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The Federal Home Loan Bank System and U.S. Housing Finance

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Abstract: This paper examines the role of the Federal Home Loan Bank (FHLB) System in the U.S. housing finance system. This cooperatively owned government-sponsored enterprise has changed markedly over the past 25 years as a result of membership liberalization and the demise of thrift institutions. Today, despite its name, size, and principal activities, the FHLB System actually provides little targeted support to the housing sector. Instead, recent research highlights the role of the FHLB System as a provider of subsidized general liquidity to its members, including the very largest commercial banking organizations. This role was especially pronounced during the onset of the recent financial crisis and gave rise to the perception of the FHLB System as having become the "lender of next-to-last-resort."

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The Federal Home Loan Bank System and U.S. Housing Finance

The Federal Home Loan Bank (FHLB) System is a government-sponsored enterprise (GSE) comprised of 12 regional wholesale FHLBs and an Office of Finance that acts as their portal to the capital markets.[1] Each of the 12 FHLBs is cooperatively owned and together they serve over 7,500 member financial institutions, about two-thirds of which are commercial banks. The FHLB System's consolidated balance sheet at the end of 2013 was $834 billion.

The mission of the FHLB System is to provide member financial institutions with financial products and services that assist and enhance the financing of housing and community lending. Since its creation in 1932, the principal way in which FHLBs achieved this mission was by making collateralized loans, known as "advances," that are secured by members' residential mortgage loans and securities. Advances, in turn, are largely funded by consolidated debt obligations that benefits from a market perception of an implied federal guarantee owing to the FHLB System's government sponsored enterprise (GSE) status. (FHLB System consolidated debt obligations are considered Agency securities, like those issued by Fannie Mae and Freddie Mac.) This market perception also allows the FHLBs to profitably maintain large investment portfolios comprised of mortgage-backed securities and mortgage pools sold to them by members.

Despite its name, size, and principal activities, the FHLB System today actually provides little targeted support to the U.S. housing finance system. For more than 50 years, the FHLB membership was limited to mortgage-oriented institutions, particularly thrifts and insurance

[1] The 12 FHLBs are located in Atlanta, Boston, Chicago, Cincinnati, Dallas, Des Moines, Indianapolis, New York, Pittsburgh, San Francisco, Seattle, and Topeka. The Office of Finance is located in Reston, VA. The Des Moines and Seattle FHLBs will be merged in 2015.

companies. By limiting FHLB membership and acceptable collateral, the Congress was largely able to direct FHLB System benefits to the housing finance sector. But following the 1980s thrift crisis, the Financial Institutions Reform, Recovery, and Enforcement Act of 1989 (FIRREA) expanded FHLB membership to include more diversified depository institutions (commercial banks and credit unions).[2] Today, for example, commercial bank members can pledge eligible mortgage-related collateral to obtain an advance that, in turn, may fund virtually any type of financial asset. Hence, FHLB membership liberalization broke the relatively tight link between FHLB advances and member collateral that historically ensured that much of the GSE benefits flowed, as intended, to support residential mortgage finance. (Note that, since 2000, FHLB advances made to "community financial institutions" can be used to finance small businesses, small farms, and small agribusinesses.) Below, we summarize research that is consistent with the FHLB System acting as a general source of liquidity to commercial banks of all sizes.

The FHLBs' investment in mortgage-backed securities and whole mortgages are more directly tied to housing finance. However, most of these assets are widely traded in global capital markets and the FHLBs are no more special investors than their large commercial bank members or the other two housing GSEs (Fannie Mae and Freddie Mac). Put differently, if FHLB investment portfolios did not exist, there would not likely be a noticeable impact on residential mortgage markets. Moreover, these investment portfolios have also caused material risk management problems at some FHLBs in recent years. The FHLBs affordable housing programs do provide

[2] The likely rationale for this liberalization was that the FHLB System had been lost a large number of members to failure during the 1980s thrift crisis, but needed to thrive going forward in order to assist with paying-off the Ref Corp bonds issued to finance the crisis resolution.

targeted support for housing, although funding is modest (greater of $100 million or 10 percent of FHLB net income annually) relative to the size of the FHLB System.

Today, the FHLB System acts as a subsidized source of wholesale liquidity for members. While Congress has expressly authorized such activity for community financial institutions, the reality is that the vast majority of FHLB lending (and associated benefits) flows to the very largest U.S. banking organizations. Such institutions do not need FHLB access as they can issue in public debt markets and, in times of turmoil, borrow from the Federal Reserve's Discount Window.

