Other interest income	5	(1)	—	—	—	—	—
Total interest income	12,807	(2)	754	1,934	1,093	1,277	1,247
Interest expense							
Consolidated obligations - Discount notes	2,535	(1)	188	429	180	357	295
Consolidated obligations - Bonds	5,748	—	374	748	531	582	542
Other interest expense	83	—	1	4	19	5	4
Total interest expense	8,366	(1)	563	1,181	730	944	841
Net interest income	4,441	(1)	191	753	363	333	406
Provision (reversal) for credit losses	38	—	(4)	4	4	—	—
Net interest income after provision (reversal) for credit losses	4,403	(1)	195	749	359	333	406
Non-interest income (loss)	273	(24)	40	(51)	(20)	113	(7)
Non-interest expense	1,570	(39)	102	207	104	163	92
Affordable Housing Program assessments	315	1	13	49	25	28	31
Net income	\$ 2,791	\$ 13	\$ 120	\$ 442	\$ 210	\$ 255	\$ 276

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF INCOME (continued)

YEARS ENDED DECEMBER 31, 2021 and 2020

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
December 31, 2021						
Interest income						
Advances	\$ 115	\$ 282	\$ 472	\$ 130	\$ 129	\$ 224
Investments	186	293	171	170	122	332
Mortgage loans held for portfolio	169	251	204	78	212	42
Other interest income	—	2	—	—	1	—
Total interest income	470	828	847	378	464	598
Interest expense						
Consolidated obligations - Discount notes	9	44	12	30	5	13
Consolidated obligations - Bonds	206	229	452	71	160	62
Other interest expense	3	12	2	—	1	1
Total interest expense	218	285	466	101	166	76
Net interest income	252	543	381	277	298	522
Provision (reversal) for credit losses	—	2	—	—	(1)	(6)
Net interest income after provision (reversal) for credit losses	252	541	381	277	299	528
Non-interest income (loss)	(34)	(12)	4	10	(42)	(50)
Non-interest expense	113	222	156	105	78	159
Affordable Housing Program assessments	11	32	23	18	18	32
Net income	\$ 94	\$ 275	\$ 206	\$ 164	\$ 161	\$ 287
December 31, 2020						
Interest income						
Advances	\$ 329	\$ 586	\$ 950	\$ 367	\$ 268	\$ 598
Investments	293	549	357	322	190	487
Mortgage loans held for portfolio	231	295	258	103	281	34
Other interest income	—	5	—	—	1	—
Total interest income	853	1,435	1,565	792	740	1,119
Interest expense						
Consolidated obligations - Discount notes	117	307	172	199	123	169
Consolidated obligations - Bonds	462	516	915	277	364	437
Other interest expense	11	17	6	5	3	8
Total interest expense	590	840	1,093	481	490	614
Net interest income	263	595	472	311	250	505
Provision (reversal) for credit losses	—	7	1	1	(1)	26
Net interest income after provision (reversal) for credit losses	263	588	471	310	251	479
Non-interest income (loss)	(55)	104	121	32	(39)	59
Non-interest expense	109	275	189	122	81	165
Affordable Housing Program assessments	11	43	41	22	13	38
Net income	\$ 88	\$ 374	\$ 362	\$ 198	\$ 118	\$ 335

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF INCOME

YEAR ENDED DECEMBER 31, 2019

<i>(dollars in millions)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Interest income							
Advances	\$ 16,856	\$ (1)	\$ 890	\$ 2,527	\$ 1,871	\$ 2,451	\$ 1,204
Investments	9,169	(3)	407	1,153	645	1,271	901
Mortgage loans held for portfolio	2,234	(1)	148	101	170	18	340
Other interest income	5	—	—	—	—	—	—
Total interest income	28,264	(5)	1,445	3,781	2,686	3,740	2,445
Interest expense							
Consolidated obligations - Discount notes	9,028	(1)	570	1,291	601	1,371	989
Consolidated obligations - Bonds	14,319	(1)	598	1,799	1,603	1,808	1,033
Other interest expense	235	(1)	8	24	28	26	17
Total interest expense	23,582	(3)	1,176	3,114	2,232	3,205	2,039
Net interest income	4,682	(2)	269	667	454	535	406
Provision (reversal) for credit losses	2	—	—	—	1	—	—
Net interest income after provision (reversal) for credit losses	4,680	(2)	269	667	453	535	406
Non-interest income (loss)	297	(29)	41	34	3	19	(10)
Non-interest expense	1,425	(32)	98	176	102	146	89
Affordable Housing Program assessments	362	—	21	52	37	41	31
Net income	\$ 3,190	\$ 1	\$ 191	\$ 473	\$ 317	\$ 367	\$ 276

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF INCOME (continued)

YEAR ENDED DECEMBER 31, 2019

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Interest income						
Advances	\$ 813	\$ 1,333	\$ 2,466	\$ 909	\$ 716	\$ 1,677
Investments	582	985	957	786	467	1,018
Mortgage loans held for portfolio	357	313	285	111	305	87
Other interest income	—	4	—	—	1	—
Total interest income	1,752	2,635	3,708	1,806	1,489	2,782
Interest expense						
Consolidated obligations - Discount notes	440	1,038	817	781	532	599
Consolidated obligations - Bonds	1,050	1,109	2,289	711	689	1,631
Other interest expense	25	30	26	20	11	21
Total interest expense	1,515	2,177	3,132	1,512	1,232	2,251
Net interest income	237	458	576	294	257	531
Provision (reversal) for credit losses	—	—	—	1	—	—
Net interest income after provision (reversal) for credit losses	237	458	576	293	257	531
Non-interest income (loss)	20	100	20	56	22	21
Non-interest expense	98	223	168	97	73	187
Affordable Housing Program assessments	17	35	44	25	21	38
Net income	\$ 142	\$ 300	\$ 384	\$ 227	\$ 185	\$ 327

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF COMPREHENSIVE INCOME

YEARS ENDED DECEMBER 31, 2021, 2020, AND 2019

<i>(dollars in millions)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
December 31, 2021							
Net income	\$ 1,771	\$ (12)	\$ 69	\$ 266	\$ 86	\$ 133	\$ 42
Other comprehensive income							
Net unrealized gains (losses) on available-for-sale securities	232	—	10	(81)	(29)	(9)	21
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	7	1	—	4	—	—	—
Net unrealized gains (losses) relating to hedging activities	220	(2)	(2)	106	—	—	—
Pension and postretirement benefits	54	1	5	5	1	9	7
Total other comprehensive income (loss)	513	—	13	34	(28)	—	28
Comprehensive income (loss)	\$ 2,284	\$ (12)	\$ 82	\$ 300	\$ 58	\$ 133	\$ 70
December 31, 2020							
Net income	\$ 2,791	\$ 13	\$ 120	\$ 442	\$ 210	\$ 255	\$ 276
Other comprehensive income							
Net unrealized gains (losses) on available-for-sale securities	522	1	122	151	46	(41)	4
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	166	(1)	76	2	—	—	—
Net unrealized gains (losses) relating to hedging activities	(214)	1	6	(113)	—	—	—
Pension and postretirement benefits	(34)	1	(1)	(12)	(1)	3	(3)
Total other comprehensive income (loss)	440	2	203	28	45	(38)	1
Comprehensive income (loss)	\$ 3,231	\$ 15	\$ 323	\$ 470	\$ 255	\$ 217	\$ 277
December 31, 2019							
Net income	\$ 3,190	\$ 1	\$ 191	\$ 473	\$ 317	\$ 367	\$ 276
Other comprehensive income							
Net unrealized gains (losses) on available-for-sale securities	174	(1)	79	82	35	—	1
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	26	(1)	54	3	(13)	(31)	—
Net unrealized gains (losses) relating to hedging activities	(174)	2	(1)	(111)	—	—	—
Pension and postretirement benefits	(24)	(1)	(2)	(9)	(3)	2	(4)
Total other comprehensive income (loss)	2	(1)	130	(35)	19	(29)	(3)
Comprehensive income (loss)	\$ 3,192	\$ —	\$ 321	\$ 438	\$ 336	\$ 338	\$ 273

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF COMPREHENSIVE INCOME (continued)

YEARS ENDED DECEMBER 31, 2021, 2020, AND 2019

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
December 31, 2021						
Net income	\$ 94	\$ 275	\$ 206	\$ 164	\$ 161	\$ 287
Other comprehensive income						
Net unrealized gains (losses) on available-for-sale securities	15	74	36	69	30	96
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	—	—	—	2	—	—
Net unrealized gains (losses) relating to hedging activities	—	54	—	64	—	—
Pension and postretirement benefits	13	7	—	—	1	5
Total other comprehensive income (loss)	28	135	36	135	31	101
Comprehensive income (loss)	\$ 122	\$ 410	\$ 242	\$ 299	\$ 192	\$ 388
December 31, 2020						
Net income	\$ 88	\$ 374	\$ 362	\$ 198	\$ 118	\$ 335
Other comprehensive income						
Net unrealized gains (losses) on available-for-sale securities	47	188	4	27	18	(45)
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	—	85	—	3	—	1
Net unrealized gains (losses) relating to hedging activities	—	(27)	—	(81)	—	—
Pension and postretirement benefits	(10)	(10)	—	—	(1)	—
Total other comprehensive income (loss)	37	236	4	(51)	17	(44)
Comprehensive income (loss)	\$ 125	\$ 610	\$ 366	\$ 147	\$ 135	\$ 291
December 31, 2019						
Net income	\$ 142	\$ 300	\$ 384	\$ 227	\$ 185	\$ 327
Other comprehensive income						
Net unrealized gains (losses) on available-for-sale securities	37	(107)	(39)	26	8	53
Net non-credit portion of other-than-temporary impairment gains (losses) on investment securities	—	29	—	2	—	(17)
Net unrealized gains (losses) relating to hedging activities	—	(7)	—	(57)	—	—
Pension and postretirement benefits	(11)	1	(1)	—	1	3
Total other comprehensive income (loss)	26	(84)	(40)	(29)	9	39
Comprehensive income (loss)	\$ 168	\$ 216	\$ 344	\$ 198	\$ 194	\$ 366

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF CAPITAL

YEARS ENDED DECEMBER 31, 2021, 2020, AND 2019

<i>(dollars in millions)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Balance, December 31, 2018	\$ 58,344	\$ 1	\$ 3,607	\$ 7,747	\$ 5,376	\$ 7,647	\$ 5,330
Adjustment for cumulative effect of accounting changes	15	(1)	—	—	—	—	—
Comprehensive income (loss)	3,192	—	321	438	336	338	273
Proceeds from issuance of capital stock	40,230	3	1,854	8,280	6,451	9,087	592
Repurchases/redemptions of capital stock	(43,550)	(1)	(2,514)	(8,563)	(7,061)	(9,564)	(1,538)
Net shares reclassified (to)/ from mandatorily redeemable capital stock	(858)	(1)	—	(4)	(362)	(21)	(7)
Dividends of capital stock	175	—	—	—	—	—	—
Dividends							
Cash	(1,946)	—	(123)	(366)	(267)	(324)	(205)
Stock	(175)	—	—	—	—	—	—
Balance, December 31, 2019	55,427	1	3,145	7,532	4,473	7,163	4,445
Adjustment for cumulative effect of accounting change	(28)	1	(8)	(4)	—	—	—
Partial recovery of prior capital distribution to Financing Corporation	200	(2)	4	18	9	29	17
Comprehensive income (loss)	3,231	15	323	470	255	217	277
Proceeds from issuance of capital stock	27,498	(1)	2,157	5,641	2,902	5,078	2,135
Repurchases/redemptions of capital stock	(31,837)	—	(2,758)	(6,050)	(4,390)	(6,966)	(2,300)
Net shares reclassified (to)/ from mandatorily redeemable capital stock	(2,867)	(1)	—	(3)	(39)	(22)	(561)
Dividends of capital stock	109	—	—	—	—	—	—
Dividends							
Cash	(1,444)	—	(81)	(348)	(169)	(239)	(83)
Stock	(109)	—	—	—	—	—	—
Balance, December 31, 2020	50,180	13	2,782	7,256	3,041	5,260	3,930
Comprehensive income (loss)	2,284	(12)	82	300	58	133	70
Proceeds from issuance of capital stock	14,273	—	241	2,647	846	1,325	1,109
Repurchases/redemptions of capital stock	(15,790)	(1)	(544)	(3,513)	(1,146)	(1,993)	(1,186)
Net shares reclassified (to)/ from mandatorily redeemable capital stock	(899)	1	(11)	—	(1)	(27)	(74)
Dividends of capital stock	83	—	—	—	—	—	—
Dividends							
Cash	(926)	—	(19)	(244)	(64)	(103)	(53)
Stock	(83)	—	—	—	—	—	—
Balance, December 31, 2021	\$ 49,122	\$ 1	\$ 2,531	\$ 6,446	\$ 2,734	\$ 4,595	\$ 3,796

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF CAPITAL (continued)

YEARS ENDED DECEMBER 31, 2021, 2020, AND 2019

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Balance, December 31, 2018	\$ 3,050	\$ 5,289	\$ 7,548	\$ 3,765	\$ 2,454	\$ 6,530
Adjustment for cumulative effect of accounting changes	—	16	—	—	—	—
Comprehensive income (loss)	168	216	344	198	194	366
Proceeds from issuance of capital stock	194	2,423	7,205	1,549	1,406	1,186
Repurchases/redemptions of capital stock	—	(2,398)	(8,091)	(1,712)	(979)	(1,129)
Net shares reclassified (to)/ from mandatorily redeemable capital stock	(151)	(10)	(11)	(2)	(283)	(6)
Dividends of capital stock	—	—	—	76	99	—
Dividends						
Cash	(104)	(82)	(269)	—	—	(206)
Stock	—	—	—	(76)	(99)	—
Balance, December 31, 2019	3,157	5,454	6,726	3,798	2,792	6,741
Adjustment for cumulative effect of accounting change	—	(7)	1	(2)	(6)	(3)
Partial recovery of prior capital distribution to Financing Corporation	11	19	26	18	11	40
Comprehensive income (loss)	125	610	366	147	135	291
Proceeds from issuance of capital stock	267	1,725	3,376	1,314	2,115	789
Repurchases/redemptions of capital stock	—	(1,427)	(4,545)	(1,656)	(280)	(1,465)
Net shares reclassified (to)/ from mandatorily redeemable capital stock	(33)	(1)	(7)	(61)	(2,099)	(40)
Dividends of capital stock	—	—	—	38	71	—
Dividends						
Cash	(77)	(84)	(203)	(1)	—	(159)
Stock	—	—	—	(38)	(71)	—
Balance, December 31, 2020	3,450	6,289	5,740	3,557	2,668	6,194
Comprehensive income (loss)	122	410	242	299	192	388
Proceeds from issuance of capital stock	99	689	2,763	1,460	1,685	1,409
Repurchases/redemptions of capital stock	(56)	(544)	(2,659)	(1,382)	(1,159)	(1,607)
Net shares reclassified (to)/ from mandatorily redeemable capital stock	(5)	(6)	(81)	—	(670)	(25)
Dividends of capital stock	—	—	—	14	69	—
Dividends						
Cash	(54)	(86)	(167)	—	(1)	(135)
Stock	—	—	—	(14)	(69)	—
Balance, December 31, 2021	\$ 3,556	\$ 6,752	\$ 5,838	\$ 3,934	\$ 2,715	\$ 6,224

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES

STATEMENTS OF CASH FLOWS

YEAR ENDED DECEMBER 31, 2021

<i>(dollars in millions)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Operating activities							
Net cash provided by (used in) operating activities	\$ 7,369	\$ (1)	\$ 381	\$ 888	\$ 387	\$ 845	\$ 578
Investing activities							
Net change/net proceeds and payments in							
Investments	(3,547)	(10)	(3,631)	8,545	(1,864)	4,820	(2,184)
Advances	66,302	(1)	6,360	19,526	10,645	5,749	2,053
Mortgage loans held for portfolio	6,783	1	790	571	177	70	1,869
Other investing activities	(50)	—	(1)	(19)	(1)	(5)	(1)
Net cash provided by (used in) investing activities	69,488	(10)	3,518	28,623	8,957	10,634	1,737
Financing activities							
Net change in deposits and pass-through reserves, and other financing activities	(1,034)	6	(205)	(537)	163	56	89
Net proceeds (payments) on derivative contracts with financing element	15	(1)	32	(3)	—	(6)	—
Net proceeds from issuance of consolidated obligations							
Discount notes	3,314,895	1	262,647	693,791	172,798	594,146	193,535
Bonds	429,963	—	19,102	49,961	23,090	40,803	33,771
Consolidated obligation bonds transferred from other FHLBanks	—	(174)	—	174	—	—	—
Payments for maturing and retiring consolidated obligations							
Discount notes	(3,378,712)	1	(273,249)	(709,198)	(171,813)	(594,018)	(191,191)
Bonds	(459,861)	1	(13,572)	(64,462)	(33,704)	(53,689)	(41,133)
Consolidated obligation bonds transferred to other FHLBanks	—	174	(174)	—	—	—	—
Proceeds from issuance of capital stock	14,273	—	241	2,647	846	1,325	1,109
Payments for repurchases/redemptions of capital stock	(15,790)	(1)	(544)	(3,513)	(1,146)	(1,993)	(1,186)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(1,273)	1	(3)	(1)	(122)	(26)	(72)
Cash dividends paid	(926)	—	(19)	(244)	(64)	(103)	(53)
Net cash provided by (used in) financing activities	(98,450)	8	(5,744)	(31,385)	(9,952)	(13,505)	(5,131)
Net increase (decrease) in cash and due from banks	(21,593)	(3)	(1,845)	(1,874)	(608)	(2,026)	(2,816)
Cash and due from banks at beginning of the period	25,125	1	2,050	1,896	1,036	2,905	2,984
Cash and due from banks at end of the period	\$ 3,532	\$ (2)	\$ 205	\$ 22	\$ 428	\$ 879	\$ 168

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF CASH FLOWS (continued)

YEAR ENDED DECEMBER 31, 2021

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Operating activities						
Net cash provided by (used in) operating activities	\$ 443	\$ 732	\$ 587	\$ 944	\$ 544	\$ 1,041
Investing activities						
Net change/net proceeds and payments in						
Investments	(49)	751	(1,772)	(7,770)	1,046	(1,429)
Advances	3,382	(1,887)	1,949	7,503	(2,457)	13,480
Mortgage loans held for portfolio	698	114	621	(96)	1,017	951
Other investing activities	(4)	(15)	(2)	(6)	4	—
Net cash provided by (used in) investing activities	4,027	(1,037)	796	(369)	(390)	13,002
Financing activities						
Net change in deposits and pass-through reserves, and other financing activities	(9)	(250)	(48)	4	(283)	(20)
Net proceeds (payments) on derivative contracts with financing element	(25)	—	—	76	(23)	(35)
Net proceeds from issuance of consolidated obligations						
Discount notes	291,173	402,576	325,463	34,662	265,126	78,977
Bonds	43,152	46,604	65,424	50,150	40,018	17,888
Consolidated obligation bonds transferred from other FHLBanks	—	—	—	—	—	—
Payments for maturing and retiring consolidated obligations						
Discount notes	(295,669)	(426,653)	(330,458)	(45,826)	(269,440)	(71,198)
Bonds	(43,819)	(25,489)	(62,280)	(42,347)	(39,950)	(39,417)
Consolidated obligation bonds transferred to other FHLBanks	—	—	—	—	—	—
Proceeds from issuance of capital stock	99	689	2,763	1,460	1,685	1,409
Payments for repurchases/redemptions of capital stock	(56)	(544)	(2,659)	(1,382)	(1,159)	(1,607)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(206)	(38)	(104)	(7)	(671)	(24)
Cash dividends paid	(54)	(86)	(167)	—	(1)	(135)
Net cash provided by (used in) financing activities	(5,414)	(3,191)	(2,066)	(3,210)	(4,698)	(14,162)
Net increase (decrease) in cash and due from banks	(944)	(3,496)	(683)	(2,635)	(4,544)	(119)
Cash and due from banks at beginning of the period	1,812	3,541	978	3,178	4,570	174
Cash and due from banks at end of the period	\$ 868	\$ 45	\$ 295	\$ 543	\$ 26	\$ 55

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES

STATEMENTS OF CASH FLOWS

YEAR ENDED DECEMBER 31, 2020

<i>(dollars in millions)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Operating activities							
Net cash provided by (used in) operating activities	\$ (461)	\$ (3)	\$ (180)	\$ (111)	\$ 2,449	\$ (441)	\$ (6)
Investing activities							
Net change/net proceeds and payments in							
Investments	70,119	5	3,275	16,940	5,702	13,911	7,525
Advances	223,354	2	15,880	9,655	40,715	45,866	22,258
Mortgage loans held for portfolio	9,200	—	545	255	202	78	1,599
Other investing activities	(88)	(1)	—	(24)	—	(6)	(2)
Net cash provided by (used in) investing activities	302,585	6	19,700	26,826	46,619	59,849	31,380
Financing activities							
Net change in deposits and pass-through reserves, and other financing activities	5,010	(2)	414	628	343	480	372
Net proceeds (payments) on derivative contracts with financing element	(514)	(2)	(76)	(6)	—	(5)	(11)
Net proceeds from issuance of consolidated obligations							
Discount notes	4,135,082	1	100,524	952,058	259,822	387,294	275,315
Bonds	505,445	2	12,288	69,673	42,113	70,124	37,753
Consolidated obligation bonds transferred from other FHLBanks	—	(1,006)	—	1,006	—	—	—
Payments for maturing and retiring consolidated obligations							
Discount notes	(4,263,664)	(1)	(115,288)	(968,276)	(273,411)	(413,915)	(296,851)
Bonds	(654,260)	2	(13,717)	(79,761)	(75,032)	(99,271)	(44,194)
Consolidated obligation bonds transferred to other FHLBanks	—	1,006	(1,006)	—	—	—	—
Proceeds from issuance of capital stock	27,498	(1)	2,157	5,641	2,902	5,078	2,135
Payments for repurchases/redemptions of capital stock	(31,837)	—	(2,758)	(6,050)	(4,390)	(6,966)	(2,300)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(3,475)	—	—	(5)	(240)	(23)	(564)
Cash dividends paid	(1,444)	—	(81)	(348)	(169)	(239)	(83)
Partial recovery of prior capital distribution to Financing Corporation	200	(2)	4	18	9	29	17
Net cash provided by (used in) financing activities	(281,959)	(3)	(17,539)	(25,422)	(48,053)	(57,414)	(28,411)
Net increase (decrease) in cash and due from banks	20,165	—	1,981	1,293	1,015	1,994	2,963
Cash and due from banks at beginning of the period	4,960	1	69	603	21	911	21
Cash and due from banks at end of the period	\$ 25,125	\$ 1	\$ 2,050	\$ 1,896	\$ 1,036	\$ 2,905	\$ 2,984

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF CASH FLOWS (continued)

YEAR ENDED DECEMBER 31, 2020

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Operating activities						
Net cash provided by (used in) operating activities	\$ (317)	\$ (315)	\$ 59	\$ (582)	\$ (114)	\$ (900)
Investing activities						
Net change/net proceeds and payments in						
Investments	(65)	(39)	6,972	9,210	2,939	3,744
Advances	1,581	4,301	34,097	5,033	9,216	34,750
Mortgage loans held for portfolio	2,316	(119)	1,050	613	1,347	1,314
Other investing activities	(5)	(38)	(6)	(6)	3	(3)
Net cash provided by (used in) investing activities	3,827	4,105	42,113	14,850	13,505	39,805
Financing activities						
Net change in deposits and pass-through reserves, and other financing activities	415	439	803	304	439	375
Net proceeds (payments) on derivative contracts with financing element	(4)	(1)	—	(229)	(13)	(167)
Net proceeds from issuance of consolidated obligations						
Discount notes	355,337	760,865	178,910	122,490	630,992	111,474
Bonds	48,663	39,750	42,545	39,908	47,969	54,657
Consolidated obligation bonds transferred from other FHLBanks	—	—	—	—	—	—
Payments for maturing and retiring consolidated obligations						
Discount notes	(356,372)	(753,826)	(181,023)	(134,595)	(647,522)	(122,584)
Bonds	(50,053)	(47,690)	(81,951)	(38,610)	(42,350)	(81,633)
Consolidated obligation bonds transferred to other FHLBanks	—	—	—	—	—	—
Proceeds from issuance of capital stock	267	1,725	3,376	1,314	2,115	789
Payments for repurchases/redemptions of capital stock	—	(1,427)	(4,545)	(1,656)	(280)	(1,465)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(105)	(48)	(161)	(54)	(2,099)	(176)
Cash dividends paid	(77)	(84)	(203)	(1)	—	(159)
Partial recovery of prior capital distribution to Financing Corporation	11	19	26	18	11	40
Net cash provided by (used in) financing activities	(1,918)	(278)	(42,223)	(11,111)	(10,738)	(38,849)
Net increase (decrease) in cash and due from banks	1,592	3,512	(51)	3,157	2,653	56
Cash and due from banks at beginning of the period	220	29	1,029	21	1,917	118
Cash and due from banks at end of the period	\$ 1,812	\$ 3,541	\$ 978	\$ 3,178	\$ 4,570	\$ 174

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES

STATEMENTS OF CASH FLOWS

YEAR ENDED DECEMBER 31, 2019

<i>(dollars in millions)</i>	Combined	Combining Adjustments	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Operating activities							
Net cash provided by (used in) operating activities	\$ (3,325)	\$ 2	\$ (108)	\$ 11	\$ (2,362)	\$ (200)	\$ (37)
Investing activities							
Net change/net proceeds and payments in							
Loans to FHLBanks	—	(750)	—	250	—	500	—
Investments	(64,593)	(18)	(204)	(21,650)	(2,126)	(6,374)	(817)
Advances	90,581	1	8,685	5,037	17,158	11,964	7,608
Mortgage loans held for portfolio	(10,154)	(1)	(214)	(252)	(672)	63	(770)
Other investing activities	(64)	1	—	(18)	3	(2)	(2)
Net cash provided by (used in) investing activities	15,770	(767)	8,267	(16,633)	14,363	6,151	6,019
Financing activities							
Net change in deposits and pass-through reserves, and other financing activities	2,578	15	200	62	189	332	275
Net change in loans from FHLBanks	—	750	—	—	—	—	—
Net proceeds (payments) on derivative contracts with financing element	(149)	(1)	(48)	(17)	—	(3)	(1)
Net proceeds from issuance of consolidated obligations							
Discount notes	6,633,748	2	144,030	1,272,193	454,063	845,325	823,242
Bonds	614,243	—	10,851	99,474	69,344	115,624	27,927
Consolidated obligation bonds transferred from other FHLBanks	—	(13)	—	—	—	—	13
Payments for maturing and retiring consolidated obligations							
Discount notes	(6,655,363)	—	(149,401)	(1,248,877)	(467,768)	(859,116)	(821,076)
Bonds	(597,239)	—	(12,910)	(105,041)	(66,961)	(106,415)	(35,192)
Consolidated obligation bonds transferred to other FHLBanks	—	13	(13)	—	—	—	—
Proceeds from issuance of capital stock	40,230	3	1,854	8,280	6,451	9,087	592
Payments for repurchases/redemptions of capital stock	(43,550)	(1)	(2,514)	(8,563)	(7,061)	(9,564)	(1,538)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(559)	(1)	(26)	(5)	(42)	(21)	(8)
Cash dividends paid	(1,946)	—	(123)	(366)	(267)	(324)	(205)
Net cash provided by (used in) financing activities	(8,007)	767	(8,100)	17,140	(12,052)	(5,075)	(5,971)
Net increase (decrease) in cash and due from banks	4,438	2	59	518	(51)	876	11
Cash and due from banks at beginning of the period	522	(1)	10	85	72	35	10
Cash and due from banks at end of the period	\$ 4,960	\$ 1	\$ 69	\$ 603	\$ 21	\$ 911	\$ 21

FEDERAL HOME LOAN BANKS CONDENSED COMBINING SCHEDULES STATEMENTS OF CASH FLOWS (continued)

YEAR ENDED DECEMBER 31, 2019

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Operating activities						
Net cash provided by (used in) operating activities	\$ (131)	\$ (143)	\$ 233	\$ (496)	\$ 57	\$ (151)
Investing activities						
Net change/net proceeds and payments in						
Loans to FHLBanks	—	—	—	—	—	—
Investments	(2,492)	(6,066)	(6,514)	(3,648)	(9,751)	(4,933)
Advances	558	2,481	26,228	3,848	(1,394)	8,407
Mortgage loans held for portfolio	572	(2,924)	(1,519)	(1,901)	(2,251)	(285)
Other investing activities	(6)	5	(6)	(4)	3	(38)
Net cash provided by (used in) investing activities	(1,368)	(6,504)	18,189	(1,705)	(13,393)	3,151
Financing activities						
Net change in deposits and pass-through reserves, and other financing activities	379	309	5	316	240	256
Net change in loans from FHLBanks	—	—	(500)	—	—	(250)
Net proceeds (payments) on derivative contracts with financing element	2	1	—	(169)	5	82
Net proceeds from issuance of consolidated obligations						
Discount notes	342,746	1,368,607	121,189	299,435	818,116	144,800
Bonds	40,242	44,693	66,684	39,246	24,700	75,458
Consolidated obligation bonds transferred from other FHLBanks	—	—	—	—	—	—
Payments for maturing and retiring consolidated obligations						
Discount notes	(345,937)	(1,370,102)	(134,448)	(300,796)	(811,278)	(146,564)
Bonds	(35,903)	(36,790)	(69,227)	(35,680)	(16,687)	(76,433)
Consolidated obligation bonds transferred to other FHLBanks	—	—	—	—	—	—
Proceeds from issuance of capital stock	194	2,423	7,205	1,549	1,406	1,186
Payments for repurchases/redemptions of capital stock	—	(2,398)	(8,091)	(1,712)	(979)	(1,129)
Payments for repurchases/redemptions of mandatorily redeemable capital stock	(1)	(13)	(60)	(2)	(285)	(95)
Cash dividends paid	(104)	(82)	(269)	—	—	(206)
Net cash provided by (used in) financing activities	1,618	6,648	(17,512)	2,187	15,238	(2,895)
Net increase (decrease) in cash and due from banks	119	1	910	(14)	1,902	105
Cash and due from banks at beginning of the period	101	28	119	35	15	13
Cash and due from banks at end of the period	\$ 220	\$ 29	\$ 1,029	\$ 21	\$ 1,917	\$ 118

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SUPPLEMENTAL INFORMATION

FHLBank Management and Compensation (Unaudited)

FHLBank Directors

A board of 13 Directors, or such other number as the Federal Housing Finance Agency (FHFA) determines appropriate, governs each FHLBank. The members of each FHLBank elect all of the FHLBank's Directors, each of whom is elected for a four-year term, unless otherwise adjusted by the Director of the FHFA in order to achieve an appropriate staggering of terms (with approximately one-fourth of the Directors' terms expiring each year). Directors may not serve more than three consecutive full terms. An FHLBank's Board of Directors must be comprised of a majority of member Directors, who are Directors or Officers of members, and a minority of Independent Directors. Independent Directors must comprise not less than two-fifths of the members of the Board of Directors and two of these Directors must hold public interest Director positions.

To be eligible to serve as a member Director, a candidate must be a citizen of the United States and be an Officer or Director of a member institution that is located in the state to which the Director of the FHFA has allocated the directorship and that meets all of the minimum capital requirements established by its appropriate regulator. For member Directors, each eligible institution may nominate representatives from member institutions in its respective state to serve on the Board of the Directors. After the slate of nominees is finalized, each eligible institution may vote for the number of open member Director seats in the state in which its principal place of business is located.

To be eligible to serve as an Independent Director, an individual must be a citizen of the United States and a bona fide resident of that FHLBank's district. To be elected, a candidate must receive at least 20% of the votes that are eligible to be cast unless there are multiple nominees. The FHFA will impose the FHLBank Act's requirements on newly elected Independent Directors. An Independent Director may not be an officer of any FHLBank, or an Officer, Director, or employee of an FHLBank member on whose board the individual sits or of any recipient of advances from an FHLBank. Under the Federal Home Loan Bank Act of 1932, as amended (FHLBank Act), there are two types of Independent Directors:

- *Public Interest Director.* Each FHLBank is required to have at least two public interest Directors. Before names are placed on the ballot, nominee eligibility will be verified through application and eligibility certification forms prescribed by the FHFA. Public interest Directors must have more than four years' experience in representing consumer or community interests in banking services, credit needs, housing, or consumer financial protections.
- *Other Independent Directors.* Independent Directors shall have experience in, or knowledge of, one or more of the following areas: auditing and accounting, derivatives, financial management, organizational management, project development, risk management practices, and the law.

Eligible members nominate representatives from members in their state to serve as member Directors. Potential Independent Directors may express their interest in being nominated to the FHLBank, or may be recommended by a third party to be nominated, with each FHLBank's Board of Directors determining the slate of nominees. For the election of both member Directors and Independent Directors, each eligible institution is entitled to cast one vote for each share of stock that it was required to hold as of December 31 of the calendar year immediately preceding the election year (the record date). The number of votes that any member may cast for any one directorship shall not exceed the average number of shares of stock required to be held as of the record date by all member institutions located in the member's state as of the record date.

The Board of Directors of each FHLBank has the responsibility to establish policies and programs that carry out the FHLBank's housing finance mission. Each Board of Directors adopts and reviews policies governing the FHLBank's

credit, investment, and funding activities, and oversees the implementation of these policies. The Directors also must adopt policies to manage the FHLBank's exposure to credit, liquidity, and interest-rate risk. In addition, each Board of Directors is responsible for monitoring that FHLBank's compliance with FHFA regulations.

The following persons are currently serving as Chair or Vice-Chair of an FHLBank and the following information has been provided for each FHLBank primarily based on the information disclosed in its annual report on SEC Form 10-K for the year ended December 31, 2021:

Donna L. Boulanger, 68, is serving as Chair of the Board of Directors of the FHLBank of Boston. Ms. Boulanger has served as Chief Executive Officer and Director (formerly Trustee) of North Brookfield Savings Bank, located in North Brookfield, Massachusetts, since February 2008, and also served as its President from February 2008 through April 5, 2021. Since January 2022, she has also served as a Director and Trustee, respectively, of its holding companies, TruNorth Bancorp, Inc. and TruNorth Bancorp, MHC. Ms. Boulanger also currently serves on the Board of Directors of the Depositors Insurance Fund, a Bank member. Ms. Boulanger began serving as a Director of the FHLBank of Boston on January 1, 2014, and her current term will conclude on December 31, 2025.

Eric Chatman, 61, is serving as Vice-Chair of the Board of Directors of the FHLBank of Boston. Mr. Chatman served as the Executive Vice President and Chief Financial Officer of Housing Partnership Network, a network of affordable housing and community development nonprofits, since July 2017. Mr. Chatman founded and was President of The Chatman Group, LLC, a consulting and advisory firm focused on affordable housing and financial advisory services for non-profits, housing finance authorities, and financial institutions from June 2015 to July 2017. Mr. Chatman served as President and Executive Director of the Connecticut Housing Finance Authority from May 2012 until March 2015 and, in that capacity, was responsible for the policy development, strategic planning and execution of the Connecticut Housing Finance Authority affordable housing finance mission. Prior to serving in that role, Mr. Chatman served as Deputy Director and Chief Financial Officer of the Iowa Finance Authority from 2008 to 2012. Mr. Chatman has also held various corporate finance, treasury, and capital markets roles, both domestic and international, including Treasurer of the Federal Home Loan Bank of Des Moines and Division Manager, Treasury Department, at the African Development Bank. Mr. Chatman has served as a Director of the FHLBank of Boston since June 16, 2014, and his current term will conclude on December 31, 2023.

John R. Buran, 72, is serving as Chair of the Board of Directors of the FHLBank of New York. Mr. Buran is Director, President and Chief Executive Officer of Flushing Financial Corporation, the holding company for FHLBank of New York member Flushing Bank (formerly Flushing Savings Bank), and of Flushing Bank. He joined the holding company and the bank in 2001 as Chief Operating Officer and he became a Director of these entities in 2003. In 2005, he was named President and Chief Executive Officer of both entities. Mr. Buran's career in the banking industry began with Citibank in 1977. There, he held a variety of management positions including Business Manager of its retail distribution in Westchester, Long Island and Manhattan and Vice President in charge of its Investment Sales Division. Mr. Buran left Citibank to become Senior Vice President, Division Head for Retail Services of NatWest Bank and later Executive Vice President of Fleet Bank's (now Bank of America) retail branch system in New York City, Long Island, Westchester and Southern Connecticut. He also spent time as a consultant and Assistant to the President of Carver Bank. Mr. Buran is past Chair and current Board member of the New York Bankers Association. From 2011 to 2017, he served on the Community Depository Institutions Advisory Council of The Federal Reserve Bank of New York. He is also a former member of the Nassau County Interim Finance Authority, where he served for eight years. Mr. Buran has devoted his time to a variety of charitable and not-for-profit organizations. He has been a Board member of the Long Island Association, both the Nassau and Suffolk County Boy Scouts, EAC, Long Island University, the Long Island Philharmonic and Channel 21. He was the fundraising Chair for the Suffolk County Vietnam Veteran's War Memorial in Farmingville, New York and has been recipient of the Boy Scouts' Chief Scout Citizen Award. His work in the community has been recognized by Family and Children's Association, and Gurwin Jewish Geriatric Center. He was also a recipient of the Long Island Association's SBA Small Business Advocate Award. Mr. Buran was honored twice with St. Joseph's College's Distinguished Service Award. Mr. Buran also serves on the Advisory Board and is a former Board President of

Neighborhood Housing Services of New York City. He is a Board member of The Korean American Youth Foundation. Mr. Buran also serves on the Board of the Long Island Conservatory. He was recently presented with an honorary Doctorate of Humane Letters from St. Francis College of Brooklyn and was the recipient of the Catholic Charities Gold Medal Award in 2019. He holds a B.S. in Management and an M.B.A., both from New York University.

Larry E. Thompson, 71, is serving as Vice-Chair of the Board of Directors of the FHLBank of New York. Mr. Thompson was Vice Chair of The Depository Trust & Clearing Corporation (DTCC) through the end of 2018, and previously served as the Chief Legal Officer/General Counsel of the firm since 2005. He has more than 30 years of experience as a senior executive in corporate law, risk management and regulatory affairs. In his role as DTCC Vice-Chair, Mr. Thompson served as a senior advisor to DTCC and was responsible for all legal and regulatory activities of the company and its subsidiaries. He regularly interfaced with government and regulatory agencies on issues impacting the company. Mr. Thompson was Chair of the Board of DTCC Deriv/SERV LLC and former Chair of the DTCC Operating Committee. He was a member of the DTCC Management Committee, which is comprised of the company's executive leadership. In addition, Mr. Thompson was a member of the DTCC Management Risk Committee, where he helped oversee and assess a broad range of issues related to market, capital and operational risks facing the corporation. Mr. Thompson previously served as Chair of a DTCC Board subcommittee charged with reviewing the potential risk impacts of high frequency trading and algorithmic trading as a result of the Knight Capital market event of 2012. Mr. Thompson is the former Co-Chair of the DTCC Internal Risk Management Committee and former Chair of The Depository Trust Company (DTC) Internal Risk Management Committee. Mr. Thompson began his legal career with DTC as Associate Counsel in 1981 and was elected Vice President and Deputy General Counsel in 1991, Senior Vice President in 1993, General Counsel of DTC in 1999 and Managing Director and First Deputy General Counsel of DTCC in 2004. Previously, he was a partner in the New York law firm of Lake, Bogan, Lenoir, Jones & Thompson. Mr. Thompson began his legal career at Davis Polk & Wardwell. Mr. Thompson previously served on the Board of Directors of New York Portfolio Clearing, a former joint venture derivatives clearinghouse owned by NYSE Euronext and DTCC. He is currently the Chair of the Board of Directors of both LedgerX LLC, a digital currency futures and options exchange and clearinghouse, and its parent, Leger Holdings Inc. He also serves on the Board of Professional Advisors of the firm Risk Toolbox, Inc. In addition, he also served as former Chair of the Securities Clearing Group and former Co-Chair of the Unified Clearing Group. His memberships include the New York State Bar Association; the New York County Lawyers' Association; Association of the Bar of the City of New York; Business Executives for National Security; and the Global Association of Risk Professionals. He is a former Director of the Legal Aid Society of New York and a former Director of The Studio Museum of Harlem. Mr. Thompson received his B.A. from Yale University and his J.D. from the University of California at Berkeley.

William C. Marsh, 55, is serving as the Chair of the Board of Directors of the FHLBank of Pittsburgh. He joined the Board of Directors of the FHLBank of Pittsburgh in January 2012. Since January 2009 he has been Chair of the Board, President and Chief Executive Officer of Emclair Financial Corp. and The Farmers National Bank of Emlenton. Prior to that he served as Executive Vice President and Chief Financial Officer of these entities since June 2006. Mr. Marsh has served as the chief financial officer and executive of a number of publicly-traded bank holding companies since 1994. Prior to that he served as an audit manager with the international accounting firm, KPMG. Mr. Marsh is a CPA. Mr. Marsh was elected Board Chair for the term January 1, 2022 through December 31, 2023. Mr. Marsh is a voting member of the Executive Committee, Enterprise Risk Management Committee, and the Diversity, Equity & Inclusion Committee and serves as a non-voting ex officio member of each other standing Board Committee. Mr. Marsh serves as an FHLBank Pittsburgh representative on the Council of FHLBanks.

Louise M. Herrle, 64, is serving as Vice-Chair of the Board of Directors of the FHLBank of Pittsburgh. Ms. Herrle joined the Board of Directors of the FHLBank of Pittsburgh in September 2018. Ms. Herrle is a senior corporate finance executive with extensive experience in developing and leading innovative global debt finance programs and in capital market risk management. Most recently, Ms. Herrle was the Managing Director of Capital Markets

for Incapital, LLC and retired from that position in 2019. In addition, she has provided financial advisory services to Fortune 100 companies and was the leading architect of a financing platform for social impact investments. Ms. Herrle has received multiple awards for excellence in corporate financing and was a featured speaker for industry events and conferences throughout her career. She is the former Executive Board Chair of Strong Women, Strong Girls, Inc. and continues to serve on the Finance Committee, as an advisor for Strategic Planning, and is a member of the Emeritus Board. Other board positions include serving on the Advisory Board of Power Forward Inc. and as a Cabinet Member of the Capital Campaign for the Light of Light Rescue Mission. Ms. Herrle received her BSBA degree from Robert Morris College, holds a Series 79 and Series 66 license, and in 2020 became a National Association of Corporate Directors (NACD) Directorship Certified. Ms. Herrle was re-elected as Board Vice-Chair for the term January 1, 2022 through December 31, 2023. Ms. Herrle is a voting member of the Executive Committee, Enterprise Risk Management Committee, and the Diversity, Equity & Inclusion Committee and serves as a non-voting ex officio member of each other standing Board Committee. Ms. Herrle is an FHLBank of Pittsburgh representative on the Council of Federal Home Loan Banks.

Richard A. Whaley, 62, became Chair of the Board of Directors of the FHLBank of Atlanta on January 1, 2019, and previously served as Vice-Chair from 2015-2018. He has served as President, Chief Executive Officer, and Director of Citizens Bank of Americus in Americus, Georgia, since 2001. From 1989 to 2001, he served as Market Manager and Commercial Lender for Wachovia Bank. Mr. Whaley served as Chair of the Georgia Bankers Association from October 2010 to June 2012. Mr. Whaley also served as Chair of the South Georgia Technical College Foundation from 2008 to 2010. He serves as Chair of the Georgia Bankers Association Insurance Trust, Inc., and is a veteran of the U.S. Army. Mr. Whaley served as Chair of the Council of Federal Home Loan Banks in 2020. He holds a B.S. in Political Science from Georgia Southwestern State University and completed the Executive Management program at the University of North Carolina.

R. Thornwell Dunlap III, 64, became Vice-Chair of the Board of Directors of the FHLBank of Atlanta on January 1, 2022. He has served as President, Chief Executive Officer of Countybank since 1995 and Chair of its holding company, TCB Corporation (TCB), since 2001. In his capacity as Chair of TCB, Mr. Dunlap is a director of Greenwood Capital Associates, LLC, a registered investment advisory firm, owned by the TCB. He is the past Chair of the South Carolina Bankers Association and is a past Chair of the Independent Banks of South Carolina. Mr. Dunlap is the past Chair of the Greenwood Partnership Alliance and served on the Piedmont Technical College Foundation Board of Directors. He has served on the Ten at the Top Board of Directors since 2009 and is a founding director. Mr. Dunlap is a member and past Chair of the Greenwood Rotary Club. He has a Bachelor of Business Administration from Oglethorpe University.

J. Lynn Anderson, 58, has served as Chair of the Board of Directors of the FHLBank of Cincinnati since January 2021. Ms. Anderson served as President of Nationwide Bank from November 2009 to March 2016. Prior to retiring, she served as Senior Vice President-Member Solutions Integration for Nationwide Mutual Insurance Company from March 2016 to December 2016. Ms. Anderson received her Bachelor of Science in Business Administration with an emphasis in Accounting from The Ohio State University, and is a Certified Public Accountant and Certified Internal Auditor. Ms. Anderson has over 10 years of experience serving on the Board of National Church Residences, a leading national non-profit provider of senior housing. Ms. Anderson's leadership positions within the banking and insurance industries contribute skills to the FHLBank of Cincinnati's Board in the areas of auditing and accounting, operations, and corporate governance. In addition, her non-profit housing experience provides public interest viewpoints that connect to the FHLBank of Cincinnati's mission.