This chapter begins by describing the structure and governance of the FHLB System. We then outline the FHLB business model and identify its key business risks. After, we discuss the FHLB System as a GSE. This is followed by a summary of recent research that is consistent with the FHLB System acting as a general source of liquidity to commercial banks – both before and during the financial crisis. A conclusion follows.

FHLB System: Structure & Governance

Each FHLB is cooperatively owned by its financial institution members. By law, membership is limited to commercial banks, credit unions, thrifts, insurance companies, and community development financial institutions that are chartered within each FHLBs' legally defined service area.[3] FHLB members must either maintain at least 10 percent of their asset portfolios in residential mortgage-related assets (at the time of application) or else be designated as "community financial institutions."[4]

[3] As of year-end 2013, the FHLB System had 7,504 members. Of these, 67.3 percent were commercial banks, 16.2 percent were credit unions, 12.4 percent were thrifts, 3.8 percent were insurance companies, and 0.3 percent were community development financial institutions.

A stock purchase is required for FHLB membership based on two permissible classes of stock: Class A stock is redeemable on six months' written notice from the member, and class B stock on five years' notice.[5] FHLB stock is not traded, valued at par, and pays a dividend. Members resigning their membership are subject to a five-year lockout from the FHLB System.

As discussed in Flannery and Frame (2006), most FHLB capital plans share some general characteristics. First, almost all of the FHLBs rely exclusively on the more permanent class B shares. Second, the stock purchase requirements contain both "membership" and "activities" components. (The membership component is generally tied to a measure of member size, while the activity-based component tends to depend on activities that directly affect the size of an FHLB's balance sheets, like advances.) Finally, each stock purchase requirement is specified with ranges to allow individual FHLBs to adjust their requirements without having to seek regulatory approval.

Table 1 shows that the 12 FHLBs differ substantially in both asset size and number of members. The New York FHLB is the largest in terms of total assets ($128.3 billion), but it has the third-fewest number of members (333). Conversely, the Dallas FHLB has the smallest balance sheet ($30.2 billion) but the third largest membership (875). Perhaps more importantly, each FHLB balance sheet is dedicated to a few large members. The five largest members account for

[4] See 12 CFR 1263.1 for a comprehensive definition of "residential mortgage loans" for purposes of FHLB membership. Community financial institutions are federally insured depository institutions with average total assets over the preceding three year period of less than $1.0 billion (adjusted annually for inflation). The average total asset cap for 2013 was $1.095 billion.

[5] See 12 C.F.R. 1277 Subpart C for a comprehensive set of requirements pertaining to FHLB capital plans.

between 27 percent and 78 percent of individual FHLB advance portfolios (Dallas and Cincinnati, respectively); and the five largest equity holders are similarly prominent.

An elected board of directors controls the operations of each FHLB. Despite the concentration of equity holdings illustrated in Table 1, two important voting limitations make effective control much more diffuse than the equity ownership data would suggest. First, no member may vote more than the average number of shares owned by members in its state as of the prior year's end. This rule limits concentration of voting rights because every state has large numbers of small institutions. Second, voting occurs on a state-by-state basis, and each state must have at least one director. To the extent that large members are not equally distributed among the states, therefore, concentrated control is even more limited. See 12 CFR § 1261 Subpart B for a complete set of regulations pertaining to FHLB directors and voting rights.

FHLB System: Consolidated Balance Sheets & Associated Risks

Table 2 presents the consolidated balance sheet for the FHLB System as of December 31, 2013. The largest asset category is member advances ($498.6 billion, or 59.8 percent of total assets). Advances are available in various maturities, carry fixed or variable rates of interest, sometimes contain embedded options, and are fully collateralized. In terms of maturities, as of December 31, 2013, 42.1 percent of advances were due in less than one year, 46.4 percent were due in one to five years, and 11.4 percent were due thereafter. The most common forms of advance collateral are single family mortgage loans, home equity loans, and commercial real estate loans.[6] Collateral may be posted through a blanket lien, specific listing, or physical

delivery.[7] Discounts, or haircuts, are applied to advance collateral by the individual FHLBs based on type, listing method, and borrower health. This means that FHLB advances are actually "overcollateralized" in the sense that the book value of collateral exceeds the advance amount. (In many ways, FHLB advances are akin to "covered bonds" which are a popular method of financing mortgages in Europe.) Beyond their explicit collateral, the FHLBs also have priority over the claims of depositors and almost all other creditors in the event of a member's default – including the Federal Deposit Insurance Corporation.[8] No FHLB has ever suffered a credit loss on an advance.