James J. Vance, 60, became Vice-Chair of the Board of Directors of the FHLBank of Cincinnati on January 1, 2022. Mr. Vance has been Senior Vice President and Co-Chief Investment Officer of Western-Southern Life Assurance Company and related subsidiaries (Cincinnati, Ohio) since October 2020. Previously, he served as Senior Vice President and Treasurer of Western-Southern Life Assurance Company and related subsidiaries from March 2016 to October 2020 and as Vice President and Treasurer from 1999 to March 2016. Mr. Vance earned a Bachelor of

Arts in Business Administration from Wittenberg University, and a Master of Business Administration degree in finance from Indiana University. Mr. Vance also holds a J.D. degree in law from the University of Cincinnati.

Dan L. Moore, 71, has served as the Chair of the Board of Directors of the FHLBank of Indianapolis since 2019. Mr. Moore joined the Board of Directors of the FHLBank Indianapolis in 2011. Mr. Moore is the Chair of Home Bank SB in Martinsville, Indiana, and has served in that position only since 2021. Previously, he served as its Chair, President, and CEO from 2020 to 2021, after having served as its President, CEO, and Director beginning in 2006. Prior to that time, Mr. Moore served as that bank's Executive Vice President and Chief Operating Officer. Mr. Moore has been employed by Home Bank SB since 1978. Mr. Moore holds an appointed position on the Mutual Institution Advisory Board of the Office of the Comptroller of the Currency. He also serves on the Board of Directors of Stability First, a not-for-profit organization in Martinsville, Indiana, established to address issues associated with the alleviation of poverty. He also sits on the Board of Hoosier Voices for I-69, a public advocacy group. Mr. Moore holds a bachelor's degree from Indiana State University and a master of science degree in management from Indiana Wesleyan University. He currently serves as the Chair of the Council of Federal Home Loan Banks.

Karen F. Gregerson, 61, is serving as the Vice-Chair of the Board of Directors of the FHLBank of Indianapolis. Ms. Gregerson joined the Board of Directors of the FHLBank of Indianapolis in 2013. Ms. Gregerson is the President and CEO of The Farmers Bank in Frankfort, Indiana, and President of The Farmers Bancorp, a bank holding company in Frankfort, Indiana, having been appointed to those positions in 2016. She is also a Director of both entities. Prior to those appointments, Ms. Gregerson was Senior Vice President and Chief Financial Officer of STAR Financial Bank in Fort Wayne, Indiana, a position she held beginning in 1997. She also serves as a Director of the Indiana Statewide Certified Development Corporation. Ms. Gregerson holds a bachelor of science degree in accounting from Ball State University and a master of science degree in organizational leadership from the Indiana Institute of Technology. She maintains her CPA designation. The Board of Directors of the FHLBank of Indianapolis has determined that Ms. Gregerson is an Audit Committee Financial Expert due primarily to her experience as a Director, CEO, and CFO of a commercial bank, and as a CPA.

James T. Ashworth, 70, became Chair of the Board of Directors of the FHLBank of Chicago on January 1, 2022 and previously served as Vice-Chair. Mr. Ashworth joined CNB Bank & Trust, N.A. in 1978 and has served in many capacities, including as Vice Chair since 1989 and as President and CEO from 1989 to 1997, as well as serving as Vice-Chair and President and CEO of its holding company, CNB Bank Shares, Inc. since 1989. Mr. Ashworth served as Chair of the Community Bankers Association of Illinois (CBAI) and as an elected director of the Independent Community Bankers of America, on the state association's Legislative Committee and the national association's Regulation Review Committee; he was named CBAI's "Outstanding Member" in 1995. He also has previously served on the Illinois State Treasurer's Community Bank Advisory Council and as an appointed delegate to the White House Conference on Small Business. Mr. Ashworth earned a Bachelor of Science degree from the University of Miami, and is a graduate of the Graduate School of Banking in Madison, Wisconsin, as well as its post-graduate program. Mr. Ashworth has also served on numerous local boards, including a community hospital, a chamber of commerce, an economic development corporation, and a community foundation.

Joseph Fazio III, 60, became Vice-Chair of the Board of Directors of the FHLBank of Chicago on January 1, 2022. Mr. Fazio is Co-founder, Board Chair and CEO of Commerce State Bank, which opened in 2005 and ended 2021 with more than \$800 million in total assets. Mr. Fazio is the only CEO Commerce State Bank has had. Mr. Fazio also serves as a Director of the bank's holding company, Commerce Financial Holdings, Inc. Prior to founding Commerce State Bank, Mr. Fazio led a privately-held marketing company from 2002 to 2004, was Director of Corporate Marketing for Metavante (now FIS) from 1998 to 2002, led Personal Trust Administration for M&I Trust Company (now BMO) from 1995 to 1998, and held several management positions with IBM from 1983 to 1995. Mr. Fazio is a 1983 graduate of St. Norbert College, and in 1988 earned his master's degree from Edgewood College. He served as a member of the Board of Directors of the Wisconsin Bankers Association from 2013 to 2016. Mr. Fazio has served as an elected official for the City of Cedarburg and has held several city board

appointments. He is the past President of the Greater Cedarburg Community Foundation and Chaired the 2018 Washington County United Way Campaign. He has served on the boards of non-profits such as St. Francis Borgia School, Walker's Point Youth and Family Center, and the Cedarburg Athletic Booster Club. Mr. Fazio is currently President of the Wisconsin Chapter of the Private Directors Association, and a member of the National Association of Corporate Directors and is an NACD Board Leadership Fellow. Mr. Fazio is the author of the book, "This Might be a Dumb Question, but How Does Money Work?"

Ellen Z. Lamale, 68, became Chair of the Board of Directors of the FHLBank of Des Moines in January 2022, and previously served as Vice-Chair. Ms. Lamale retired from her position as Senior Vice President and Chief Risk Officer (CRO) of The Principal Financial Group (The Principal Financial Group is a registered trademark) (Principal) in March of 2011. Prior to her retirement, she served as Senior Vice President and CRO of Principal since 2008. Ms. Lamale held executive positions at Principal for more than 10 years, and her responsibilities during her 34-year career at Principal included risk management, financial analysis, capital management, strategic planning, and internal audit. She received a bachelor's and a master's degree in math from Ohio University and a master's degree in actuarial science from University of Michigan. Ms. Lamale is a Fellow of the Society of Actuaries, a member of the American Academy of Actuaries, and a Chartered Enterprise Risk Analyst. Ms. Lamale has served on several community boards, including West Des Moines Youth Soccer Club, Iowa United Soccer Club, Des Moines Symphony Second Strings, and Des Moines Public Library Foundation. Currently, she is a volunteer with the West Des Moines Youth Justice Initiative. Ms. Lamale's involvement in and knowledge of accounting, auditing, finance, and risk management, as indicated by her background, support her qualifications to serve as an Independent Director on the Board of Directors of the FHLBank of Des Moines. She currently serves as Chair of the Executive and Governance Committee of the FHLBank of Des Moines' Board of Directors.

Karl Bollingberg, 59, became Vice-Chair of the Board of Directors of the FHLBank of Des Moines in January 2022. Mr. Bollingberg has served as Loan Participation Advisor of Alerus Financial in Grand Forks, North Dakota since 2018. In his position as Loan Participation Advisor, Mr. Bollingberg is responsible for building a specialized line of business for Alerus in North Dakota and across the upper Midwest. Mr. Bollingberg previously served as Director of Lending from 2016 to 2018, as well as various other roles at Alerus since 1987. Mr. Bollingberg worked for U.S. Bank, N.A. from 1985 to 1987. Mr. Bollingberg is active in a number of civic organizations including Board Member and past Chair for the Regional Economic Development Corporation, Advisory Board Member and Vice Chair for the Bank of North Dakota, Board Member and past Chair of the Regional Airport Authority, and was Campaign Chairperson for the Community Violence and Intervention Center Shelter Project. He earned his bachelor's degree in agricultural economics from North Dakota State University and completed Louisiana State University School of Banking in 2000. Mr. Bollingberg's position as an officer of a member institution and his involvement in and knowledge of banking and business development, as indicated by his background, support his qualifications to serve on the Board of Directors of the FHLBank of Des Moines. He currently serves as the Vice-Chair of the Executive and Governance Committee.

Robert M. Rigby, 75, is Chair of the Board of Directors of the FHLBank of Dallas and has served in that capacity since January 1, 2021. He served as Vice-Chair of the Board of Directors of the FHLBank of Dallas from January 1, 2015 through December 31, 2020. Mr. Rigby serves as East Regional President, Executive Vice President for Legend Bank (a member of the FHLBank of Dallas) and has served in that capacity since December 1, 2017. Located in Fort Worth, Texas, Mr. Rigby has responsibility for Tarrant County and surrounding areas. Since June 2018, Mr. Rigby has also served as an Advisory Director for Legend Bank. From August 2008 through November 30, 2017, he served as an Advisory Director and Market President for Liberty Bank in North Richland Hills, Texas (a member of the FHLBank of Dallas). From 1998 to August 2008, Mr. Rigby served as a Director, President and Chief Executive Officer of Liberty Bank. Prior to joining Liberty Bank, Mr. Rigby served as a Director and Executive Vice President of First National Bank of Weatherford from 1980 to 1998. He previously served as an Advisory Director for the Texas Tech University School of Banking and is a former Vice-Chair of the North Richland Hills Economic Development Advisory Committee. He previously served on the BankPac Committee of the American Bankers Association and he is a past Chair of the Texas Bankers Association. Further, Mr. Rigby previously served on the Weatherford College

Board of Trustees, the Board of Directors of the Birdville ISD Education Foundation and as an Advisory Director for the North Texas Special Needs Assistance Partners. He is also a past Chair of the Northeast Tarrant Chamber of Commerce. Mr. Rigby currently serves on the Council of Federal Home Loan Banks and is a member of the Chair and Vice-Chair Committee of the Council of Federal Home Loan Banks. He also serves as Chair of the Executive and Governance Committee of the FHLBank of Dallas' Board of Directors.

Margo S. Scholin, 71, is Vice-Chair of the Board of Directors of the FHLBank of Dallas and has served in that capacity since January 1, 2021. Ms. Scholin is retired partner of the law firm of Baker Botts L.L.P. in Houston, Texas. As a member of the law firm's Corporate Section she specialized in corporate and securities law, including securities law reporting, corporate transactions and governance, corporate finance, and the issuance of debt and equity securities. Ms. Scholin joined Baker Botts L.L.P. in 1983 and was a partner from 1991 until her retirement in December 2010. From 1997 to 2004, she served as Chair of the Regulatory Committee of the Texas State Board of Health. Ms. Scholin is a past Chair of the Board of Directors of the Houston Area Women's Center, a non-profit agency serving victims of domestic violence and sexual abuse, and has served on numerous other non-profit boards. She currently serves on the Council of Federal Home Loan Banks and is a member of the Chair and Vice-Chair Committee of the Council of Federal Home Loan Banks. Ms. Scholin also serves as Vice-Chair of the Executive and Governance Committee of the FHLBank of Dallas' Board of Directors.

G. Bridger Cox, 69, is the Chair of the Board of Directors of the FHLBank of Topeka and he has been Chair of Citizens Bank & Trust Company, Ardmore, Oklahoma, since 1996. He also served as President of Citizens Bank & Trust Company from 1996 to 2021. Although the FHLBank of Topeka's Board of Directors did not participate in Mr. Cox's nomination since he is a member Director, Mr. Cox is a graduate of the Stonier Graduate School of Banking at Rutgers University, possesses more than 30 years of banking management experience, has served on the Board of Directors of the Oklahoma Industrial Finance Authority and the Oklahoma Development Finance Authority, and has prior experience as an FHLBank of Topeka Director, that assists in his service as a Director. Prior to his current term, Mr. Cox served as a member Director of the FHLBank of Topeka from January 1998 through December 2006.

Robert E. Caldwell, II, 51, is Vice-Chair of the Board of Directors of the FHLBank of Topeka and is currently Executive Vice President and Chief Administrative Officer for Nebco, Inc., a supplier of materials to the construction industry to construct buildings, streets and highways, which he began in August 2014. Prior to his service at Nebco, Inc., Mr. Caldwell was the President and Chief Operating Officer of WRK Real Estate, LLC, which he began in January 2014. He previously served as President and Chief Executive Officer of Hampton Enterprises, Inc., a commercial real estate development, general contracting, construction management and property management firm, since 2006 and General Counsel for Linweld, Inc., a large independent manufacturer and distributor of industrial/medical gases and welding supplies. The Board of Directors of the FHLBank of Topeka considered Mr. Caldwell's qualifications, skills and attributes, including his B.S. in business administration, his J.D. and MBA, his experience as General Counsel for Linweld, Inc., a subsidiary of a Japanese public company, his service as President and Chief Executive Officer of a commercial real estate and construction company, and his prior service as an FHLBank of Topeka Director, when making his nomination.

Simone Lagomarsino, 60, became Chair of the FHLBank of San Francisco in January 2022, and previously served as Vice-Chair. Ms. Lagomarsino has been President and Chief Executive Officer of Luther Burbank Corporation, and its subsidiary Luther Burbank Savings, Santa Rosa, California, since January 2019, and a Director since November 2018. She is also currently, and has been since 2019, on the Board of Hannon Armstrong, a REIT that provides capital to leading companies in the energy efficiency, renewable energy, and other sustainable infrastructure markets. Beginning January 2022, she joined the Board of Directors of the Federal Reserve Bank of San Francisco head office. Previously, she was a director of Pacific Premier Bank, Irvine, California, and its holding company, Pacific Premier Bancorp, from April 2017 through November 2018. Ms. Lagomarsino has also been the President and Chief Executive Officer of Western Bankers Association (formerly California Bankers Association) beginning April 2017 through December 2018. Prior to that she was Chief Executive Officer and a director of Heritage Oaks Bank and President of Heritage Oaks Bancorp, Paso Robles, California, from September 2011, until its merger with

Pacific Premier Bank/Pacific Premier Bancorp in April 2017. Prior to that, Ms. Lagomarsino was President and Chief Executive Officer of Kinecta Federal Credit Union from June 2006 through January 2010. She is a financial services professional with more than 30 years of experience in executive positions. Ms. Lagomarsino holds an M.B.A. in Finance from Claremont Graduate University and a B.A. in Economics from Claremont McKenna College. Ms. Lagomarsino's current position as the Principal Executive Officer of a Bank member, her previous Director and Executive Officer positions with other financial institutions, and her involvement in and knowledge of corporate governance, finance, auditing, accounting, internal controls, risk management, financial reporting, and financial management, as indicated by her background, support Ms. Lagomarsino's qualifications to serve on the FHLBank of San Francisco's Board.

F. Daniel Siciliano, 51, became Vice-Chair of the FHLBank of San Francisco in January 2022, and previously served as Chair. Mr. Siciliano is a Stanford Law School fellow (CodeX) and was the co-founder of Stanford's Rock Center for Corporate Governance. He has previously served as Professor of the practice of law, faculty Director of the Rock Center for Corporate Governance, and Associate Dean for executive education and special programs at Stanford Law School, Stanford, California. Mr. Siciliano is currently President and CEO of Nikki, Inc, a fintech start-up that helps individuals and companies access and deploy capital to optimize returns in previously inefficient markets. Mr. Siciliano is the Chair of the Board of both the American Immigration Council and the Silicon Valley Directors' Exchange, and serves on the Board of the Latino Corporate Directors' Education Foundation. As of 2011, he has been an Advisory Board member and visiting Professor for the Corporate Governance Center and Law School of Pontificia Universidad Católica de Chile. Previously, he was co-founder, Chief Executive Officer, and Executive Chair of LawLogix Group, Inc., a privately held software technology company from 2000 to October 2015. Mr. Siciliano's current and previous positions as a law Professor and Director at Stanford's Rock Center for Corporate Governance, his previous experience as an Executive Officer of a software technology company; and his involvement in and knowledge of corporate governance, finance, auditing, accounting, internal controls, risk management, financial reporting, and financial management as indicated by his background, support Mr. Siciliano's qualifications to serve on the FHLBank of San Francisco's Board.

FHLBank Presidents

Each FHLBank president reports to the Board of Directors of the respective FHLBank. Each FHLBank president participates in regular meetings with the presidents of the other FHLBanks. The responsibilities of the president include:

- management of the FHLBank;
- administration of the programs of the FHLBank; and
- compliance with the regulations and policies of the FHFA.

The following persons are currently serving as president of an FHLBank and the following information has been provided for each FHLBank primarily based on the information disclosed in its annual report on SEC Form 10-K for the year ended December 31, 2021:

Timothy J. Barrett, 63, has served as President and Chief Executive Officer of the FHLBank of Boston since December 2021. Prior to assuming that position, Mr. Barrett served as Executive Vice President and Treasurer from January 2019 until November 2021, and Senior Vice President and Treasurer from November 2010 until December 2018. Prior to joining the FHLBank of Boston, he was Assistant Treasurer at FMR LLC, the parent company of Fidelity Investments from September 2008 to October 2010; as Treasurer and Chief Investment Officer at Fidelity Personal Bank & Trust from August 2007 to September 2008; as Managing Director, Global Treasury at Investors Bank & Trust from 2004 to July 2007; in various senior roles in Treasury at FleetBoston Financial (including merged entities) from 1985 to 2004; and as an investment manager for Citibank, NA from 1981 to 1985. He currently serves as a member of the Board of Directors of the Office of Finance. He earned his B.A. from St. Anselm College and his M.B.A. from Rensselaer Polytechnic Institute.

José R. González, 67, was appointed President and CEO of the FHLBank of New York on April 2, 2014. Mr. González joined the FHLBank of New York on October 15, 2013, as Executive Vice President. Mr. González served as Vice-Chair of the Board of Directors of the FHLBank of New York from 2008 through 2013, and as an elected industry director from 2004 through 2013. Prior to joining the FHLBank of New York, he served as Senior Executive Vice President, Banking & Corporate Development for OFG Bancorp (formerly Oriental Financial Group, Inc.). Mr. González has also been a member of the Board of Directors of the Pentegra Defined Benefit Plan for Financial Institutions since July 2014 and has served as Vice-Chair since January 1, 2022. From August 31, 2016 to August 31, 2020, Mr. González served as a member of the Oversight Board created by the Puerto Rico Oversight, Management, and Economic Stability Act (“PROMESA”) of 2016. Mr. González was a member of the Board of Directors of Santander BanCorp (“Santander”), a bank holding company, from 2000 to 2010. From 2002 to 2008, he was Vice-Chair of the Board, President and CEO of Santander. After joining Santander in 1996 as President and CEO of its securities broker dealer, Mr. González was named Senior Executive Vice President and Chief Financial Officer of the holding company in 2001. Mr. González began his career in banking in the early 1980s as Vice President, Investment Banking, for Credit Suisse First Boston (“CSFB”) and, from 1989 through 1995, served as President and CEO of CSFB’s Puerto Rico operations. He served as President and CEO of the Government Development Bank for Puerto Rico, a government instrumentality that acts as the Commonwealth’s fiscal agent, from 1986 to 1989. He is a past President of both the Puerto Rico Bankers Association and the Securities Industry Association of Puerto Rico. Mr. González holds a B.A. in Economics from Yale University and M.B.A. and Juris Doctor degrees from Harvard University.

Winthrop Watson, 67, was appointed as the FHLBank of Pittsburgh’s President and Chief Executive Officer effective January 1, 2011. Previously, he was Chief Operating Officer of the FHLBank of Pittsburgh, a position that he assumed in November 2009. Prior to joining the FHLBank of Pittsburgh, Mr. Watson worked at J.P. Morgan for 24 years in a variety of capital markets and financial institution roles most recently as Managing Director in its Asia Pacific investment banking business. Earlier, Mr. Watson led the building of the company’s investment and commercial banking franchise for U.S. government-sponsored enterprises. Mr. Watson serves as a Director of the Office of Finance and the Pentegra Defined Benefit Plan. He is involved in the community as a Board member of the Pittsburgh Ballet Theater and the Pennsylvania Economy League of Greater Pittsburgh. Mr. Watson holds an MBA from Stanford University and a BA from the University of Virginia.

Kirk Malmberg, 61, was appointed President and CEO of the FHLBank of Atlanta effective May 28, 2021. Previously, he served as Executive Vice President and Chief Operating Officer from 2019 to 2020, overseeing the FHLBank’s member sales and outreach, community investment services, accounting, financial reporting, financial operations management, investment and derivatives operations, treasury and information technology, and as Executive Vice President and Chief Financial Officer from 2011 to 2019. Mr. Malmberg served as Executive Vice President and Chief Credit Officer from 2007 to 2011, overseeing collateral services, credit services, community investment services and mortgage program operations. Prior to that, Mr. Malmberg served as Senior Vice President responsible for the FHLBank of Atlanta’s mortgage programs. Mr. Malmberg joined the FHLBank of Atlanta in 2001 as Senior Vice President, Asset-Liability Management, after having served for five years as Senior Vice President, Treasury, at the FHLBank of Chicago. Mr. Malmberg earned an M.B.A. from Rice University and a B.A. from Trinity University.

Andrew S. Howell, 60, was appointed as the FHLBank of Cincinnati’s President and Chief Executive Officer in June 2012. Previously, he served as Executive Vice President-Chief Operating Officer of the FHLBank of Cincinnati since January 2008. Mr. Howell began his career at the FHLBank of Cincinnati in 1989 as the Credit Department Manager after being in several lending and management positions at Huntington Bank, Bank One, and First National Bank of Cincinnati. Mr. Howell currently serves on the Board of Directors of the Office of Finance and the Pentegra Defined Benefit Plan for Financial Institutions. Mr. Howell earned a bachelor’s degree of Business Administration from the University of Kentucky, and a Master of Business Administration degree from the University of Cincinnati.

Cindy L. Konich, 65, was appointed by the FHLBank of Indianapolis' Board of Directors to serve as President and Chief Executive Officer of the FHLBank of Indianapolis in July 2013. As an FHLBank President, she serves on the Board of Directors of the Office of Finance, and is Chair of its Governance Committee. Ms. Konich earned her undergraduate degree from Indiana University and earned her MBA from Indiana University's Kelley School of Business and is a CPA.

Michael A. Ericson, 50, became President and Chief Executive Officer of the FHLBank of Chicago on January 1, 2021. Prior to that, Mr. Ericson held the following positions at the FHLBank of Chicago: Executive Vice President and Chief Operating Officer during 2020, Executive Vice President and Group Head, Members and Markets from 2014 to 2020, Executive Vice President and Chief Risk Officer from December 2008 to 2014, Senior Vice President and Chief Risk Officer from July 2008 to December 2008, and Senior Vice President of Accounting Policy and SEC Reporting from January 2005 to July 2008. Prior to joining the FHLBank of Chicago, Mr. Ericson was Vice President, Accounting Policy at Bank One before the merger with JPMorgan Chase, and became Global Treasury Controller at JPMorgan Chase subsequent to the merger from 2003 to 2004. Mr. Ericson was Senior Manager with PricewaterhouseCoopers, LLP in the Financial Services Group from 1994 to 2003. Mr. Ericson currently serves on the Board of Directors of the Pentegra Defined Benefit Plan for Financial Institutions and the Office of Finance, and as a member of the Directorate of the Resolution Funding Corporation. Mr. Ericson graduated from the University of Colorado with a Bachelor's degree in Business Administration.

Kristina K. Williams, 57, has been President and CEO of the FHLBank of Des Moines since January 2020. She began her association with the Federal Home Loan Bank System in 2004. Prior to her current role, she served as the Chief Operating Officer of the FHLBank of Pittsburgh, a position she held from 2011 to 2019. In that role, Ms. Williams had responsibility for all member-facing departments, including community investment, communications, product delivery, member services, and information technology. In her 15 years with the FHLBank of Pittsburgh she also held positions of Chief Accounting Officer, CFO, and acting Chief Risk Officer. Prior to working for the FHLBank of Pittsburgh, Ms. Williams spent 12 years with PNC Financial Services in its wholesale bank and six years in public accounting. She formerly served as Vice Chair of the West Liberty University (WLU) Board of Governors. Ms. Williams also previously served as the Development Committee Chair of the Board of Directors for Strong Women Strong Girls of Pittsburgh. Ms. Williams has an undergraduate degree from WLU and Masters of Professional Accountancy from West Virginia University. She is also a CPA and received an honorary Doctor of Humane Letters degree from WLU in 2015.

Sanjay Bhasin, 53, serves as President and Chief Executive Officer of the FHLBank of Dallas and has served in that capacity since he joined the FHLBank of Dallas in May 2014. Prior to his employment with the FHLBank of Dallas, Mr. Bhasin served as Executive Vice President, Members and Markets for the FHLBank of Chicago from 2011 until May 2014. He joined the FHLBank of Chicago in 2004 as Vice President, Mortgage Finance and was promoted to Senior Vice President, Mortgage Finance in 2007 and to Executive Vice President, Financial Markets in 2008, a position he held until his appointment as Executive Vice President, Members and Markets. Prior to joining the FHLBank of Chicago, Mr. Bhasin was responsible for managing the interest rate risk associated with Bank One, NA's mortgage pipeline holdings from 1999 to 2004. He currently serves on the Council of Federal Home Loan Banks and as a Director of the Office of Finance. Mr. Bhasin holds an MBA in Finance from Indiana University.

Mark E. Yardley, 66, became President and Chief Executive Officer of the FHLBank of Topeka on March 24, 2017, after serving as interim President and Chief Executive Officer starting on January 1, 2017. From May 2010 through December 2016, he was Executive Vice President and Chief Risk Officer. Mr. Yardley previously served as Executive Vice President and Chief Financial Officer from February 2005 to May 2010, First Senior Vice President and Chief Financial Officer from December 1999 through February 2005 and as First Senior Vice President, Director of Finance, from January 1999 to December 1999. Mr. Yardley joined the FHLBank of Topeka in 1984 as Director of Internal Audit and was promoted to Assistant Vice President in 1990 and Vice President in 1991. He also currently serves on the Board of Directors of the Office of Finance. Mr. Yardley graduated summa cum laude from Washburn University, Topeka, with a degree in business administration with an accounting emphasis and is a CPA.

Teresa Bryce Bazemore, 62, became President and Chief Executive Officer of the FHLBank of San Francisco on March 15, 2021. She served as the President of Radian Guaranty from July 2008, to her retirement in April 2017, where she oversaw the strategic planning, business development, and operations of the mortgage insurance business line. Prior to being appointed as the President of Radian Guaranty, Ms. Bazemore served as Executive Vice President, General Counsel, and Corporate Secretary from October 2006 to July 2008, and added the role of Chief Risk Officer of Radian Group in February 2007. Before joining the Radian Group, Ms. Bazemore was the Vice President, General Counsel, and Secretary for Nexstar Financial Corporation from June 2000 to May 2006, and before that, she was the General Counsel of the mortgage banking line of business at Bank of America from March 1997 to May 2000. Following her retirement from Radian Guaranty, Ms. Bazemore served as a member of the Board of Directors of the FHLBank of Pittsburgh from August 2017 until March 2019, when she relocated to California. In addition, Ms. Bazemore currently serves on the Board of Directors of First Industrial Realty Trust, Inc. and the T. Rowe Price Funds. She is also the founder of Bazemore Consulting, LLC. Professional appointments she has held include: Federal Reserve Bank of Philadelphia Economic Advisory Council, Fannie Mae National Advisory Council, and Consumer Advisory Council of the Federal Reserve. Ms. Bazemore received her B.A. from the University of Virginia and J.D. from Columbia University.

Chief Executive Officer, Office of Finance

Randolph C. Snook, 61, has served as the Chief Executive Officer of the Office of Finance since January 1, 2019. Mr. Snook has more than three decades of experience in the securities industry. From August 2005 to December 2018, Mr. Snook served as the Executive Vice President of Business Policies & Practices for the Securities Industry and Financial Markets Association (SIFMA), where he was responsible for overseeing SIFMA's three U.S. business groups - Capital Markets, Private Client, and Asset Management - as well as Technology and Operations, Research, and Member Engagement. Prior to joining SIFMA, Mr. Snook held several senior positions at Goldman Sachs, including co-head of the Credit Capital Markets New Issue Desk and co-head of the Corporate Bond Business Unit. Mr. Snook holds a B.S. in Civil Engineering and an M.B.A., both from Rensselaer Polytechnic Institute.

Office of Finance Board of Directors

The Office of Finance Board of Directors is comprised of the FHLBank presidents and five Independent Directors. To be eligible to serve as an Independent Director, a candidate must be a citizen of the United States, and shall not have any material relationship with an FHLBank or the Office of Finance. In particular, an Independent Director may not be an officer, director or employee of an FHLBank or any member of an FHLBank or be an officer or employee of the Office of Finance (and, in each case, may not have held such a position during the previous three years). In addition, an Independent Director may not be affiliated with any consolidated obligations selling or dealer group under contract with the Office of Finance, or hold shares or any other financial interest in any consolidated obligations seller or dealer group in excess of specified amounts. The Independent Directors, as a group, are required to have substantial experience in financial and accounting matters.

The Governance Committee of the Office of Finance Board of Directors is responsible for recommending to the Office of Finance Board of Directors criteria and processes (including appropriate diversity and inclusion criteria and processes) for the identification and selection of Independent Director candidates, overseeing the implementation of such criteria and processes approved by the Office of Finance Board of Directors, and identifying and recommending to the Office of Finance Board of Directors Independent Director candidates.

Independent Directors are elected by majority vote of the Office of Finance Board of Directors, subject to the FHFA's review of, and non-objection to, each Independent Director. Each elected Independent Director serves a five-year term (staggered so that no more than one Independent Director seat would be scheduled to become vacant in any one year). An Independent Director may not serve more than two full consecutive terms.

Jonathan A. Scott is the Chair and José R. González, President and Chief Executive Officer of the FHLBank of New York, is the Vice-Chair. The following persons are currently serving as an Independent Director:

Jonathan A. Scott, Ph.D., 72, has served as an Independent Director since 2010. In 2018, he was re-elected for a five-year term ending in 2023. Dr. Scott is a Professor of Finance at Temple University's Fox School of Business, where he has been since 1991. At Temple, he is a member of the Finance Department and Managing Director of the William C. Dunkelberg Owl Fund. He also has six years of experience in academic administration at Temple University and managed initiatives related to information technology, program cost analysis, and performance metrics. Prior to joining the university, Dr. Scott was an executive for seven years at the FHLBank of Dallas, including service as the Chief Financial Officer from 1987-1988. Dr. Scott received a Ph.D. in Economics from Purdue University.

Janice C. Eberly, Ph.D., 59, has served as an Independent Director since 2014. In 2020, she was re-elected to a five-year term ending in 2025. Dr. Eberly is the Senior Associate Dean for Strategy and Academics and the James R. and Helen D. Russell Distinguished Professor of Finance at Northwestern University's Kellogg School of Management, where she has been a faculty member since 1998. She served as the Assistant Secretary for Economic Policy and Chief Economist for the United States Treasury from 2011 to 2013, and as an Independent Director for the FHLBank of Chicago from 2009 to 2011. Dr. Eberly serves as an independent trustee of the TIAA-CREF mutual funds, starting in February 2018, and was a past Vice President of the American Economic Association. Dr. Eberly received a Ph.D. in Economics from the Massachusetts Institute of Technology.

Kathleen C. McKinney, 67, has served as an Independent Director since 2010. In 2017, she was re-elected to a five-year term ending in 2022. Ms. McKinney is a senior shareholder with Haynsworth Sinkler Boyd, P.A. having nearly 40 years of experience as bond counsel and underwriter's counsel in the public finance, community facilities and economic development sectors. She served as President of the National Association of Bond Lawyers and is a recognized speaker on public finance legal issues. Her practice includes advising State agencies and local governments on corporate governance matters with respect to debt issuance and investment of public funds. She is the Chair of the Spartanburg Methodist College Board of Trustees and is the past Chair of the Furman University Board of Trustees. She is recognized by Chambers in Band 1 for her achievement as an attorney in banking and finance. She is a summa cum laude graduate of the University of South Carolina Honors College with a B.A. degree and member of Phi Beta Kappa. She is also a cum laude graduate of the University of South Carolina School of Law where she was executive editor of the South Carolina Law Review.

Joel W. Motley, 69, has served as an Independent Director since 2016. In 2021, he was re-elected to a five-year term ending in 2026. Mr. Motley founded Carmona Motley Inc. in 1992 and Public Capital Advisors LLC in 2006. Prior to beginning his career in investment banking at Lazard Frères & Co. in 1985, Mr. Motley worked as an aide to the late Senator Daniel Patrick Moynihan (D-NY), serving as his Chief of Staff in New York City and surrounding counties. Mr. Motley is active on a number of corporate and not-for-profit boards. He is an independent director on the boards of Invesco Mutual Funds, a member of the Council on Foreign Relations, and Chair Emeritus of the Board of Human Rights Watch. Mr. Motley also serves on the Boards of the Pulitzer Center on Crisis Reporting, The Greenwall Foundation, The Trust for Mutual Understanding, and Historic Hudson Valley. Mr. Motley holds a JD degree from Harvard Law School and an AB degree (magna cum laude) from Harvard College.

Patricia A. Oelrich, Ph.D., CPA, CISA, 68, has served as an Independent Director since 2014. In 2019, she was re-elected for a five-year term ending in 2024. Ms. Oelrich was a member of the Board of Directors of USA Technologies, Inc. from April 2019 to June 2020 and was a member of the Board of Directors of Pepco Holdings, Inc. from May 2010 until April 2016 when it was sold to Exelon Corporation. She is also on the Board of the Association of Audit Committee Members, Inc. From 1995 to 2009, she was with GlaxoSmithKline Pharmaceuticals as Vice President, Internal Audit and then as Vice President, IT Risk Management. Prior to joining GlaxoSmithKline, Ms. Oelrich was an Audit Partner with Ernst & Young, serving the audit assurance practice from 1975-1995. She spent two years in Ernst & Young's National Office Audit Assurance Group developing audit guidance and providing financial accounting interpretations to offices throughout the U.S. In 1988, she became a Partner and headed the Information Technology Audit and Security Practice in Chicago from 1988 to 1995. In addition to

heading the Information Technology Audit and Security Practice, Ms. Oelrich was also lead Partner on various audit engagements. Ms. Oelrich is Co-Chair of the Advisory Board for the Raj and Kamla Gupta Governance Institute, member of the NACD, board member for the NACD New Jersey Chapter, and member of the Women Corporate Directors Philadelphia, and was recognized as NACD Directorship Certified under the NACD's certification program in 2021. Ms. Oelrich has also served as principal of Oelrich & Associates, LLC since April 2011, where she counsels clients regarding matters of corporate governance. Ms. Oelrich received a Ph.D. and an M.A. in Human Organizational Systems from Fielding Graduate University and a B.B. in Accounting and Information Systems from Western Illinois University.

Regulations Governing the Selection and Compensation of FHLBank and Office of Finance Employees

As specified in the FHLBank Act, the selection and compensation of FHLBank officers and employees are subject to the approval of the Board of Directors and management of each individual FHLBank. However, the Director of the FHFA has the authority to prohibit compensation that is not reasonable and comparable to compensation paid to executives in other similar businesses involving similar duties and responsibilities. The FHFA established several principles for the FHLBanks and the Office of Finance for setting executive compensation policies and practices to ensure sound incentive compensation practices:

- executive compensation must be reasonable and comparable to that offered to executives in similar positions at other comparable financial institutions;
- executive incentive compensation should be consistent with sound risk management and preservation of the par value of the FHLBank's capital stock;
- a significant percentage of an executive's incentive-based compensation should be tied to longer-term performance and outcome-indicators;
- a significant percentage of an executive's incentive-based compensation should be deferred and made contingent upon performance over several years; and
- the Board of Directors of each FHLBank and the Office of Finance should promote accountability and transparency with respect to the process of setting compensation.

Each FHLBank is responsible for establishing that FHLBank's compensation philosophy and objectives, and each FHLBank includes a compensation discussion and analysis relating to all material elements of the compensation of its named executive officers in its annual report on SEC Form 10-K. (See [Explanatory Statement about Federal Home Loan Banks Combined Financial Report](#).)

The FHFA exercises similar supervisory and examination authority over the Office of Finance and its Board of Directors as it exercises over an FHLBank and its Board of Directors. FHFA regulations require the Office of Finance Board of Directors to select, employ, determine the compensation for, and assign the duties of, the Office of Finance Chief Executive Officer. (See *Office of Finance CEO 2021 Compensation Discussion and Analysis* for more information.)

Overview and Objectives of FHLBank and Office of Finance Executive Compensation Programs

Each FHLBank strives to provide total compensation that promotes its mission. Compensation programs at each of the FHLBanks are generally intended to focus executives on achieving their individual FHLBank's mission and to associate executive pay with the FHLBank's corporate goals, performance targets, and strategic plan. Each FHLBank's Board of Directors determines total compensation for the president of that FHLBank, consisting of base salary, cash incentive compensation, and other benefits as described in Table S-1.

The Office of Finance is only responsible for the compensation policies for its employees. The Office of Finance seeks to provide a flexible and market-based approach to compensation that attracts, retains, and motivates high performing, accomplished financial services executives who, by their individual and collective performance, achieve the Office of Finance's strategic business initiatives. The objectives of the compensation program are to establish goals and communicate short- and long-term standards of performance for the successful achievement of the Office of Finance's mission and to recognize, motivate, and reward the CEO commensurate with his contributions. (See *Office of Finance CEO 2021 Compensation Discussion and Analysis* for more information.)

The following information has been provided for each FHLBank primarily based on the information disclosed in its annual report on SEC Form 10-K for the year ended December 31, 2021, which in each case provides detail about the FHLBank's compensation philosophy and objectives. The presentations may not be consistent due to differing FHLBank practices and application and interpretation of the rules. Table S-1 presents summary compensation information for each of the FHLBank Presidents and the Office of Finance CEO.

Table S-1 - FHLBank Presidents and Office of Finance CEO Summary Compensation

(whole dollars)

FHLBank	President/CEO Name	Year	Salary	Bonus	Non-Equity Incentive Plan Compensation	Change In Pension Value and Nonqualified Deferred Compensation Earnings	All Other Compensation*	Total
Boston	Timothy J. Barrett(1)	2021	\$ 441,864	\$ —	\$ 468,098	\$ 175,000	\$ 38,740	\$ 1,123,702
	Edward A. Hjerpe III(2)	2021	862,088	—	1,015,295	718,247	199,765	2,795,395
		2020	930,413	—	688,714	1,883,000	110,028	3,612,155
		2019	892,931	—	875,240	1,693,000	116,859	3,578,030
New York	José R. González(3)	2021	996,000	—	894,201	741,000	105,311	2,736,512
		2020	996,000	—	1,018,077	1,430,000	173,052	3,617,129
		2019	993,600	—	961,906	2,736,000	145,233	4,836,739
Pittsburgh	Winthrop Watson(4)	2021	925,058	—	817,444	198,000	86,015	2,026,517
		2020	925,058	—	922,767	520,000	84,480	2,452,305
		2019	881,007	—	881,007	603,000	80,254	2,445,268
Atlanta	Kirk Malmberg(5)	2021	525,000	2,100	429,462	307,917	118,330	1,382,809
	W. Wesley McMullan(5)(6)	2021	380,000	1,500	317,679	4,083,679	130,989	4,913,847
		2020	986,538	100	848,874	3,969,392	85,994	5,890,898
		2019	935,000	100	822,604	4,404,577	79,758	6,242,039
Cincinnati	Andrew S. Howell(7)	2021	948,462	—	779,309	964,000	36,993	2,728,764
		2020	947,115	—	785,578	3,225,000	36,097	4,993,790
		2019	939,615	—	779,698	3,457,000	37,044	5,213,357
Indianapolis	Cindy L. Konich(8)(9)	2021	959,946	—	1,006,129	—	59,480	2,025,555
		2020	996,867	—	941,870	4,616,000	61,878	6,616,615
		2019	931,996	—	839,154	5,665,000	69,610	7,505,760
Chicago	Michael A. Ericson(10)	2021	850,000	—	681,250	591,000	17,956	2,140,206
Des Moines	Kristina K. Williams(11)	2021	901,000	—	699,604	—	623,518	2,224,122
		2020	811,413	500,000	735,842	—	205,410	2,252,665
Dallas	Sanjay Bhasin	2021	950,589	—	880,244	51,000	57,035	1,938,868
		2020	931,950	—	839,241	287,000	54,570	2,112,761
		2019	855,000	—	649,230	279,000	51,300	1,834,530
Topeka	Mark Yardley(12)	2021	725,000	—	481,944	407,337	105,952	1,720,233
		2020	725,000	—	431,271	1,233,185	99,021	2,488,477
		2019	682,500	—	437,126	2,360,858	62,290	3,542,774
San Francisco	Teresa Bryce Bazemore(13)	2021	696,023	100,000	662,500	205,378	160,950	1,824,851
	Stephen P. Traynor(14)	2021	401,147	568,082	321,658	499,426	500,827	2,291,140
		2020	470,000	—	487,746	344,850	39,439	1,342,035
Office of Finance	Randolph C. Snook(15)	2021	840,892	—	663,621	300,000	46,744	1,851,257
		2020	816,400	—	501,954	304,000	140,664	1,763,018
		2019	785,000	100,000	361,100	—	137,044	1,383,144

* Compensation in this column is further presented in Table S-3 - All Other Compensation.

- (1) Mr. Barrett's base salary reflects his service as the FHLBank of Boston's Executive Vice President and Treasurer through November 30, 2021, at the base salary of \$398,633, and his service as the FHLBank's President and Chief Executive Officer as of December 1, 2021, at the base salary of \$870,000. Mr. Barrett's non-equity incentive plan compensation reflect his efforts in the leadership transition following the Board of Director's August 2021 selection of Mr. Barrett as the FHLBank of Boston's next President and Chief Executive Officer, the Compensation Committee of the Board of Directors awarded Mr. Barrett a prorated 2021 incentive award based on (a) his salary and award opportunity as Executive Vice President and Treasurer through August 31, 2021, and (b) his salary and award opportunity as if his tenure as President and Chief Executive Officer had commenced on September 1, 2021, through December 31, 2021. Salary amount reflects adjustments to annual base salaries resulting from the FHLBank of Boston's biweekly payroll schedule in which employees, including the named executive officer, earn additional days of salary based upon the actual number of business days in the year.
- (2) Mr. Hjerpe retired as the FHLBank of Boston's President and Chief Executive Officer effective November 30, 2021. Salary amounts reflect adjustments to annual base salaries resulting from the FHLBank of Boston's biweekly payroll schedule in which employees, including the named executive officer, earn additional days of salary based upon the actual number of business days in the year.
- (3) Mr. González's 2020 non-equity incentive plan compensation also includes interest of \$54,891 during the year, earned on Deferred Incentive related to Incentive Compensation Plan awards for prior fiscal years. The FHLBank of New York received written non-objection from the FHFA on February 17, 2021. The amounts in non-equity incentive plan compensation also include the dollar value of all interest during each year earned on Deferred Incentive related to ICP awards for prior fiscal years, for 2021: \$45,800 for Mr. González.
- (4) Mr. Watson's 2021 non-equity incentive plan compensation was the incentive plans described in the FHLBank of Pittsburgh's SEC Form 10-K, as well as deferred incentive earned in the 2020, 2019, and 2018 Executive Officer Incentive Compensation Plan.
- (5) Mr. McMullan's and Mr. Malmberg's amount under the 2021 non-equity incentive plan compensation includes the dollar value of all earnings for services performed during the fiscal years ended December 31, 2021, 2020, and 2019 pursuant to awards under the FHLBank of Atlanta incentive compensation plan, even though fifty percent of the incentive compensation plan awards for each year were subject to mandatory deferral and distribution over three years. Also included is the dollar value of all interest during each year earned on deferred incentives related to incentive compensation awards for prior fiscal years. The \$100 bonus amounts for Mr. McMullan and Mr. Malmberg in each year reflect an annual \$100 employee appreciation bonus provided to all employees of FHLBank of Atlanta. The bonus amount also includes an award payment for \$2,000 for Mr. Malmberg under the FHLBank of Atlanta's Service Award Program. The bonus amount for Mr. McMullan also includes an award payment of \$1,500 to recognize his retirement under the FHLBank of Atlanta's Service Award Program. To the extent the FHLBank of Atlanta provided a tax gross-up on such bonus amounts, those amounts are included in All Other Compensation.
- (6) In 2020, due to the cumulative impact of the leap year schedule, coupled with the FHLBank of Atlanta's biweekly payroll processing schedule, Mr. McMullan's salary reflects 27 pay periods instead of the standard 26.
- (7) Mr. Howell's 2021 salary includes \$48,462 of excess accrued vacation benefits automatically paid in accordance with the established policy (applicable to all employees).
- (8) Salary for Ms. Konich reflects 26 biweekly pay periods for 2021 and 2019 and 27 biweekly pay periods for 2020.
- (9) During 2021, the change in pension values under the DB Plan and SERP for Ms. Konich was a decrease of \$1,462,000. In accordance with SEC rules, this negative amount is not included in this table.
- (10) The FHLBank of Chicago Board of Directors named Mr. Michael A. Ericson President and Chief Executive Officer of the FHLBank of Chicago, effective January 1, 2021.
- (11) Ms. Williams' 2020 salary, non-equity incentive, and all other compensation are based on the period of her employment with the FHLBank of Des Moines from January 20, 2020 through December 31, 2020. Ms. Williams also received a one-time bonus in 2020, related to the start of her employment with the FHLBank of Des Moines. Ms. Williams received an additional BEP DC Plan contribution of \$525,000 in 2021, following the completion of one year of employment with the FHLBank of Des Moines, which is reflected in the "All Other Compensation" column.
- (12) All compensation reported under "non-equity incentive plan compensation" represents performance awards earned pursuant to achievement of performance objectives under the FHLBank of Topeka's Executive Incentive Compensation Plan, subject to the approval of the Compensation Committee and not disapproved by the FHLFA. The deferred compensation earned and accrued component for 2020, was reduced when paid in 2021, and the amount in the table has been updated to reflect the actual amount paid. The change reflects an immaterial correction to represent the actual amount paid, which was paid in line with the final calculation of the performance metrics within the deferred incentive plan. The value decreased \$91,804 from \$523,075 for Mr. Yardley.
- (13) The FHLBank of San Francisco appointed Teresa Bryce Bazemore as President and Chief Executive Officer effective March 15, 2021, and upon the appointment, Stephen P. Traynor no longer served as the FHLBank of San Francisco's acting President and Chief Executive Officer.
- (14) For serving as acting President and Chief Executive Officer, Mr. Traynor was accruing a special award at a rate of \$45,833.33 per month, (in addition to his annual compensation), beginning March 1, 2020, and continued through the last business day prior to the date on which a permanent Chief Executive Officer commences employment at the FHLBank of San Francisco. For 2021, Mr. Traynor's special award is included under Bonus and \$470,000 representing a severance payment is included under All Other Compensation.
- (15) Mr. Snook's non-equity incentive plan compensation also includes interest of \$18,600, earned on deferred incentives related to 2020 and 2019 Executive Incentive Plan awards for prior fiscal years.