FHLB members generally view advances as an attractive source of wholesale funds. Advance interest rates are set by the individual FHLBs and generally reflect a mark-up to the cost of comparable debt funding secured by the Office of Finance. However, in order to receive an advance, a member must also purchase FHLB stock in an amount dictated by the individual FHLB's capital plan.[9] Hence, the all-in cost of advance borrowing includes: the note rate, the opportunity cost of tying up collateral, and the net benefit/cost of holding FHLB stock versus an alternative

[6] See 12 U.S.C. 1430(a)(3) for a complete list of eligible collateral. See also Federal Home Loan Banks Office of Finance (2013, p. 86) for a break-down of the types of collateral backing advances.

[7] See Federal Home Loan Banks' Office of Finance (2013, p. 84) for further discussion of these collateral posting methods and associated requirements.

[8] See 12 U.S.C. 1430[e]. Bennett, Vaughan, and Yeager (2005) describe how FHLB advances may increase the probability of bank default and raise the FDIC's expected losses given default.

[9] Such activity-based stock purchase requirements allow FHLB balance sheets to expand without disrupting the capital structure. In the event of balance sheet contraction, such activity-based member stock becomes "excess stock" and is eligible for immediate redemption.

investment.[10] The terms are presumably attractive: Five of the six largest FHLB advance users are considered to be systemically important financial institutions (JP Morgan Chase, Bank of America, Citigroup, Wells Fargo, and MetLife) and accounted for 30.5 percent of total FHLB advances as of year-end 2013. Table 3 lists the 10 largest FHLB advance holders at that time.

Each FHLB also maintains a portfolio of highly rated investments, which on a combined basis, totaled $242.9 billion at the end of 2013. For liquidity, the FHLBs hold about one-quarter of this portfolio ($62.3 billion) in short-term investments, such as federal funds. The FHLBs also hold longer-term investments to enhance interest income ($180.5 billion) – primarily Agency debt and mortgage-backed securities.[11] DeMarco (2010) argues that such a large portfolio is inconsistent with the purposes of the FHLB System and represents a misuse of the GSE's preferential access to capital markets.

The FHLB System's combined balance sheet also includes residential mortgages acquired from participating member institutions under either the Chicago FHLBs Mortgage Partnership Finance Program or the other FHLBs' self-branded Mortgage Purchase Programs. Generally speaking under these programs, the member-seller guarantees most of the mortgage's credit risk, while the interest rate risk is borne by the FHLBs (see Frame 2003 for detailed discussion). As of year-end 2013, the FHLB System held $44.4 billion in mortgage loans (net of loan loss allowances) – an amount that has been gradually declining over the past decade.

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[10] For analysis of the all-in cost of advances, see Flannery and Frame (2006) and Ashcraft, Bech, and Frame (2010). See also DeMarco (2010) for additional discussion of the benefits of FHLB membership.

[11] Agency debt generally refers to debt securities issued by Fannie Mae, Freddie Mac, FHLB System, and Farm Credit System. Agency mortgage-backed securities are those issued and guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae.

Table 4 presents the asset composition shares for the 12 FHLBs as of year-end 2013. The Chicago and Seattle FHLBs have remarkably small shares of their balance sheets devoted to advances (34 percent and 30 percent, respectively) and large shares devoted to investments. This has been a long-run phenomenon for the Chicago FHLB, but a more recent (post-crisis) development for the Seattle FHLB. (Both institutions have been subject to various regulatory orders over the years.) It is not clear whether such balance sheet structures are consistent with the FHLBs mission and the long-run viability of the individual institutions.[12] Indeed, the Chicago FHLB previously considered a merger with the Dallas FHLB; and the Seattle FHLB has recently agreed to be absorbed by the Des Moines FHLB.

The FHLB asset portfolios are largely funded with debt, almost all of which takes the form of "consolidated obligations" issued by the Office of Finance and for which the 12 banks are jointly and severally liable (i.e., cross-guarantee). As of December 31, 2013, the FHLB System had $767.1 billion in consolidated obligations outstanding. Discount notes (maturities up to one year) represented 38.2 percent of consolidated obligations at that time.[13] Consolidated bonds, which have maturities almost exclusively between one and ten years, comprise the remaining 61.8 percent. Of the $473.2 billion in FHLB System consolidated bonds, 73.8 percent carried fixed rates and 25.9 percent included call options.

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[12] See DeMarco (2010, 2011) for further elaboration on the policy demerits of FHLB investment portfolios.

[13] FHLB members interact daily with the Office of Finance to discuss their short-term funding needs which are met via direct placement with dealers (e.g., overnight discount notes) or through regular competitive auctions (e.g., term discount notes).

The FHLB System also maintained $45.1 billion in equity capital at that time (4.5 percent of total assets). Member stock subscriptions are the dominant form of equity ($33.4 billion), with the remainder in retained earnings ($12.2 billion) and accumulated other comprehensive income (-$0.5 billion). Retained earnings has been a growing share of FHLB System equity since its 2011 Joint Capital Enhancement Agreement entered into following the completion of their RefCorp obligation.[14]

The Federal Housing Finance Agency (FHFA) enforces minimum leverage and risk-based capital requirements for the 12 FHLBs. The minimum leverage requirement is five percent of total assets, although this is computed as 1.5 times permanent capital (Class B stock and retained earnings) plus all other capital. Under this measure, as of year-end 2013, FHLB leverage ratios ranged from 5.0 percent (Seattle) to 11.2 percent (New York). The FHFA also computes a risk-based capital requirement based on each bank's credit, market, and operational risks.[15] As of December 31, 2013, required risk-based capital for the individual FHLBs ranged widely from 0.5 percent of total assets (New York) to 4.6 percent of total assets (San Francisco).

FHLBs long faced very little credit risk in their asset portfolios, which were largely comprised of advances and Agency mortgage-backed securities. However, this changed during the recent financial crisis as initially AAA-rated private-label mortgage securities held by the FHLB lost

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[14] For details, see <http://www.fhfa.gov/Media/PublicAffairs/Pages/FHFA-Announces-Completion-of-RefCorp-Obligation-and-Approves-FHLB-Plans-to-Build-Capital.aspx>. Such earnings retention is consistent with FHLB System practice prior to the enactment of FIRREA.

[15] See 12 CFR § 932 for details.

significant value. Indeed, the Boston, Chicago, and Seattle FHLBs posted significant net losses for 2008 and 2009; due in large part to write-downs on these securities.

Prior to the financial crisis, FHLB risk management concerns centered on their significant exposure to interest rate risk associated with long-term advances and fixed-rate pre-payable mortgages (whole loans and mortgage-backed securities).[16] FHLBs principally manage their mortgage-related interest rate risk by issuing callable bonds, of which they had $86.9 billion outstanding as of year-end 2013. FHLBs also regularly use interest rate derivatives to transform their liability maturities and to hedge some of the negative convexity associated with fixed-rate mortgages. As of December 31, 2013, the FHLB System had $539.3 billion in total (notional amount) interest rate exchange agreements outstanding—mostly interest rate swaps. Nonetheless, it is very difficult to discern how much interest rate risk the FHLB System actually retains.

The FHLB System as a GSE

Like Fannie Mae and Freddie Mac, The FHLB System is considered a government-sponsored enterprise (GSE) since it has been expressly created by an Act of Congress (The Federal Home Loan Bank Act of 1932) that includes several institutional benefits designed to reduce its operating and funding costs. In terms of operating costs, GSEs are exempt from federal corporate income taxes and Securities and Exchange Commission registration requirements for their debt securities. As with Fannie Mae and Freddie Mac, market participants have to come to view FHLB System consolidated debt obligations to be implicitly guaranteed by the U.S. government despite explicit, legally prescribed denials in offering materials. This perception allows GSEs to borrow at

[16] See Flannery and Frame (2006) for a detailed discussion of FHLB System interest rate risk management.

favorable interest rates in the hopes that most of these savings are passed on to customers.[17] U.S. Congressional Budget Office (2001, 2004) provides estimates of annual implicit subsidies to each of the housing GSEs. Hence, by chartering a GSE, the federal government seeks to direct benefits toward a specific sector of the economy without recognizing the attendant opportunity costs in the federal budget.[18]

In the case of the FHLB System, the idea is that reduced FHLB borrowing costs will accrue to members via lower advance rates and higher dividend rates than would otherwise be the case. Prior to the passage of FIRREA, this meant that the implicit subsidy flowed to members that were principally engaged in home mortgage lending; with some portion flowing through to borrowers. However, following the liberalization of FHLB membership, the subsidy is diffused among the variety of member business activities (U.S. Congressional Budget Office, 2001).