FHLBank Presidents and Office of Finance CEO Pay Ratio

In determining the median employee, one of two approaches was used by each of the FHLBanks and the Office of Finance to calculate the FHLBank President and Office of Finance CEO pay ratio; the Annual Total Compensation approach or the Consistently Applied Compensation Measures approach. Both of these approaches are acceptable methodologies for identifying the median employee. After identifying the median employee, each FHLBank calculates the annual total compensation for the identified median employee.

Annual Total Compensation Approach. The median employee is identified by calculating the annual total compensation for each employee (in the same manner as Total Compensation is calculated for the FHLBank Presidents and the Office of Finance CEO Summary Compensation in Table S-1) at an identified measurement date. The employee population includes all full-time and part-time employees at an identified measurement date (each of the FHLBanks and the Office of Finance has identified its own measurement date). For permanent employees who were not employed for an entire year, total compensation is annualized. Employees are ranked from lowest to highest using annual total compensation, excluding the FHLBank President or the Office of Finance CEO, and based on this ranking the median employee is identified.

Consistently Applied Compensation Measures Approach. The median employee is identified by comparing the amount of salary, wages, incentive awards, and other compensation (as reflected in payroll records or as reflected in an employee's W-2) for each employee at an identified measurement date. The employee population includes all full-time and part-time employees at an identified measurement date. For permanent employees who were not

employed for an entire year, compensation is annualized. Employees are ranked from lowest to highest using compensation, excluding the President, and based on this ranking the median employee is identified.

Table S-2 presents the pay ratio for each of the FHLBanks and the Office of Finance and is calculated as a ratio of the FHLBank President's or the Office of Finance CEO's annual total compensation to the annual total compensation of the identified median employee. Each of the FHLBanks and the Office of Finance is responsible for identifying its median employee and the calculation of its pay ratio, and as a result, the pay ratios presented in Table S-2 may not be comparable amongst the FHLBanks and the Office of Finance. The following information has been provided for each FHLBank based on the information disclosed in its annual report on SEC Form 10-K for the year ended December 31, 2021.

Table S-2 - FHLBank Presidents and Office of Finance CEO Pay Ratio

(whole dollars)

FHLBank	President/CEO Name	President/CEO Annual Total Compensation	Median Employee Annual Total Compensation	Median Employee Calculation Approach	Pay Ratio
Boston(1)	Edward A. Hjerpe III	\$ 2,878,706	\$ 161,901	Consistently Applied Compensation Measures	18
New York	José R. González	2,736,512	164,755	Consistently Applied Compensation Measures	17
Pittsburgh	Winthrop Watson	2,026,517	143,699	Consistently Applied Compensation Measures	14
Atlanta(2)	Kirk Malmberg	1,732,809	166,697	Consistently Applied Compensation Measures	10
Cincinnati	Andrew S. Howell	2,728,764	117,953	Consistently Applied Compensation Measures	23
Indianapolis	Cindy L. Konich	2,025,555	165,141	Consistently Applied Compensation Measures	12
Chicago	Michael A. Ericson	2,140,206	157,200	Consistently Applied Compensation Measures	14
Des Moines	Kristina K. Williams	2,224,122	137,593	Consistently Applied Compensation Measures	16
Dallas	Sanjay Bhasin	1,938,868	159,085	Annual Total Compensation	12
Topeka	Mark Yardley	1,720,233	114,113	Annual Total Compensation	15
San Francisco(3)	Teresa Bryce Bazemore	2,217,809	227,182	Annual Total Compensation	10
Office of Finance	Randolph C. Snook	1,851,257	200,734	Annual Total Compensation	9

(1) The FHLBank of Boston had more than one non-concurrent CEO in 2021, and annualized Mr. Hjerpe's compensation for purposes of calculating the CEO pay ratio.

(2) The FHLBank of Atlanta had more than one non-concurrent CEO in 2021, and annualized Mr. Malmberg's compensation for purposes of calculation of the CEO pay ratio.

(3) For 2021, the FHLBank of San Francisco had two non-concurrent Principal Executive Officers. Mr. Traynor served as the FHLBank of San Francisco's Executive Vice President, Chief Business Officer until he began serving as the FHLBank of San Francisco's acting President and Chief Executive Officer in 2020, until the FHLBank of San Francisco appointed Ms. Bazemore as the FHLBank of San Francisco's President and Chief Executive Officer, effective March 15, 2021. Since Mr. Traynor received payment of a special award above his normal compensation for his service as acting President and Chief Executive Officer and Ms. Bazemore became the FHLBank of San Francisco's President and Chief Executive Officer effective in the first quarter 2021, the FHLBank of San Francisco has elected to use Ms. Bazemore's annualized 2021 total compensation for the Chief Executive Officer pay ratio disclosure, rather than to combine the 2021 total compensation of the two Principal Executive Officers who served in 2021.

FHLBank President Employment Agreements or Severance Plans

FHLBank of Boston. The FHLBank of Boston entered into an employment agreement with Mr. Barrett, effective as of December 1, 2021 (the Employment Agreement). The Board of Directors of the FHLBank of Boston determined that having the Employment Agreement in place would be an effective tool to recruit and retain Mr. Barrett as the President and Chief Executive Officer. The Employment Agreement has an initial term of three years and subsequently renews for one-year periods unless either party elects to not renew. Under the Employment Agreement, Mr. Barrett is provided access to a FHLBank of Boston-owned or -leased vehicle at a cost not to exceed \$900 per month and a reserved parking space at a location convenient to the FHLBank of Boston's headquarters. In January 2022, the FHLBank of Boston entered into a three-year lease for a vehicle for Mr. Barrett's use, with such lease including an approximately \$16,500 down payment, plus taxes and fees, and \$865 monthly payments. Also, under the Employment Agreement, Mr. Barrett is entitled to participate in all incentive, savings, and retirement plans and programs available to senior executives at the FHLBank of Boston. Also, under the Employment Agreement, Mr. Barrett's employment may be terminated by the FHLBank of Boston with or without "cause", as therein defined, or by Mr. Barrett with or without "good reason", as therein defined with severance payable to Mr. Barrett upon termination by the FHLBank of Boston without "cause" or resignation by Mr. Barrett with "good reason." Under the terms of the employment agreement with Mr. Barrett, in the event that the FHLBank of Boston terminates Mr. Barrett's employment for any reason other than "cause" or "disability", as both are defined in the employment agreement, or upon Mr. Barrett's termination of his employment for "good reason", as defined in the employment agreement, Mr. Barrett may, after Mr. Barrett executes and delivers a

general release of claims to the FHLBank of Boston, receive (a) one year of salary continuation paid pursuant to the FHLBank of Boston's normal payroll schedule, (b) a pro-rata payment of the short-term and deferred incentive opportunity at the "President" tier under the executive incentive plan in effect in the year of termination, calculated and payable under such plan as if he had met all employment-related requirements for payment as a retiree, (c) a payment of then-unpaid deferred incentive awards under prior executive incentive plans, calculated and payable under such plans at the time he would have received payment if he had remained employed by the FHLBank of Boston, and (d) certain healthcare replacement costs for a period of twelve months and other amounts required to be paid or provided under any other FHLBank of Boston plan, program, policy or practice, or contract or agreement.

The FHLBank of Boston maintains an Executive Change in Control Severance Plan (Executive Severance Plan). The purpose of the Executive Severance Plan is to provide stability to the FHLBank of Boston in the event of a change in control and to facilitate hiring and retention of senior management by providing them with certain protections and benefits in the event of a qualifying termination following a change in control of the FHLBank of Boston. Outside of a change in control period (as defined in the Executive Severance Plan), the FHLBank of Boston has the right to revise, modify or terminate the plan in whole or in part at any time without the consent of any participant. During a change in control period (or such longer period until all payments and benefits, if any, which become due under the plan have been paid), however, any revision, modification, or termination that would impact benefits to a participant would require the consent of that participant.

FHLBank of New York. The FHLBank of New York is an "at will" employer and does not provide written employment agreements to any of its employees except for executive change in control agreements for certain senior executives. However, employees, including the president, receive:

- cash compensation (i.e., base salary, and, for exempt employees, "variable" or "at risk" short-term incentive compensation);
- retirement-related benefits (i.e., qualified defined benefit plan; qualified defined contribution plan; and the nonqualified defined benefit portion of the benefit equalization plan); and
- health and welfare programs and other benefits.

Other benefits, which are available to all regular employees, include medical, dental, vision care, life, business travel accident, and short- and long-term disability insurance, flexible spending accounts, an employee assistance program, educational development assistance, voluntary life insurance, long term care insurance, fitness club reimbursement, and severance pay. An additional benefit offered to all officers who are at vice-president rank or above is a physical examination every 18 months.

In addition, Mr. González and the FHLBank of New York have entered into an Employee Change in Control Agreement (CIC Agreement), which is intended to provide Mr. González with certain severance payments and benefits in the event his employment is terminated in connection with a "change in control" of the FHLBank of New York. Certain other senior officers have also entered into CIC Agreements with the FHLBank of New York. The CIC Agreements were executed January 2016, and renewed in January 2022, for an additional three years from the date the CIC Agreement is executed. Under the terms of the CIC Agreements, if the executive's employment with the FHLBank of New York is terminated by the FHLBank of New York without "cause" or by the executive for "good reason" (as such terms are defined in the CIC Agreement) during the period beginning on the earliest of (a) twelve months prior to the execution by the FHLBank of New York of a definitive agreement regarding a change in control, (b) twelve months prior to change in control mandated by federal statute, rule or directive, (c) twelve months prior to the adoption of a plan or proposal for the liquidation or dissolution of the FHLBank of New York, and ending, in all cases, twenty-four months following the effective date of the change in control, the executive becomes entitled to certain severance payments and benefits.

FHLBank of Pittsburgh. In the event of a merger of the FHLBank of Pittsburgh with another FHLBank, where the merger results in the termination of employment (including resignation for "good reason" as defined under the

change in control agreement) for the CEO, the CEO is eligible for severance payments under his change in control agreement. Such severance is in lieu of severance under his separate severance agreement. The separate severance agreement continues to apply to employment terminations other than those resulting from an FHLBank merger. Benefits under the CIC agreement for the CEO is as follows:

- 2.99 times base salary;
- A payment of 2.99 times target incentive award opportunity in the year of termination, a pro-rated incentive payment in the year of termination and a payment equal to the additional benefit that the CEO would have received under the FHLBank's qualified and nonqualified retirement plans calculated as if the CEO had three additional years of both age and service at the time of separation from the FHLBank;
- An amount equal to three times six percent of the CEO's annual compensation (as defined in the Supplemental Thrift Plan) at the time of separation from the FHLBank;
- Taxable compensation equivalent to the FHLBank's monthly contribution to its active employees' medical plan coverage for the benefits continuation period of 18 months; and
- Individualized outplacement service for a maximum of 12 months and financial planning.

FHLBank of Atlanta. The FHLBank of Atlanta entered into an Employment Agreement with Mr. Malmberg, effective April 20, 2021 (Malmberg Agreement). Under the Malmberg Agreement, Mr. Malmberg's employment with the FHLBank of Atlanta may be terminated by the FHLBank of Atlanta, with or without "cause," or by Mr. Malmberg with or without "good reason," as defined in the Malmberg Agreement. Unless earlier terminated by either party as provided therein, the Malmberg Agreement had an initial three-year term and will continue to extend automatically for subsequent one-year periods unless either party elects not to renew. If during the term of his employment Mr. Malmberg is terminated without "cause" or resigns for "good reason," the Malmberg Agreement provides for severance pay in an amount equal to: (1) his then-current annual base salary, payable in a lump sum within 30 days after Mr. Malmberg executes and delivers a general release of claims to the FHLBank of Atlanta, and (2) an amount equal to the amount that would have been payable pursuant to his incentive compensation award for the year in which the termination occurs, prorated based upon the number of days Mr. Malmberg was employed that year. The incentive compensation award is based upon the FHLBank of Atlanta's actual performance for the year in which the termination occurs and is payable at the same time that such awards are paid to the FHLBank of Atlanta's senior executives. In addition, Mr. Malmberg is entitled to receive certain health care replacement costs and other amounts required to be paid or provided under any other FHLBank of Atlanta plan, program, policy or practice or contract or agreement. The Malmberg Agreement does not provide for any severance pay in the event of a termination with "cause," a termination on account of his death or disability, or his resignation without "good reason."

FHLBank of Cincinnati. The FHLBank of Cincinnati does not provide written employment agreements to any of its employees. Other than normal pension benefits and eligibility to participate in the FHLBank of Cincinnati's retiree medical and life insurance program, no perquisites, tax gross-ups or other special benefits are provided to Mr. Howell in the event of a resignation, retirement or other termination of employment. However, Mr. Howell may receive certain benefits under the FHLBank of Cincinnati's severance policy and Change in Control Plan, described below.

Under the FHLBank of Cincinnati's severance policy, all employees may receive benefits in the event of termination of employment resulting from job elimination, substantial job modification, job relocation, or a planned reduction in staff. In accordance with this policy, Mr. Howell is entitled to six months' severance pay, as well as payment for all unused, accrued vacation benefits. Mr. Howell may also receive outplacement assistance as well as continuation of health insurance coverage on a limited basis.

Under the FHLBank of Cincinnati's Change in Control Plan for officers designated by the Board of Directors, certain payments and benefits are provided in the event of a qualifying termination within 24 months following a change in control. Change in control benefit payments are in lieu of, not in addition to, the severance benefit payments described above. In the event of a qualifying termination, Mr. Howell will receive a severance payment equal to 2.50 times his base salary and target annual incentive amount for the year in which the Change in Control occurs. Mr. Howell will also receive a lump sum cash payment equal to accrued vacation benefits and the amount that would have been payable pursuant to his annual incentive compensation award for the year in which the date of a qualifying termination occurs based on the FHLBank of Cincinnati's actual performance, prorated based on the number of days Mr. Howell was employed that year. In addition, he will receive a cash payment of \$7,500 for outplacement assistance, as well as 24 months of continued health care coverage.

FHLBank of Indianapolis. The FHLBank of Indianapolis maintains a key employee severance agreement for Ms. Konich. If a termination occurs under certain circumstances, Ms. Konich is entitled to 2.99 times the average of the three prior calendar years' base salary (less salary deferral), bonus, and other cash compensation, salary deferrals and employer matching contributions to the qualified and non-qualified defined contribution plans, the taxable portion of an automobile allowance (if any), continued medical and dental insurance coverage for 36 months (subject to Ms. Konich paying the employee portion of the cost of such coverage), a gross-up amount to cover the increased tax liability (if any), an additional three years credit to age and years of service for the supplemental executive retirement plan, and reimbursement for reasonable legal, accounting, financial advisory, and actuarial services. If the FHLBank of Indianapolis is not in compliance with any applicable regulatory capital or regulatory leverage requirement at the time payment under the agreement becomes due, or if the payment would cause the FHLBank of Indianapolis to fall below applicable regulatory requirements, the payment would be deferred until such time as the FHLBank of Indianapolis achieves compliance with its regulatory requirements. Moreover, if the FHLBank of Indianapolis was insolvent, had a receiver or conservator appointed, or was in "troubled condition" at the time payment under this agreement became due, the FHFA could deem such a payment to be subject to its rules limiting golden parachute payments.

FHLBank of Chicago. The FHLBank of Chicago entered into an employment agreement with Mr. Ericson effective January 1, 2021. The employment agreement provides for a four-year employment term ending December 31, 2024, unless terminated earlier as provided for in the agreement. The employment agreement provides for automatic one-year extensions until such date as the FHLBank of Chicago Board of Directors or Mr. Ericson elects not to renew the agreement.

The employment agreement allows Mr. Ericson to participate in the FHLBank of Chicago's president and executive team incentive compensation plan. In addition, Mr. Ericson is entitled to participate in the FHLBank of Chicago's health insurance, life insurance, retirement, and other benefit plans that are generally applicable to the FHLBank of Chicago's other senior executives. Under the employment agreement, Mr. Ericson is responsible for the payment of all federal, state and local income and other taxes that may be due with respect to any payments made to him pursuant to the employment agreement, although if any provision of the employment agreement would cause Mr. Ericson to incur any additional tax or interest under Section 409A of the Code, then the FHLBank of Chicago may reform such provision provided that it maintains (to the maximum extent practicable), the original intent of the applicable provision.

Under the employment agreement, in the event Mr. Ericson's employment with the FHLBank of Chicago were terminated by him through retirement (as defined in the employment agreement), Mr. Ericson would be entitled to receive the following payments and benefits:

1. all accrued and unpaid salary for time worked as of the date of termination;
2. all accrued but unutilized vacation time as of the date of termination;

3. a lump sum payment in an amount equal to the incentive compensation he would have otherwise been entitled to for:
 - a. the total incentive award (both annual award and deferred award) under the FHLBank of Chicago's president and executive team incentive compensation plan for the year in which termination occurs, calculated as if all performance targets for the current annual and deferral award period had been met at the target award level and prorated based on the number of full months Mr. Ericson was employed during the year of termination, divided by 12, and
 - b. any previously deferred award (50% of the total incentive award) under the FHLBank of Chicago's president and executive team incentive compensation plan not subject to proration or further adjustments based on performance target achievement during the deferral period;

as determined without any regard to whether Mr. Ericson's termination affects his eligibility to receive an incentive award; provided, however that the human resources and compensation committee of the FHLBank of Chicago may, in its discretion, reduce or eliminate any incentive compensation amounts paid under this item (3) for any of the circumstances set forth in Section 5.3(b)(1)-(3) or (5) the president and executive team incentive compensation plan, to the extent the circumstances existed at or before the time Mr. Ericson provided notice of termination, as applicable, and

4. participation in the FHLBank of Chicago's retiree health care benefit plans for Mr. Ericson and his spouse, in accordance with the terms of the FHLBank of Chicago Description of Retiree Medical Coverage.

If Mr. Ericson's employment with the FHLBank of Chicago is terminated by resignation other than for good reason (as described in the employment agreement), Mr. Ericson will be entitled to the payments in items (1) through (3) above. If Mr. Ericson's employment with the FHLBank of Chicago is terminated by the Board for cause (as defined in the employment agreement), Mr. Ericson will be entitled only to the amounts in items (1) and (2) above. If Mr. Ericson's employment with the FHLBank of Chicago is terminated: (a) by reason of death or disability (as defined in the employment agreement), (b) by the FHLBank of Chicago other than for Cause, (c) by Mr. Ericson by resignation for good reason, or (d) by the FHLBank of Chicago by non-renewal of the employment agreement, Mr. Ericson will be entitled to the payments in items (1) through (3) above, as well as salary continuation (at the base salary in effect at the time of termination) for a period of one year, and continued participation in the FHLBank of Chicago's employee health care benefit plans for Mr. Ericson and his spouse, in accordance with the terms of the FHLBank of Chicago's severance plan that would be applicable if Mr. Ericson's employment had been terminated pursuant to such plan (provided, however, the FHLBank of Chicago shall continue paying the employer's portion of Mr. Ericson's medical and/or dental insurance premiums, if Mr. Ericson had been participating in either or both programs for one year prior to termination.)

The employment agreement provides that Mr. Ericson would not be entitled to any other compensation, bonus, incentive, or severance pay from the FHLBank of Chicago other than as specified above and any vested rights which he has under any pension, thrift, or other benefit plan, excluding the severance plan, and, for termination by all means except for cause, the president and executive team incentive compensation plan.

The right to receive certain termination payments as outlined above is contingent upon, among other things, Mr. Ericson signing a general release of all claims against the FHLBank of Chicago in such form as the FHLBank of Chicago requires.

FHLBank of Des Moines. The FHLBank of Des Moines entered into an employment agreement with Kristina K. Williams, effective on January 20, 2020, in order to establish her duties and compensation and to provide for her employment as President and CEO of the FHLBank of Des Moines.

The employment agreement provides that the FHLBank of Des Moines would initially pay Ms. Williams a base salary of \$850,000, subject to adjustment as described in the employment agreement.

Ms. Williams' incentive target will generally not be set lower than 85 percent of her base salary. The FHLBank of Des Moines paid, or reimbursed Ms. Williams for, all reasonable relocation expenses incurred by Ms. Williams in relocation to the Des Moines area up to a maximum of \$250,000. Ms. Williams will also be eligible for certain perquisites, including a car allowance in the amount of \$750 per month.

Ms. Williams' employment agreement provides that:

- the FHLBank of Des Moines or Ms. Williams may terminate employment for any reason (other than Good Reason or Cause) following 60 days written notice to the other party;
- the FHLBank of Des Moines may terminate for Cause immediately following written notice to Ms. Williams;
- and Ms. Williams may terminate for Good Reason following written notice to the FHLBank of Des Moines;
- in each case, in accordance with the procedures set forth in the employment agreement.

Amounts payable under the employment agreement are subject to reduction in the event the amounts constitute an "excess parachute payment" under Section 280G of the Internal Revenue Code.

If Ms. Williams' employment is terminated by the FHLBank of Des Moines for Cause or by Ms. Williams without Good Reason, the employment agreement entitles Ms. Williams to the following:

- i. base salary accrued through the date of termination;
- ii. accrued but unpaid incentive plan award(s) earned in a year prior to the year of termination and due to be paid in the year in which termination occurs;
- iii. accrued and earned vacation through the date of termination; and/or
- iv. all other vested benefits under the terms of the FHLBank of Des Moines' employee benefit plans, subject to the terms of such plans.

If Ms. Williams' employment is terminated by the FHLBank of Des Moines without Cause or by Ms. Williams for Good Reason, or following a change in control, in addition to the payouts previously mentioned related to termination for cause or without good reason, the employment agreement entitles Ms. Williams to severance payments equal to a multiple of Ms. Williams' base salary as follows:

- i. two times the annual base salary in effect on the date of termination for Ms. Williams, or, in the case that the termination occurs within 24 months following a Change of Control, 2.99 times the annual base salary in effect on the date of termination for Ms. Williams;
- ii. one times Ms. Williams' targeted non-deferred executive incentive plan award in effect for the calendar year in which the date of termination occurs, or, in the case that the termination occurs within 24 months following a Change in Control, 2.99 times the targeted non-deferred plan award in effect for the calendar year in which the date of termination occurs for Ms. Williams;
- iii. the executive incentive plan award for the calendar year in which the date of termination occurs and prorated for the portion of the calendar year in which Ms. Williams was employed;
- iv. the accrued but unpaid incentive plan awards covering periods prior to the one in which Ms. Williams' employment was terminated, calculated in accordance with the terms of the incentive plan as if termination was due to death or disability; and

- v. any benefits mandated under any applicable health care continuation laws, provided that the continuing FHLBank will continue paying its portion of the medical and/or dental insurance premiums for Ms. Williams for the one-year period following the date of termination.

If Ms. Williams' employment was terminated due to death, disability, or qualifying retirement, in addition to the payouts described in termination for cause or without good reason, she would also be entitled to the following:

- i. the executive incentive plan award for the calendar year in which the date of termination occurs and prorated for the portion of the calendar year in which Ms. Williams was employed;
- ii. to the extent not already paid to Ms. Williams, the accrued but unpaid incentive plan awards covering periods prior to the one in which Ms. Williams' employment was terminated; and
- iii. other coverage continuation rights that are available to such employees upon death disability, or retirement, as provided for under the terms of such plans.

FHLBank of Dallas. On March 24, 2015, the FHLBank of Dallas entered into an employment agreement with Mr. Bhasin. This agreement was authorized and approved by the Compensation and Human Resources Committee of the Board of Directors and the Board of Directors and resulted from the Board's desire to retain Mr. Bhasin's services for no less than the one-year term of the agreement. On each yearly anniversary thereafter, Mr. Bhasin's employment agreement automatically renews for an additional one-year term unless either the FHLBank of Dallas or Mr. Bhasin gives a notice of non-renewal not less than 30 days prior to the expiration date. Because neither the FHLBank of Dallas nor Mr. Bhasin gave a notice of non-renewal, his employment agreement was, on March 24, 2022, automatically extended through March 23, 2023. Under the terms of the employment agreement, in the event that Mr. Bhasin's employment with the FHLBank of Dallas is terminated either by Mr. Bhasin for good reason or by the FHLBank of Dallas other than for cause, or in the event that the FHLBank of Dallas gives notice of non-renewal while Mr. Bhasin is willing and able to continue employment on the same terms, Mr. Bhasin shall be entitled to receive the following severance benefits in addition to those payable under any applicable incentive and benefit programs in effect at the time of termination and in accordance with their terms:

- base salary continuation (at the base salary in effect at the time of termination) for 12 months;
- a pro-rata portion of his non-equity incentive plan compensation for the year in which his termination occurs, based on actual performance for such year; and
- continuation of any elective group health and dental insurance benefits that are being provided to him as of his termination date for a period of 12 months.

FHLBank of Topeka. The FHLBank of Topeka entered into a change in control agreement with Mr. Yardley on June 19, 2015. The Change in Control Plan provides that, upon both a change in control and the termination of a participant that qualifies as a change in control termination, a participant will be entitled to a cash lump sum payment. A Change in Control means the occurrence of any of the following events, provided it shall not include any reorganization that is mandated by any Federal statute, rule, regulations or directive: (1) the merger, reorganization, or consolidation of FHLBank Topeka with or into another FHLBank or other entity; (2) the sale or transfer of all or substantially all of the business or assets of FHLBank Topeka to another FHLBank of other entity; (3) the purchase by FHLBank Topeka or transfer to FHLBank Topeka of substantially all of the business or assets of another FHLBank; (4) a change in the composition of the Board of Directors, as a result of one or a series of related transactions, that causes the combined number of member Directors from states of Colorado, Kansas, Nebraska and Oklahoma to cease to constitute a majority of the Directors of FHLBank Topeka; or (5) the liquidation or dissolution of FHLBank Topeka. The cash lump sum payment is an amount that, when combined with any amount payable under an FHLBank Topeka severance policy, equals a compensation multiplier of 2.99 times (i) his then annualized base salary, and (ii) an amount equal to the target Total Base Opportunity as reflected in FHLBank

Topeka's Executive Incentive Compensation Plan Targets document for the year in which the change in control occurs. He is also eligible to receive the continuation of certain group health care benefits for a period of years equal to his compensation multiplier. On June 22, 2017, FHLBank of Topeka's Compensation Committee approved Mr. Yardley's current compensation multiplier of 2.99. From June 19, 2015 through June 22, 2017, Mr. Yardley's compensation multiplier was 2.00.

The FHLBank of Topeka also provides severance benefits to Mr. Yardley pursuant to the FHLBank of Topeka's Executive Officer Severance Policy. The policy's primary objective is to provide a level of protection to Named Executive Officers from loss of income during a period of unemployment. Mr. Yardley is eligible to receive severance pay under the policy if the FHLBank of Topeka terminates his employment with or without cause, subject to certain limitations. These limitations include: (1) the officer voluntarily terminates employment, including disability or death; or (2) the officer's employment is terminated by the FHLBank of Topeka for misconduct. As of December 31, 2021, provided the requirements of the policy are met and Mr. Yardley provides the FHLBank of Topeka an enforceable release, he will receive severance pay equal to 12 months of his final annual base salary, absent a qualifying event that would result in payments under the Change in Control Plan. He is also eligible to receive the continuation of certain group health care benefits for a period of 12 months.

FHLBank of San Francisco. The FHLBank of San Francisco entered into an employment agreement with Teresa Bryce Bazemore dated February 19, 2021, with an initial term of three years and one-year terms thereafter, unless terminated at any time by either the FHLBank of San Francisco or Ms. Bazemore. Under the terms of the agreement, Ms. Bazemore will initially receive a base annual salary of \$875,000; and a sign-on payment of \$100,000 paid in the following installments: \$50,000 shall be paid 30 days from the start of her employment and \$50,000 shall be paid six months from the start of her employment, which installments are subject to clawbacks in certain circumstances.

The employment agreement provides for a severance payment equal to (i) two times her "Salary" (as defined in her employment agreement); and (ii) two times her "Annual Incentive Amounts" (as defined in her employment agreement) and continued benefits if Ms. Bazemore's employment is terminated under certain circumstances in connection with a "Change in Control" (as defined in her employment agreement) of the FHLBank of San Francisco.

Ms. Bazemore will also be eligible to participate in the FHLBank of San Francisco's various executive incentive and employee benefit plans, including the FHLBank of San Francisco's Executive Incentive Plan (EIP), and Supplemental Executive Retirement Plan (SERP). Under Ms. Bazemore's employment agreement, the amount of FHLBank of San Francisco annual contribution credits under the SERP will be as follows: 25% of total annual compensation for less than 5 years of credited service; and 35% of total annual compensation for 5 or more years of credited service. Under Ms. Bazemore's employment agreement, the FHLBank of San Francisco will provide reimbursement of her relocation costs up to \$250,000.

The employment agreement also provides that if Ms. Bazemore's employment is terminated due to the expiration of the initial three-year term and the FHLBank of San Francisco Board decided not to extend her employment for any additional term, Ms. Bazemore would be entitled to all "Accrued Benefits" (as defined in her employment agreement) and to receive a severance payment equal to twelve (12) months of base salary and a pro-rata portion of the EIP award for the year in which the termination occurs; and all "Deferred Awards" will be treated as fully vested (Severance Payment).

The employment agreement further provides that if Ms. Bazemore was terminated without "Cause" (as defined in her employment agreement) or if she terminated her employment for "Good Reason" (as defined in her employment agreement) at any time, Ms. Bazemore would be entitled to receive severance payments equal to: the Severance Payment and all "Accrued Benefits".

Upon the appointment of Ms. Bazemore as the FHLBank of San Francisco's President and Chief Executive Officer effective March 15, 2021, Stephen P. Traynor no longer served as the FHLBank of San Francisco's acting President and Chief Executive Officer. Mr. Traynor had a compensation arrangement with the FHLBank of San Francisco relating to his service as acting President and Chief Executive Officer, which provided that he would accrue a special award at a rate of \$45,833.33 per month (in addition to his base salary) beginning March 1, 2020 and continuing through the last business day prior to the date on which a permanent Chief Executive Officer commences employment at the FHLBank of San Francisco. For a discussion of Mr. Traynor's compensation arrangement, see the Federal Home Loan Banks Combined Financial Report for the year ended December 31, 2020.

Table S-3 presents all other compensation information for each of the FHLBank Presidents and the Office of Finance CEO.

Table S-3 - All Other Compensation

(whole dollars)

FHLBank*	President/CEO Name	Year	Termination of Employment or Change of Control if Triggered	Contribution or Other Allocations Made by the Employer to Vested and/or Unvested Defined Contribution Plans	Dollar Value of any Insurance Premiums Paid by the Employer with Respect to Life Insurance for the Benefit of the President/CEO	Gross-ups or Other Amounts Reimbursed for the Payment of Taxes	Perquisites and Other Personal Benefits*	Other	Total
Boston	Timothy J. Barrett	2021	\$ —	\$ 38,740	\$ —	\$ —	\$ —	\$ —	\$ 38,740
	Edward A. Hjerpe III(1)	2021	—	91,770	—	—	11,043	96,952	199,765
		2020	—	110,028	—	—	—	—	110,028
		2019	—	104,930	—	—	11,929	—	116,859
New York	José R. González(2)	2021	—	89,640	480	—	15,191	—	105,311
		2020	—	93,077	720	—	15,947	63,308	173,052
		2019	—	59,429	720	—	10,084	75,000	145,233
Pittsburgh	Winthrop Watson	2021	—	80,690	—	—	—	5,325	86,015
		2020	—	79,159	—	—	—	5,321	84,480
		2019	—	75,196	—	—	—	5,058	80,254
Atlanta	Kirk Malmberg(3)	2021	—	105,000	43	676	12,611	—	118,330
	W. Wesley McMullan(4)	2021	—	22,800	43	646	16,117	91,383	130,989
		2020	—	59,192	43	43	26,716	—	85,994
Cincinnati	Andrew S. Howell(5)	2019	—	56,100	43	43	23,572	—	79,758
		2021	—	17,400	—	—	19,593	—	36,993
		2020	—	17,100	—	—	18,997	—	36,097
Indianapolis	Cindy L. Konich	2019	—	16,800	—	—	20,244	—	37,044
		2021	—	57,597	1,785	98	—	—	59,480
		2020	—	59,804	1,785	289	—	—	61,878
Chicago	Michael A. Ericson(6)	2019	—	55,920	1,917	861	10,912	—	69,610
		2021	—	17,400	556	—	—	—	17,956
		2020	—	78,100	—	—	127,310	—	205,410
Des Moines	Kristina K. Williams(7)	2021	—	611,648	—	—	11,870	—	623,518
		2020	—	78,100	—	—	127,310	—	205,410
		2019	—	55,920	1,917	861	10,912	—	69,610
Dallas	Sanjay Bhasin	2021	—	57,035	—	—	—	—	57,035
		2020	—	54,570	—	—	—	—	54,570
		2019	—	51,300	—	—	—	—	51,300
Topeka	Mark Yardley	2021	—	95,871	855	—	—	9,226	105,952
		2020	—	88,682	855	—	—	9,484	99,021
		2019	—	52,659	855	—	—	8,776	62,290
San Francisco	Teresa Bryce Bazemore(8)	2021	—	41,761	714	—	—	118,475	160,950
	Stephen P. Traynor(8)	2021	—	21,257	655	—	—	478,915	500,827
		2020	—	28,200	786	—	—	10,453	39,439
Office of Finance	Randolph C. Snook(9)	2021	—	34,700	—	—	12,044	—	46,744
		2020	—	35,325	—	—	105,339	—	140,664
		2019	—	17,662	—	—	119,382	—	137,044

* Only individual amounts greater than \$25,000 are required to be disclosed in the footnotes.

- (1) Perquisites and other personal benefits amount for Mr. Hjerpe includes the following: personal use of an FHLBank of Boston-owned vehicle, parking, reimbursement for mass transportation, spousal travel expenses, and travel memberships and subscriptions. Other amount includes \$79,452 paid for accrued but unused vacation time and \$17,500 paid for performance under the Consulting Agreement between the FHLBank of Boston and Mr. Hjerpe dated December 1, 2021.
- (2) Perquisites and other personal benefits amount for 2021, for Mr. González includes the following: funds matched in connection with the Pentegra Defined Contribution Plan for Financial Institutions, funds matched in connection with the Pentegra Nonqualified Defined Contribution Portion of the BEP, payment of group term life insurance premium, and payment of long term disability insurance premium.
- (3) During 2021, the FHLBank of Atlanta provided Mr. Malmberg a \$10,500 car allowance. The remainder of perquisites for Mr. Malmberg are attributable to the FHLBank of Atlanta's payment of guest travel to certain business functions, certain activities at business functions, and premiums for the FHLBank of Atlanta's Business Travel Accident and Death and Dismemberment Policy. Perquisites are valued at the actual amounts paid by the FHLBank of Atlanta and the value of each perquisite was less than \$25,000.
- (4) During 2021, the FHLBank of Atlanta provided Mr. McMullan a \$7,500 car allowance, \$3,000 in matching contributions to the FHLBank of Atlanta's Once For All charitable giving program and a \$4,268 reimbursement for financial planning services. The remainder of perquisites for Mr. McMullan are attributable to the FHLBank of Atlanta's payment of guest travel to certain business functions, certain activities at business functions, and premiums for the FHLBank of Atlanta's Business Travel Accident and Death and Dismemberment Policy. Perquisites are valued at the actual amounts paid by the FHLBank of Atlanta and the value of each perquisite was less than \$25,000.
- (5) Perquisites and other benefits amount for Mr. Howell includes the following: personal use of an FHLBank of Cincinnati-owned vehicle, premiums for an Executive long-term disability plan, guest travel expenses, and an airline program membership.
- (6) The FHLBank of Chicago Board of Directors named Mr. Michael A. Ericson President and Chief Executive Officer of the FHLBank of Chicago, effective January 1, 2021.
- (7) Perquisites and other personal benefits amount for Ms. Williams included a car allowance of \$9,000 and reimbursement for financial planning assistance of \$2,870. Ms. Williams received an additional BEP DC Plan contribution of \$525,000 in 2021, following the completion of one year of employment with the FHLBank of Des Moines.
- (8) Stephen P. Traynor retired from the FHLBank of San Francisco effective October 1, 2021, received a severance payment of \$470,000. Teresa Bryce Bazemore was appointed President and Chief Executive Officer of the FHLBank of San Francisco effective March 15, 2021, and was reimbursed for relocation expenses in the amount of \$112,903.
- (9) Perquisites and other personal benefits amount for 2021, for Mr. Snook includes \$1,000 per month automobile allowance and reimbursement of relocation costs in the amount of \$44. Perquisites and other personal benefits amount for 2020, for Mr. Snook includes \$1,000 per month automobile allowance and reimbursement of relocation costs in the amount of \$93,339.

Table S-4 presents grants of plan-based awards information for each of the FHLBank Presidents and the Office of Finance CEO.

Table S-4 - Grants of Plan-Based Awards

(whole dollars)

FHLBank	President/CEO Name		Estimated Future Payouts under Non-Equity Incentive Plan Awards		
			Threshold	Target	Maximum
Boston	Timothy J. Barrett	(1)(2)	\$ 217,500	\$ 326,250	\$ 435,000
		(1)(2)	217,500	326,250	435,000
	Edward A. Hjerpe III	(1)(3)	215,448	323,172	430,896
		(1)(3)	215,448	323,172	430,896
New York	José R. González	(4)	498,000	796,800	996,000
Pittsburgh	Winthrop Watson	(5)	277,517	346,897	462,529
		(5)	346,896	433,620	578,160
Atlanta	Kirk Malmberg	(6)	218,750	328,125	437,500
		(7)	218,750	328,125	437,500
	W. Wesley McMullan	(6)	95,000	142,500	190,000
		(7)	95,000	142,500	190,000
Cincinnati	Andrew S. Howell	(8)	225,000	337,500	450,000
		(9)	225,000	337,500	450,000
Indianapolis	Cindy L. Konich	(10)	11,999	383,978	479,973
		(11)	340,109	453,478	566,848
Chicago	Michael A. Ericson	(12)	255,000	340,000	425,000
		(13)	318,750	425,000	531,250
Des Moines	Kristina K. Williams	(14)	225,250	382,925	450,500
		(15)	225,250	382,925	450,500
Dallas	Sanjay Bhasin	(16)	237,647	356,471	475,295
		(17)	237,648	356,471	475,294
Topeka	Mark Yardley	(18)	135,938	271,875	407,813
		(19)	135,937	271,875	407,812
San Francisco	Teresa Bryce Bazemore	(20)	175,000	280,000	350,000
		(20)	175,000	280,000	350,000
	Stephen P. Traynor	(20)	70,550	114,650	149,950
		(20)	70,550	114,650	149,950
Office of Finance	Randolph C. Snook	(21)	252,268	336,357	420,446
		(22)	252,268	336,357	420,446

- (1) Represents estimated payouts of total awards earned under the 2021 Executive Incentive Plan with 50% paid in March 2022, and payment of the remaining 50% deferred until after year end 2023.
- (2) Reflecting his efforts in the leadership transition following the Board of Director's August 2021 selection of Mr. Barrett as the FHLBank of Boston's next President and Chief Executive Officer, the Compensation Committee of the Board of Directors awarded Mr. Barrett a prorated 2021 incentive award based on (a) his salary and award opportunity as Executive Vice President and Treasurer through August 31, 2021, and (b) his salary and award opportunity as if his tenure as President and Chief Executive Officer had commenced on September 1, 2021, through December 31, 2021.
- (3) The Compensation Committee approved a pro-rata payment under the 2021 Executive Incentive Plan for Mr. Hjerpe, who retired on November 30, 2021.
- (4) The deferred portion of the incentive compensation plan provides that 50% of the total communicated award, if any, under the plan year communicated to the FHLBank of New York management committee participants will ordinarily be paid by the middle of March following the Plan year. The remaining 50% will be deferred (the "Deferred Incentive Award"), subject to certain additional conditions specified in the Plan, such that 33 1/3% of the Deferred Incentive Award will ordinarily be paid by the middle of March of the following three years.
- (5) Payment of each deferred incentive award installment is contingent on the CEO meeting the required criteria and the FHLBank of Pittsburgh meeting the stated bank performance criteria. For the 2020 Plan, the first year payout is 50% of the award amount and then 33 1/3% of the remaining 50% in each deferral installment over the next three years based on whether or not the stated payment criteria were met. The deferred amount for each of the years 2022, 2023, and 2024 is 125% of the maximum deferred amount if both MV/CS and retained earnings levels are maintained, which the FHLBank of Pittsburgh has assumed is met in each year for purposes of this calculation.
- (6) Represents threshold, target, and maximum payment opportunities under FHLBank of Atlanta's incentive compensation plan for the fiscal year ended December 31, 2021.
- (7) Represents fifty percent of the payment opportunity subject to mandatory deferral.
- (8) Represents the estimated annual payout under the FHLBank of Cincinnati's 2021 incentive plan for the period of January 1, 2021 through December 31, 2021, which is 50% of the award opportunity.
- (9) Represents the estimated mandatorily deferred payout under the FHLBank of Cincinnati's 2021 incentive plan for the period of January 1, 2022 through December 31, 2024, which is 50% of the award opportunity. If the FHLBank of Cincinnati operates in a safe and sound manner according to its specified metric during the deferred performance period, the final value will be 100% of the deferred award plus interest.
- (10) Represents the estimated payout range of the annual portion of the incentive compensation plan for January 1, 2021 through December 31, 2021, for the FHLBank of Indianapolis. The threshold payout is the amount expected to be paid when meeting the threshold for the smallest weighted of the components. There is no guaranteed payout under the annual award provisions of the incentive plan. Therefore, the minimum that could be paid out under this plan is \$0.
- (11) Represents the estimated payout under the deferred portion of the incentive compensation plan for the FHLBank of Indianapolis; payout is based upon the annual portion of the incentive compensation plan and is further dependent on attaining the threshold over the 3-year deferral period (2022-2024).
- (12) Represents the potential annual award payouts under FHLBank of Chicago's president and executive team incentive compensation plan for the period from January 1, 2021 through December 31, 2021. Under this plan, 50% of the total incentive award is an annual award payable at the end of a one-year performance period.
- (13) Represents the deferred award granted under FHLBank of Chicago's president and executive team incentive compensation plan for the period from January 1, 2022 through December 31, 2024, based on actual performance for 2021. Under this plan, 50% of the total incentive award is a deferred award which will be payable at the end of a three-year deferral period (subject to adjustment based upon achievement of certain performance requirements).
- (14) Represents the estimated payout range of the annual short-term incentive compensation plan for the FHLBank of Des Moines for January 1, 2021 through December 31, 2021.
- (15) Represents estimate of deferred incentive compensation for the FHLBank of Des Moines for the four-year performance cycle beginning January 1, 2021, and ending December 31, 2024.
- (16) Represents the estimated payout range of the current award, representing 50% of the annual award under the FHLBank of Dallas' executive incentive plan. The current award became earned and vested on December 31, 2021.
- (17) Represents the estimated payout range of the deferred award, representing 50% of the annual award under the FHLBank of Dallas' executive incentive plan. The deferred award will become earned and vested on December 31, 2024, if certain safety and soundness goals are satisfied during the three-year deferral performance period, which runs from January 1, 2022 through December 31, 2024. Mr. Bhasin's deferred award will earn interest at 6% compounded annually over the three-year deferred performance period. The estimated payment amounts exclude interest on the deferred award.
- (18) Represents the estimated payout range of the cash incentive of the executive incentive compensation plan for January 1, 2021 through December 31, 2021, for the FHLBank of Topeka.
- (19) Represents the estimated payout range of deferred incentive opportunity of the executive incentive compensation plan for the FHLBank of Topeka for the three-year performance period beginning January 1, 2022 through December 31, 2024. Payments are calculated using the base salary in effect on January 1, at the beginning of the performance period. Awards, if any, under this plan are payable in the year following the end of the three-year deferral performance period. Mr. Yardley's deferred award will earn interest at 6% compounded annually over the three-year deferred performance period. The estimated payment amounts exclude interest on the deferred award.
- (20) Represents the estimated awards for the "Year-End Award" and the "Deferred Award" each of which represents 50% of the total "Annual Awards" under the FHLBank of San Francisco's Executive Incentive Plan (EIP) for 2021, that could have been earned by Ms. Bazemore and Mr. Traynor for 2021.
- (21) Represents estimated payout under the executive incentive plan, approved by the Office of Finance Board of Directors for January 1, 2021 through December 31, 2021, which has two components: 50% annual and 50% deferred. These amounts represent the award opportunity for the annual portion payable in 2022.
- (22) Represents estimated payout for the deferred component under the executive incentive plan, approved by the Office of Finance Board of Directors for January 1, 2021 through December 31, 2021, which has two components: 50% annual and 50% deferred. Subject to the Office of Finance Board of Directors approval, the deferred portion is payable in three annual installments of 33.3% in 2023, 33.3% in 2024, and the remaining amount in 2025.

Table S-5 presents pension benefits for each of the FHLBank Presidents and the Office of Finance CEO at December 31, 2021, as applicable.

Table S-5 - Pension Benefits at December 31, 2021

(whole dollars)

FHLBank	President/CEO Name	Plan Name*	Number of Years Credited Service	Present Value of Accumulated Benefit	Payments During 2021
Boston	Timothy J. Barrett(1)	Pentegra DBP	10.2	\$ 894,000	\$ —
		BEP	11.2	1,269,000	—
	Edward A. Hjerpe III(1)	Pentegra DBP	29.8	2,731,000	—
		BEP	12.6	—	(5,857,247)
New York	José R. González(2)	Pentegra DBP	7.8	646,000	—
		BEP	7.8	6,016,000	—
Pittsburgh	Winthrop Watson(3)	Pentegra DBP	11.6	716,000	—
		SERP	12.1	2,676,000	—
Atlanta	Kirk Malmberg(4)(5)	Pentegra DBP	24.6	2,728,000	(128,829)
		BEP	23.9	—	(8,398,269)
	W. Wesley McMullan(4)	Pentegra DBP	30.0	3,612,000	(86,775)
		BEP	30.0	—	(20,855,634)
Cincinnati	Andrew S. Howell(6)	Pentegra DBP	31.5	3,143,000	—
		BEP	31.5	14,583,000	—
Indianapolis	Cindy L. Konich(7)	Pentegra DBP	37.0	3,426,000	—
		SERP	37.0	23,158,000	—
Chicago	Michael A. Ericson(8)	Pentegra DBP	16.4	1,139,000	—
		BEP	16.4	3,043,000	—
Dallas	Sanjay Bhasin(9)	Pentegra DBP	17.1	1,310,000	—
Topeka	Mark Yardley(10)	Pentegra DBP	30.0	3,301,000	—
		BEP	30.0	6,643,000	—
San Francisco	Teresa Bryce Bazemore(11)	BEP	0.3	1,604	—
		SERP	0.8	190,973	—
		CBP	0.3	12,801	—
		DCP	0.3	—	—
	Stephen P. Traynor(11)	BEP	26.0	322,681	(31,347)
		SERP	18.8	—	(2,580,466)
		CBP	26.0	793,803	—
		FIRF	0.3	5,876	—
		DCP	26.0	288,889	—
Office of Finance	Randolph C. Snook(12)	Pentegra DBP	2.0	141,000	—
		SERP	2.0	463,000	—

* Pentegra DBP = Pentegra Defined Benefit Plan for Financial Institutions
 BEP = Benefit Equalization Plan
 SERP = Supplemental Executive Retirement Plan
 CBP = Cash Balance Plan
 DCP = Deferred Compensation Plan

- (1) Boston- Participants' benefits are calculated as 2.00 percent multiplied by the participant's years of benefit service multiplied by the high three-year average salary. Compensation for the Pension BEP is compensation (salary and incentive) paid in the year. Compensation for Pentegra DBP is defined as base salary excluding the participant's voluntary contribution to the Thrift BEP, subject to the applicable IRS limits on annual earnings (\$290,000 for 2021). Mr. Barrett and Mr. Hjerpe's Pension BEP benefit is subject to a maximum annual benefit amount not to exceed 80% of high three-year average compensation. The regular form of retirement benefits is a straight-life annuity with a 12 times initial death benefit feature. Mr. Hjerpe's credited years of service for the Pentegra DBP includes 22.7 years of service at the FHLBank of Boston and 7.1 years of service at Firstfed America Bankcorp, Inc., both entities are participants in the Pentegra DBP. On January 1, 2024, future benefit accruals under the Pentegra DB Plan and the BEP Plan will cease for all employees that were hired before January 1, 2021.
- (2) New York- Pentegra DBP Formula: 2.0% of a participant's highest consecutive 5-year average earnings (as opposed to consecutive 3-year average earnings as previously provided to grandfathered participants), multiplied by the participant's years of benefit service, not to exceed 30 years. Earnings are defined as base salary plus short-term incentives, and overtime, subject to the annual Internal Revenue Code limit. The normal form of payment is a lump sum distribution or a life annuity (i.e., an annuity paid until the death of the participant), as opposed to a guaranteed twelve-year payout as previously provided to grandfathered participants. In addition, to the non-grandfathered participants, the cost-of-living adjustments ("COLAs") are no longer provided on future accruals (as opposed to a 1% simple interest COLA beginning at age 66 as previously provided).

- (3) Pittsburgh- Formula: $1.5\% \times \text{years of benefit service} \times \text{high five-year average compensation}$. Compensation covered for the Pentegra Defined Benefit Plan includes annual base salary, subject to IRS limitations. Compensation covered for the SERP includes annual base salary and annual incentive compensation, without regard to IRS limitations. The regular form of retirement benefits provides a single life annuity; a lump sum option is also available.
- (4) Atlanta- The "Present Value of Accumulated Benefit" is the present value of the annual pension benefit that was earned as of December 31, 2021, assuming retirement at age 65. Benefits under the Pentegra DBP were calculated using a 2.83% discount rate; a 2.22% discount rate was used to calculate benefits under the BEP.
- (5) Mr. Malmberg did not re-enter participation in the BEP upon his appointment as CEO in 2021.
- (6) Cincinnati- Prior to July 1, 2021, for employees hired before January 1, 2006: Formula: $2.5\% \times \text{years of benefit service} \times \text{highest three-year average compensation}$. Effective prospectively July 1, 2021, for all employees: Formula: $1.25\% \times \text{years of benefit service} \times \text{highest five-year average compensation}$. Compensation is defined as base salary, excess accrued vacation benefits (if applicable), and annual incentive compensation, and excludes any long-term or deferred incentive payments. The regular form of retirement benefits is a single-life annuity including a lump-sum retirement death benefit.
- (7) Indianapolis- Formula: $2.5\% \times \text{years of benefit service} \times \text{high three-consecutive-year average compensation plus, at age 66, an annual retiree cost of living adjustment of three percent without regard to the IRS limits, with respect to Ms. Konich}$.
- Eligible compensation includes salary (before any employee contributions to tax qualified plans), short-term incentive, bonus (including annual awards under the Incentive Plan), and any other compensation that is reflected on the IRS Form W-2 (but not including long-term incentive payments such as deferred awards under the Incentive Plan).
 - Retirement benefits may be paid in the form of a lump sum payment or annual installments up to 20 years or a combination of lump sum and annual payments. Ms. Konich is eligible to retire under the DB Plan and SERP due to the combination of her age and years of credited service.
- (8) Chicago- Formula: $2.25\% \times \text{the number of years credited service} \times \text{highest five-year compensation}$. Compensation is the average annual salary (base and short-term incentive compensation) for five consecutive years of highest salary. The regular form of retirement benefits is an annuity or a lump-sum retirement death benefit.
- (9) Dallas- Formula: $2\% \times \text{years of credited service} \times \text{high 36-month average compensation}$. The pension plan limits the maximum years of benefit service to 30 years. Compensation covered by the plan includes taxable compensation as reported on Mr. Bhasin's W-2 (exclusive of any compensation deferred from a prior year) plus any pre-tax contributions to the FHLBank of Dallas' Section 401(k) plan and/or Section 125 cafeteria plan, subject to the applicable IRS limits of \$290,000 per year. While employed by the Federal Home Loan Bank of Chicago, Mr. Bhasin accrued benefits at a service accrual rate of 2.25%. Mr. Bhasin's credited years of service for the Pentegra DBP includes 7.6 years of service at the FHLBank of Dallas and 9.5 years of service at the FHLBank of Chicago. The regular form of retirement benefit is a single life annuity that includes a lump-sum death benefit. The normal retirement age is 65, but Mr. Bhasin is eligible to receive an unreduced retirement benefit beginning at age 62. The FHLBank of Dallas does not have a supplemental defined benefit plan that covers compensation in excess of the IRS maximum limit; accordingly, Table S-5 reflects the estimated pension benefits payable to Mr. Bhasin based solely on the IRS compensation limit as his compensation exceeded such limit.
- (10) Topeka- Formula: Starting September 2003, Pentegra Defined Plan Benefit = $2.0\% \times \text{years of benefit service (not to exceed 30 years)} \times \text{high three-year average compensation}$. Benefit service begins one year after employment. Prior to September 2003, FIRF Benefit = $2.25\% \times \text{years of benefit service (not to exceed 30 years)} \times \text{high three-year average compensation}$. Benefit service begins one year after employment. The regular form of retirement benefits provides a single life annuity, a lump sum payment or other additional payment options. After January 1, 2020, participants no longer accrue new benefits under the Pentegra DB Plans or under the deferred benefit portion of the BEP Plan.
- (11) San Francisco- Benefit Equalization Plan
The Benefit Equalization Plan is an unfunded and non-tax-qualified plan that is designed to restore retirement benefits lost under the Cash Balance Plan and the FHLBank of San Francisco's Savings Plan (a defined contribution plan) because of compensation and benefits limitations imposed on the Cash Balance Plan and the Savings Plan under the Internal Revenue Code (IRC). An employee's benefits that would have been credited under the Cash Balance Plan but for the limitations imposed on the plans under the IRC are credited as supplemental cash balance benefits under the BEP and the credits accrue interest at an annual rate of 6% until distributed. The amounts credited or accrued under the BEP vest according to the corresponding provisions of the Cash Balance Plan and the Savings Plan.
Supplemental Executive Retirement Plan
The SERP is an unfunded and non-tax-qualified retirement benefit plan that provides a cash balance benefit to the FHLBank of San Francisco's senior executive officers that is in addition to the Cash Balance Plan benefits. The SERP supplements the Cash Balance Plan benefits to provide a competitive postretirement compensation package that is intended to help the FHLBank of San Francisco attract and retain key senior executive officers who are critical to the success of the FHLBank of San Francisco.
Cash Balance Plan and the Financial Institutions Retirement Fund
The FHLBank of San Francisco began offering benefits under the Cash Balance Plan (CBP) on January 1, 1996. The CBP is a tax-qualified defined benefit pension plan that covers employees who have completed six months of service, including the president. Each year, eligible employees accrue benefits equal to 6% of their total annual compensation (which includes base salary and short-term cash incentive compensation) plus interest equal to 6% of their account balances accrued through the prior year, referred to as the annual benefit component of the CBP. The benefits under the CBP annual benefit component are fully vested after an employee completes three years of service. Vested amounts are generally payable in a lump sum or in an annuity when the employee leaves the FHLBank of San Francisco.
Deferred Compensation Plan
The FHLBank of San Francisco's Deferred Compensation Plan is an unfunded and non-tax-qualified plan, consisting of three components: (1) employee deferral of current compensation; (2) make-up matching contributions that would have been made by the FHLBank of San Francisco under the Savings Plan had the base salary compensation not been deferred; and, (3) make-up pension benefits that would have been earned under the Cash Balance Plan had any amount of total annual compensation (base salary and short-term cash incentive compensation) not been deferred.
- (12) The CEO's benefit formula is 1.5% for each year of benefit service multiplied by the highest five-year average compensation, excluding deferred incentive compensation.

Table S-6 presents non-qualified deferred compensation for the FHLBank Presidents and the Office of Finance CEO for 2021, as applicable.

Table S-6 - Non-Qualified Deferred Compensation for 2021

(whole dollars)

FHLBank	President/CEO Name	President/CEO Contributions	Employer Contributions	Aggregate Withdrawals/Distributions	Aggregate Earnings	Aggregate Balance at 12/31/2021(1)
Boston	Timothy J. Barrett	\$ 10,380	\$ 21,340	\$ —	\$ 7,483	\$ 295,785
	Edward A. Hjerpe III	45,885	74,370	(2,118,411)	243,534	—
Pittsburgh	Winthrop Watson	500,979	73,752	—	589,570	6,992,599
Atlanta	Kirk Malmberg	5,500	87,600	(1,921,124)	232,972	796,099
	W. Wesley McMullan	162,471	7,762	(1,516,286)	194,752	2,397,594
Indianapolis	Cindy L. Konich	57,597	40,497	—	189,676	943,331
Chicago	Michael A. Ericson	33,500	—	—	2,552	171,243
Des Moines	Kristina K. Williams(2)	522,272	597,066	—	77,405	1,512,050
Dallas	Sanjay Bhasin	170,591	39,635	(31,806)	271,856	1,707,915
Topeka	Mark Yardley	69,870	66,871	—	85,959	1,912,119
San Francisco	Stephen P. Traynor	656,572	12,419	(299,236)	295,733	4,914,006
Office of Finance	Randolph C. Snook	54,210	31,405	—	23,347	232,903

(1) Amounts may include further deferral of deferred incentive compensation and applicable investment earnings.

(2) Ms. Williams received an additional BEP DC Plan contribution of \$525,000 in 2021, following the completion of one year of employment with the FHLBank of Des Moines.

Office of Finance CEO 2021 Compensation Discussion and Analysis

Compensation Philosophy and Objectives. The Human Resources and Compensation Committee (HR Committee) serves as the compensation committee of the Office of Finance Board of Directors. The compensation program for the Office of Finance CEO is designed to provide a flexible and market-based approach to compensation that attracts, retains, and motivates a high performing, accomplished financial services executive to achieve the Office of Finance's strategic business initiatives. The objectives of the compensation program are to communicate goals and short- and long-term standards of performance for the successful achievement of the Office of Finance's mission and to recognize, motivate, and reward the CEO commensurate with his contributions. To achieve these objectives, the Office of Finance compensates the CEO using a total compensation program approach that combines base salary, short- and long-term variable (incentive-based) compensation, retirement benefits, and fringe benefits.

The Office of Finance Board of Directors believes that its compensation philosophy is effective in attracting, retaining, and motivating a highly qualified individual. The Office of Finance Board of Directors reviews annually the compensation program to ensure that it is consistent with and supports the Office of Finance's business strategies and objectives. The FHFA's guiding principles for sound incentive compensation practices were incorporated into the development, implementation, and review of compensation policies and practices for the Office of Finance CEO in 2021.

Regulatory Oversight of Executive Compensation. The Director of the FHFA has the authority to review the compensation arrangements of executive officers of the FHLBanks and the Office of Finance and to prohibit an FHLBank or the Office of Finance from providing compensation to any executive officer that the Director of the FHFA determines is not reasonable and comparable with compensation for employment in other similar businesses involving similar duties and responsibilities.

Competition and Compensation Benchmarking.

Role of the HR Committee and the Office of Finance Board of Directors in Setting Executive Compensation. The HR Committee and the Office of Finance Board of Directors align the executive compensation program with the Office of Finance's business objectives and focus the CEO's efforts on fulfilling these goals. The HR Committee reviews

the CEO's performance and researches and recommends the CEO salary to the Office of Finance Board of Directors. The percentage of salary increase that will apply to a base pay merit adjustment for each year is recommended by the HR Committee for approval by the Office of Finance Board of Directors. The retirement benefit plans that are offered, and any changes to those plans from year to year, are approved by the Office of Finance Board of Directors after a recommendation by the HR Committee. The HR Committee also recommends the goals, payout, and qualifications for the annual Executive Incentive Plan for approval by the Office of Finance Board of Directors.

Role of Compensation Consultant in Setting Executive Compensation. The salary and benefit benchmarks used by the HR Committee to establish reasonable and competitive compensation for the CEO are the competitor groups established by Aon Consulting and its affiliate, McLagan Partners, as presented in Table S-7. The benchmarking analysis included the following competitor positions: the FHLBank Presidents; the head of debt capital markets for certain commercial banks; and the proxy data for Fannie Mae and Freddie Mac.

Table S-7 - Benchmarking Institutions

Bank of America	Federal Home Loan Bank of Cincinnati	JP Morgan Chase
Bank of Nova Scotia	Federal Home Loan Bank of Dallas	Macquarie Bank
BNP Paribas CIB	Federal Home Loan Bank of Des Moines	MUFG Bank, Ltd.
Capital One	Federal Home Loan Bank of Indianapolis	Nomura Securities
Citigroup	Federal Home Loan Bank of New York	Royal Bank of Canada
Fannie Mae	Federal Home Loan Bank of Pittsburgh	TD Securities
Federal Home Loan Bank of Atlanta	Federal Home Loan Bank of San Francisco	Truist
Federal Home Loan Bank of Boston	Federal Home Loan Bank of Topeka	
Federal Home Loan Bank of Chicago	Freddie Mac	

Elements of Total Compensation Program.

Base Salary. Base salary is a key component of the Office of Finance's total CEO compensation program. In setting the base salary for the CEO, the Office of Finance Board of Directors has discretion to consider a wide range of factors, including the CEO's individual performance, the performance of the Office of Finance overall, the CEO's tenure and the amount of the CEO base salary relative to the base salaries paid to executives in similar positions in the 50th percentile of executive salaries in the Office of Finance's peer groups. The Office of Finance Board of Directors also considers the amount and relative percentage of the CEO's total compensation that is derived from base salary.

In December 2020, the Office of Finance Board of Directors approved a 3% merit increase for the CEO effective January 1, 2021, from an annual base salary of \$816,400 to an annual base salary of \$840,892. (See *FHLBank Presidents and Office of Finance CEO Pay Ratio* within this section for information related to the CEO pay ratio.)

Executive Incentive Plan. The Office of Finance's 2021 Executive Incentive Plan is an annual cash-based incentive compensation plan designed to promote and reward high levels of performance for accomplishing Office of Finance Board of Directors-approved goals. The annual goals reflect desired performance focused on the Office of Finance mission. Each goal is assigned a weight reflecting its relative importance and potential effect on the Office of Finance's strategic initiatives. The CEO is eligible to receive 50% of the combined plan award as a cash payment and 50% of the award is deferred over a three-year period.

The Office of Finance Board of Directors approved six goals for the CEO consistent with the 2021 Executive Incentive Plan that are intended to reinforce the strategic plan actions and value delivered by the Office of Finance to support the mission of the FHLBanks:

- Survey (35% weight): consisting of the Office of Finance performance survey, which is designed to measure the Office of Finance's performance in serving the needs of the FHLBanks individually and collectively.

- Key Annual Business Initiatives (20% weight): consisting of six operational initiatives of the Office of Finance supporting debt issuance and servicing, market evolution and operational resiliency, and protecting the FHLBanks' debt franchise.
- Critical Business Service Availability (15% weight): measuring the service availability of the Office of Finance's most critical business and technology systems.
- Combined Financial Report (10% weight): focused on the Office of Finance's timely publication of the combined financial reports and related controls.
- Debt Servicing (10% weight): focused on the Office of Finance's accurate and timely servicing of the FHLBanks' consolidated obligations.
- Diversity and Inclusion (10% weight): consisting of initiatives to enhance diversity and inclusion in the organization as related to the workforce, suppliers, and capital markets.

The authorization for payment of awards is provided following a review of the year-end performance results by the Office of Finance Board of Directors. The cash incentive payments are typically determined based on the actual performance in comparison to the performance level established for each goal. If actual performance falls below the threshold level of performance, typically no payment is made for that goal. If actual performance exceeds the maximum level, only the value assigned as the performance maximum is paid. When actual performance falls between the assigned threshold, target, or maximum performance levels, an interpolation is typically calculated for that goal. The achievement level for each goal is then multiplied by the corresponding incentive weight assigned to that goal and the results for each goal are summed to arrive at the final incentive award payable to the Office of Finance's CEO. However, the Office of Finance Board of Directors has the authority to adjust the incentive award based on various factors, at its discretion.

The CEO is assigned a combined incentive award opportunity based on meeting an overall award level of threshold, target, or maximum for his goals, typically stated as a percentage of base salary, which corresponds to the level of organizational responsibility and ability to contribute to and influence overall Office of Finance performance. In January 2022, the Office of Finance Board of Directors authorized a 2021 Executive Incentive Plan award of \$798,848 for the CEO. In February 2022, \$399,424 (50%) was paid, and 50% is deferred over a three-year period. The deferred award is expected to be paid in three annual installments of \$133,141 (33.3%) in 2023, 2024, and 2025. The deferred awards will be reviewed prior to payment based on established criteria by the Office of Finance Board of Directors. Table S-8 presents the 2021 Executive Incentive Plan Results for the CEO.

Table S-8 - 2021 Executive Incentive Plan Results for the CEO

(whole dollars)

Goal	Weight	Overall Award Level	Total Award
Survey	35%	Between target and maximum	\$ 274,420
Key Annual Business Initiatives	20%	Close to maximum	151,520
Critical Business Service Availability	15%	Maximum	126,267
Combined Financial Report	10%	Maximum	84,178
Debt Servicing	10%	Maximum	84,178
Diversity and Inclusion	10%	Between target and maximum	78,285
Total	100%		\$ 798,848

In January 2022, the Office of Finance Board of Directors approved a vested deferred incentive payment to the CEO of \$245,597 and a deferred incentive interest payment of \$18,600 related to the deferred components of the 2020 and 2019 Executive Incentive Plan awards for the CEO.

The 2020 Executive Incentive Plan payment for the CEO was comprised of a vested deferred incentive payment of \$125,206 and a deferred incentive interest payment of \$6,260. These amounts were the deferred component of the 2020 Executive Incentive Plan award for the CEO, and were the first of the three annual installments of the deferred components of the award under the 2020 Executive Incentive Plan for the CEO. Table S-9 presents the deferred component of the 2020 Executive Incentive Plan award for the CEO.

Table S-9 - 2020 Executive Incentive Plan Deferred Component for the CEO

(whole dollars)

Goal	Weight	Overall Award Level	Total Award
Survey	35%	Between target and maximum	\$ 43,378
Exam Score	20%	Close to maximum	25,999
Key Annual Business initiatives	15%	Between target and maximum	18,473
Combined Financial Report and Debt Servicing	10%	Target	10,947
Diversity and Inclusion	10%	Close to maximum	12,726
Critical Business Service Availability	10%	Maximum	13,683
Total	100%		\$ 125,206

The 2019 Executive Incentive Plan payment for the CEO was comprised of a vested deferred incentive payment of \$120,391 and a deferred incentive interest payment of \$12,340. These amounts were the deferred component of the 2019 Executive Incentive Plan award for the CEO, and were the second of the three annual installments of the deferred components of the award under the 2019 Executive Incentive Plan for the CEO. Table S-10 presents the deferred component of the 2019 Executive Incentive Plan award for the CEO.

Table S-10 - 2019 Executive Incentive Plan Deferred Component for the CEO

(whole dollars)

Goal	Weight	Overall Award Level	Total Award
Survey	35%	Close to maximum	\$ 43,719
Exam Score	20%	Target	21,007
Funding Initiative and Protecting Debt Franchise	15%	Close to maximum	19,298
Combined Financial Report and Debt Servicing	10%	Between target and maximum	11,816
Diversity and Inclusion	10%	Close to maximum	12,735
Risk	10%	Between target and maximum	11,816
Total	100%		\$ 120,391

Retirement Benefits. The Office of Finance maintains a comprehensive retirement program for the CEO comprised of a combination of two IRS qualified plans and two non-qualified plans.

- **Qualified Defined Benefit Pension Plan** - After completion of one year of service, the CEO is eligible to participate in the Pentegra Defined Benefit Plan, a funded tax-qualified plan that is maintained on a non-contributory basis (i.e., no employee contributions). Participants' pension benefits become vested upon completion of five years of service. The pension benefits payable under the Pentegra Defined Benefit Plan are determined under a pre-established formula that provides a single life annuity payable monthly at normal retirement (age 65), or other actuarially equivalent forms of benefit payments, including an early retirement option. The CEO's benefit formula is 1.5% for each year of benefit service multiplied by the highest five-year average compensation, excluding deferred incentive compensation.
- **Non-qualified Defined Benefit Pension Plan** - The CEO is eligible to participate in the Supplemental Retirement Plan, an unfunded, non-qualified pension plan that mirrors the Pentegra Defined Benefit Plan in all material respects; however, the benefit is provided in a lump sum upon termination. In the event that benefits payable from the Pentegra Defined Benefit Plan have been reduced or otherwise limited by IRS provision, the executive's lost benefits are payable under the terms of the Supplemental Retirement Plan.

Because this plan is a non-qualified plan, the benefits received from this plan do not receive the same funding protection associated with the qualified plan.

- **Qualified Defined Contribution Plan** - The Pentegra Defined Contribution Plan for Financial Institutions is a tax-qualified defined contribution plan to which the Office of Finance makes tenure-based matching contributions. The matching contribution begins upon completion of three months of employment and subsequently increases based on length of employment to a maximum of six percent of base salary. Under the Pentegra Defined Contribution Plan, a participant may elect to contribute up to 50% of base salary on either a before-tax (i.e., 401(k)), or after-tax basis up to the IRS limit. The plan permits participants to self-direct investment elections into one or more investment funds, which may be changed daily by the participants. A participant may withdraw vested account balances while employed, subject to certain IRS and plan limitations.
- **Non-qualified Defined Contribution Plan** - The CEO is eligible to participate in the Supplemental Thrift Plan, a funded, non-qualified, contributory plan that mirrors the Pentegra Defined Contribution Plan in all material respects. This plan restores benefits that participants would have received absent IRS limits on contributions to the Pentegra Defined Contribution Plan. Under the Supplemental Thrift Plan, participants may elect to contribute up to 50% of base salary and up to 100% of incentive compensation on a pre-tax basis. As in the Pentegra Defined Contribution Plan, the employer match in the Supplemental Thrift Plan is tenure-based with a six percent maximum. This plan permits participants to self-direct investment elections into a choice of investment funds.

Perquisites. The perquisites provided by the Office of Finance represent a small fraction of the CEO's total compensation and are provided in accordance with market practices for executives in similar positions and with similar responsibilities. During 2021 and 2020, the CEO was provided with a \$1,000 per month vehicle allowance for his business and personal use, which is reported as taxable income. In addition, during 2021 and 2020, the CEO received reimbursement of relocation costs and related tax gross-up benefits as part of his employment terms with the Office of Finance.

Director Compensation

In accordance with the regulations of the FHFA under the FHLBank Act, the FHLBanks and the Office of Finance have established formal policies governing the compensation and expense reimbursement provided to their Directors. The goal of the policies is to compensate members of the Board of Directors for work performed on behalf of the FHLBanks or the Office of Finance, as applicable. Under these policies, compensation consists of fees that compensate Directors for:

- time spent reviewing materials sent to them on a periodic basis;
- preparation for meetings;
- participation in any other activities; and
- actual time spent attending the meetings of the board or its committee.

Directors are also reimbursed for reasonable expenses, which are not included in Table S-11 - Chair and Vice-Chair Director Compensation for 2021.

An FHFA rule allows each of the FHLBanks and the Office of Finance to pay its Directors reasonable compensation and expenses, subject to the authority of the Director of the FHFA to object to, and to prohibit prospectively, compensation and/or expenses that the Director of the FHFA determines are not reasonable. (See *FHLBank Directors* and *FHLBanks Office of Finance Board of Directors* within this section for biographies.) The following information has been provided for each FHLBank primarily based on the information disclosed in its annual report on SEC Form 10-K for the year ended December 31, 2021. Table S-11 presents the compensation of the Chair and Vice-Chair for each of the FHLBanks and the Office of Finance.

Table S-11 - Chair and Vice-Chair Director Compensation for 2021

(whole dollars)

FHLBank	Director Name	Position	Fees Earned or Paid in Cash	Change in Pension Value and Nonqualified and Deferred Compensation Earnings	All Other Compensation	Total
Boston	Martin J. Geitz	Chair	\$ 137,500	\$ —	\$ —	\$ 137,500
	Donna L. Boulanger	Vice-Chair	117,500	—	—	117,500
New York	John R. Buran	Chair	145,000	—	—	145,000
	Larry E. Thompson	Vice-Chair	125,000	—	—	125,000
Pittsburgh	Bradford E. Ritchie	Chair	142,492	—	19	142,511
	Louise M. Herrle	Vice-Chair	122,496	—	19	122,515
Atlanta	Richard A. Whaley	Chair	140,000	2,791	—	142,791
	Brian E. Argrett	Vice-Chair	120,000	1,332	—	121,332
Cincinnati	J. Lynn Anderson	Chair	145,000	—	—	145,000
	James A. England	Vice-Chair	125,500	—	—	125,500
Indianapolis	Dan L. Moore	Chair	137,000	—	—	137,000
	Karen F. Gregerson	Vice-Chair	123,000	—	—	123,000
Chicago	John K. Reinke	Chair	145,000	—	—	145,000
	James T. Ashworth	Vice-Chair	130,000	—	—	130,000
Des Moines	James G. Livingston	Chair	142,000	—	—	142,000
	Ellen Z. Lamale	Vice-Chair	131,000	—	—	131,000
Dallas	Robert M. Rigby	Chair	140,000	—	—	140,000
	Margo S. Scholin	Vice-Chair	123,000	—	—	123,000
Topeka	G. Bridger Cox	Chair	142,500	8,040	—	150,540
	Robert E. Caldwell, II	Vice-Chair	122,500	1,292	—	123,792
San Francisco	F. Daniel Siciliano(1)(2)	Chair	140,000	—	—	140,000
	Simone Lagomarsino(3)	Vice-Chair	135,000	—	—	135,000
Office of Finance	Jonathan A. Scott(4)	Chair	140,000	—	—	140,000

(1) Mr. Siciliano served as Chair during 2021, and is serving as Vice-chair for 2022.

(2) The FHLBank of San Francisco offers a matching gift program to all employees and directors whereby the FHLBank of San Francisco will match charitable donations to eligible nonprofits up to \$1,000. For the year ended December 31, 2021, the FHLBank of San Francisco made a \$1,000 matching contributions on behalf of Mr. Siciliano.

(3) Ms. Lagomarsino served as Vice-chair during 2021, and is serving as Chair for 2022.

(4) José R. González, President and Chief Executive Officer of the FHLBank of New York, has served as the Vice-Chair of the Office of Finance Board of Directors since May 2021, upon the retirement of W. Wesley McMullan, former President and Chief Executive Officer of the FHLBank of Atlanta and former Vice-Chair of the Office of Finance Board of Directors. Under FHFA regulations, an FHLBank president shall not receive any additional compensation or reimbursement as a result of his or her service as a member of the Office of Finance Board of Directors.

Individual Federal Home Loan Bank Selected Financial Data and Financial Ratios

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

Individual FHLBank Selected Financial Data and Financial Ratios (Unaudited)

<i>(dollars in millions)</i>	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Selected Statement of Condition Data(1)					
At December 31, 2021					
Assets					
Investments(2)(3)	\$ 16,372	\$ 30,802	\$ 18,098	\$ 31,821	\$ 29,392
Advances	12,340	71,536	14,124	45,415	23,055
Mortgage loans held for portfolio	3,120	2,320	4,676	149	7,588
Total assets	32,545	105,358	37,651	78,746	60,618
Deposits					
	884	1,321	1,088	2,054	1,416
Consolidated obligations(3)					
Discount notes	2,275	42,197	10,494	25,506	29,838
Bonds	26,613	54,829	23,106	46,186	24,602
Total consolidated obligations	28,888	97,026	33,600	71,692	54,440
Mandatorily redeemable capital stock	14	2	22	1	21
Total capital					
Capital stock(4)	954	4,501	1,227	2,383	2,490
Retained earnings	1,548	1,931	1,398	2,228	1,293
Accumulated other comprehensive income (loss)	29	14	109	(16)	13
Total capital	2,531	6,446	2,734	4,595	3,796
Asset composition (as a percentage of the individual FHLBank's total assets)					
Investments(2)(3)	50.3 %	29.2 %	48.1 %	40.4 %	48.5 %
Advances	37.9 %	67.9 %	37.5 %	57.7 %	38.0 %
Mortgage loans held for portfolio, net	9.6 %	2.2 %	12.4 %	0.2 %	12.5 %
Retained earnings as a percentage of FHLBank's total assets	4.8 %	1.8 %	3.7 %	2.8 %	2.1 %
FHLBank's total assets as a percentage of FHLBank System	4.5 %	14.6 %	5.2 %	10.9 %	8.4 %
At December 31, 2020					
Assets					
Investments(2)(3)	\$ 13,342	\$ 39,668	\$ 16,523	\$ 36,380	\$ 27,041
Advances	18,817	92,067	24,971	52,168	25,362
Mortgage loans held for portfolio	3,930	2,900	4,886	218	9,549
Total assets	38,461	136,996	47,713	92,295	65,296
Deposits					
	1,089	1,753	923	1,998	1,327
Consolidated obligations(3)					
Discount notes	12,878	57,659	9,510	25,385	27,500
Bonds	21,472	69,716	33,855	59,379	31,997
Total consolidated obligations	34,350	127,375	43,365	84,764	59,497
Mandatorily redeemable capital stock	6	3	143	—	19
Total capital					
Capital stock(4)	1,268	5,367	1,528	3,078	2,641
Retained earnings	1,498	1,909	1,376	2,198	1,304
Accumulated other comprehensive income (loss)	16	(20)	137	(16)	(15)
Total capital	2,782	7,256	3,041	5,260	3,930
Asset composition (as a percentage of the individual FHLBank's total assets)					
Investments(2)(3)	34.7 %	29.0 %	34.6 %	39.4 %	41.4 %
Advances	48.9 %	67.2 %	52.3 %	56.5 %	38.8 %
Mortgage loans held for portfolio, net	10.2 %	2.1 %	10.2 %	0.2 %	14.6 %
Retained earnings as a percentage of individual FHLBank's total assets	3.9 %	1.4 %	2.9 %	2.4 %	2.0 %
FHLBank's total assets as a percentage of FHLBank System	4.7 %	16.7 %	5.8 %	11.2 %	8.0 %

- (1) The sum or recalculation of individual FHLBank amounts may not agree or may not be recalculated from the Combined Statement of Condition amounts due to combining adjustments.
- (2) Investments consist of interest-bearing deposits, deposits with other FHLBanks, securities purchased under agreements to resell, federal funds sold, trading securities, available-for-sale securities, and held-to-maturity securities.
- (3) See [Note 1 - Summary of Significant Accounting Policies - Basis of Presentation](#) to the accompanying combined financial statements for information about the elimination of interbank transactions in the combined financial statements of the FHLBanks.
- (4) FHLBank capital stock is redeemable at the request of a member subject to the statutory redemption periods and other conditions and limitations. (See [Note 11 - Capital](#) to the accompanying combined financial statements for additional information on the statutory redemption periods and other conditions and limitations.)

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Selected Statement of Condition Data(1)						
At December 31, 2021						
Assets						
Investments(2)(3)	\$ 23,601	\$ 38,583	\$ 33,442	\$ 34,653	\$ 16,058	\$ 35,768
Advances	27,498	48,049	44,111	24,637	23,484	17,027
Mortgage loans held for portfolio	7,616	9,843	7,578	3,491	8,135	980
Total assets	60,005	96,954	85,852	63,488	48,021	54,121
Deposits	1,367	1,034	1,847	1,590	946	769
Consolidated obligations(3)						
Discount notes	12,116	24,563	22,348	11,003	6,569	23,987
Bonds	42,362	63,373	55,205	44,514	37,630	22,716
Total consolidated obligations	54,478	87,936	77,553	55,517	44,199	46,703
Mandatorily redeemable capital stock	50	247	29	7	1	3
Total capital						
Capital stock(4)	2,246	2,149	3,364	2,193	1,499	2,061
Retained earnings	1,177	4,261	2,390	1,558	1,143	3,832
Accumulated other comprehensive income (loss)	133	342	84	183	73	331
Total capital	3,556	6,752	5,838	3,934	2,715	6,224
Asset composition (as a percentage of the individual FHLBank's total assets)						
Investments(2)(3)	39.3 %	39.8 %	39.0 %	54.6 %	33.4 %	66.1 %
Advances	45.8 %	49.6 %	51.4 %	38.8 %	48.9 %	31.5 %
Mortgage loans held for portfolio, net	12.7 %	10.2 %	8.8 %	5.5 %	16.9 %	1.8 %
Retained earnings as a percentage of FHLBank's total assets	2.0 %	4.4 %	2.8 %	2.5 %	2.4 %	7.1 %
FHLBank's total assets as a percentage of FHLBank System	8.3 %	13.4 %	11.9 %	8.8 %	6.6 %	7.5 %
At December 31, 2020						
Assets						
Investments(2)(3)	\$ 23,756	\$ 39,649	\$ 31,497	\$ 25,660	\$ 17,252	\$ 35,228
Advances	31,347	46,695	46,530	32,479	21,227	30,976
Mortgage loans held for portfolio	8,516	10,038	8,242	3,423	9,205	1,935
Total assets	65,925	100,356	87,691	64,913	52,592	68,634
Deposits	1,375	1,284	1,908	1,583	1,230	887
Consolidated obligations(3)						
Discount notes	16,617	48,643	27,345	22,171	10,882	16,213
Bonds	43,333	42,670	52,254	37,113	37,648	44,408
Total consolidated obligations	59,950	91,313	79,599	59,284	48,530	60,621
Mandatorily redeemable capital stock	251	279	52	14	2	2
Total capital						
Capital stock(4)	2,208	2,010	3,341	2,101	1,574	2,284
Retained earnings	1,137	4,072	2,351	1,408	1,052	3,680
Accumulated other comprehensive income (loss)	105	207	48	48	42	230
Total capital	3,450	6,289	5,740	3,557	2,668	6,194
Asset composition (as a percentage of the individual FHLBank's total assets)						
Investments(2)(3)	36.0 %	39.5 %	35.9 %	39.5 %	32.8 %	51.3 %
Advances	47.5 %	46.5 %	53.1 %	50.0 %	40.4 %	45.1 %
Mortgage loans held for portfolio, net	12.9 %	10.0 %	9.4 %	5.3 %	17.5 %	2.8 %
Retained earnings as a percentage of individual FHLBank's total assets	1.7 %	4.1 %	2.7 %	2.2 %	2.0 %	5.4 %
FHLBank's total assets as a percentage of FHLBank System	8.0 %	12.2 %	10.7 %	7.9 %	6.4 %	8.4 %

Individual FHLBank Selected Financial Data and Financial Ratios (Unaudited, continued)

<i>(dollars in millions)</i>	Boston	New York	Pittsburgh	Atlanta	Cincinnati
Selected Other Data					
December 31, 2021					
Advance concentrations - top five borrowers	34 %	63 %	64 %	60 %	59 %
Regulatory capital stock concentrations - top five stockholders	22 %	51 %	52 %	46 %	29 %
Regulatory capital-to-assets ratio(5)	7.73 %	6.11 %	7.03 %	5.86 %	6.28 %
Core mission asset ratio(6)	71.21 %	79.88 %	64.09 %	63.30 %	69.07 %
Cash and stock dividends					
Year-to-date December 31, 2021	\$ 19	\$ 244	\$ 64	\$ 103	\$ 53
Year-to-date December 31, 2020	\$ 81	\$ 348	\$ 169	\$ 239	\$ 83
Year-to-date December 31, 2019	\$ 123	\$ 366	\$ 267	\$ 324	\$ 205
Weighted average dividend rate					
Year-to-date December 31, 2021	1.66 %	4.54 %	4.70 %	3.70 %	2.00 %
Year-to-date December 31, 2020	4.64 %	5.41 %	6.35 %	5.03 %	2.23 %
Year-to-date December 31, 2019	6.05 %	6.35 %	7.45 %	6.36 %	5.05 %
Return on average equity(7)					
Year-to-date December 31, 2021	2.62 %	3.89 %	3.10 %	2.79 %	1.08 %
Year-to-date December 31, 2020	4.00 %	5.59 %	5.53 %	3.95 %	5.78 %
Year-to-date December 31, 2019	6.29 %	6.53 %	6.58 %	5.09 %	5.65 %
Return on average assets					
Year-to-date December 31, 2021	0.19 %	0.22 %	0.21 %	0.16 %	0.07 %
Year-to-date December 31, 2020	0.24 %	0.28 %	0.27 %	0.19 %	0.31 %
Year-to-date December 31, 2019	0.35 %	0.32 %	0.31 %	0.25 %	0.28 %
Net interest margin(8)					
Year-to-date December 31, 2021	0.60 %	0.45 %	0.46 %	0.34 %	0.46 %
Year-to-date December 31, 2020	0.39 %	0.48 %	0.47 %	0.26 %	0.46 %
Year-to-date December 31, 2019	0.49 %	0.46 %	0.45 %	0.36 %	0.42 %
Net interest spread					
Year-to-date December 31, 2021	0.57 %	0.43 %	0.42 %	0.34 %	0.41 %
Year-to-date December 31, 2020	0.32 %	0.43 %	0.43 %	0.22 %	0.41 %
Year-to-date December 31, 2019	0.36 %	0.35 %	0.34 %	0.25 %	0.30 %

(5) The regulatory capital-to-assets ratio is calculated based on the FHLBank's total regulatory capital as a percentage of total assets held at period-end. (See [Note 11 - Capital](#) to the accompanying combined financial statements for a definition and discussion of regulatory capital.)

(6) The core mission asset ratio is calculated based on the FHLBank's total primary mission assets, which includes advances and mortgage loans acquired from members, as a percentage of total consolidated obligations. The core mission asset ratio is calculated annually at year-end as part of the FHFA's examination process, using annual average principal amounts. The FHFA's expectation is that each FHLBank's core mission asset ratio equal or exceed 70%. If the core mission asset ratio falls below the 70% preferred ratio, an FHLBank would be expected to include in its strategic plan actions aimed at increasing its mission focus.

(7) Return on average equity is net income expressed as a percentage of average total capital. Mandatorily redeemable capital stock is not included in the calculation of return on average equity.

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

<i>(dollars in millions)</i>	Indianapolis	Chicago	Des Moines	Dallas	Topeka	San Francisco
Selected Other Data						
December 31, 2021						
Advance concentrations - top five borrowers	43 %	46 %	39 %	41 %	62 %	53 %
Regulatory capital stock concentrations - top five stockholders	38 %	29 %	22 %	23 %	45 %	14 %
Regulatory capital-to-assets ratio(5)	5.79 %	6.87 %	6.74 %	5.92 %	5.50 %	10.89 %
Core mission asset ratio(6)	68.16 %	70.33 %	71.29 %	66.43 %	77.24 %	64.41 %
Cash and stock dividends						
Year-to-date December 31, 2021	\$ 54	\$ 86	\$ 167	\$ 14	\$ 70	\$ 135
Year-to-date December 31, 2020	\$ 77	\$ 84	\$ 203	\$ 39	\$ 71	\$ 159
Year-to-date December 31, 2019	\$ 104	\$ 82	\$ 269	\$ 76	\$ 99	\$ 206
Weighted average dividend rate						
Year-to-date December 31, 2021	2.44 %	4.28 %	4.82 %	0.67 %	4.49 %	5.74 %
Year-to-date December 31, 2020	3.66 %	4.52 %	4.86 %	1.52 %	4.38 %	5.53 %
Year-to-date December 31, 2019	5.31 %	4.72 %	5.23 %	2.95 %	6.46 %	7.00 %
Return on average equity(7)						
Year-to-date December 31, 2021	2.64 %	4.13 %	3.48 %	4.31 %	5.88 %	4.46 %
Year-to-date December 31, 2020	2.67 %	6.10 %	5.88 %	5.41 %	4.50 %	5.32 %
Year-to-date December 31, 2019	4.55 %	5.29 %	5.38 %	5.96 %	7.32 %	4.92 %
Return on average assets						
Year-to-date December 31, 2021	0.15 %	0.28 %	0.23 %	0.27 %	0.33 %	0.49 %
Year-to-date December 31, 2020	0.13 %	0.36 %	0.34 %	0.28 %	0.21 %	0.36 %
Year-to-date December 31, 2019	0.21 %	0.30 %	0.27 %	0.32 %	0.33 %	0.31 %
Net interest margin(8)						
Year-to-date December 31, 2021	0.40 %	0.56 %	0.44 %	0.46 %	0.61 %	0.91 %
Year-to-date December 31, 2020	0.38 %	0.59 %	0.45 %	0.43 %	0.44 %	0.54 %
Year-to-date December 31, 2019	0.35 %	0.47 %	0.42 %	0.41 %	0.45 %	0.50 %
Net interest spread						
Year-to-date December 31, 2021	0.38 %	0.55 %	0.39 %	0.45 %	0.58 %	0.89 %
Year-to-date December 31, 2020	0.32 %	0.54 %	0.38 %	0.39 %	0.39 %	0.49 %
Year-to-date December 31, 2019	0.23 %	0.34 %	0.29 %	0.28 %	0.34 %	0.36 %

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