Three provisions in the Federal Home Loan Bank Act are especially important for creating the perception of an implicit government guarantee of FHLB consolidated obligations. First, the U.S. Treasury is authorized to purchase up to $4 billion of FHLB System debt securities. Second, FHLB debt securities are considered government securities under the Securities and Exchange Act of 1934. (This status means that the securities can be used as collateral for public deposits, can be bought and sold by the Federal Reserve in open-market operations, and may be held in

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[17] See Ambrose and Warga (2002) and Nothaft, Pearce, and Stevanovic (2002) for analyses of individual housing GSE debt funding advantages relative to other highly rated financial institutions. Such studies find that housing GSE debt carries yields about 30-40 basis points below that of similar firms (holding various factors constant) and that this advantage is similar for Fannie Mae, Freddie Mac, and the FHLB System.

[18] Of course, large actual costs can be incurred in the event that the Government provides support to an insolvent GSE, as was evidenced by the rescue of Fannie Mae and Freddie Mac in 2008. See Frame, Fuster, Tracy, and Vickery (2015) for discussion.

unlimited amounts by federally insured depository institutions.) Third, FHLB debt securities are eligible for issuance and transfer through the Federal Reserve System's book-entry system, which is also used by the U.S. Treasury.

The market perception of an implied guarantee of GSE obligations distorts the institutions' risk-taking incentives in a way that may increase the probability of financial distress. (A similar situation is well understood in the context of federally insured depository institutions.) To protect against potential moral hazard, the federal government supervises the Federal Home Loan Bank System for safety-and-soundness to limit potential taxpayer exposure.[19] The Federal Housing Finance Agency (FHFA) is an independent agency within the executive branch that supervises Fannie Mae, Freddie Mac, and the Federal Home Loan Bank System.[20] The supervisor is authorized to set capital standards, conduct examinations, and take certain enforcement actions if unsafe or unsound practices are identified.

An important cost associated with financial institutions operating with government guarantees (implicit or explicit) is the aforementioned moral hazard incentive for such institutions to increase their risk exposure in order to maximize shareholder returns. However, the FHLBs are cooperatively owned, and the incentives created by such an ownership arrangement are less well understood. Flannery and Frame (2006) discuss some unique features

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[19] Ironically, federal supervision of the GSEs may encourage investors' faith in a federal guarantee, despite the government's and the GSEs' explicit disavowals. Hence, as a theoretical matter, it is unclear whether the presence of a safety-and-soundness supervisor for GSEs actually increases or decreases expected taxpayer exposure (Frame and White 2004).

[20] The FHFA was created by the Housing and Economic Recovery Act of 2008 and effectively consolidated prior GSE mission and safety-and-soundness oversight responsibilities of the Office of Federal Housing Enterprise Oversight, the Federal Housing Finance Board, and U.S. Department of Housing and Urban Development.

of the FHLB System and how they may act to enhance or subdue FHLB risk-taking incentives relative to Fannie Mae and Freddie Mac.

FHLB Membership, Collateral, and Liquidity Provision

As discussed above, between 1932 and 1989 the FHLB System long acted as a reliable supplier of long-term funding via advances for the thrift industry. These institutions faced statutory asset limitations that resulted in balance sheets almost entirely comprised of residential mortgage-related assets. Moreover, all depository institutions were subject to limitations on the interest rates that they paid depositors (since 1933 under Regulation Q), which periodically resulted in liquidity pinches. Specifically, deposits would decline when the regulation was binding; making FHLB advances an important source of substitute funding to maintain the flow of mortgage credit.

A series of legislative changes since 1980 significantly altered the role of the FHLB System within the U.S. mortgage finance system. First, the Depository Institutions Deregulation and Monetary Control Act of 1980 and the Garn-St. Germain Depository Institutions Act of 1982 terminated the Regulation Q ceiling on savings account interest rates and gave thrifts expanded investment powers. Second, the Financial Institutions Recovery and Reform Act of 1989 opened FHLB membership to all depository institutions with more than 10 percent of their portfolios in residential mortgage-related assets (i.e., whole mortgages and mortgage-backed securities). Third, the Financial Services Modernization Act of 1999 expanded the mission of the FHLB System

to act as a general source of liquidity to "community financial institutions" and lifted the requirement that federally chartered thrifts be FHLB members.[21]

All three pieces of legislation served to erode the link between FHLB advances and residential mortgage funding. Indeed, given the modest constraint on FHLB membership related to residential mortgage activity, the portfolio composition of most FHLB members (especially the largest members that dominate advance activity), and the simple fact that money is fungible; FHLB advances could fund virtually any type of asset.

Frame, Hancock, and Passmore (2012) show that eligible collateral has not been a binding constraint for commercial bank borrowing from the FHLB System. Looking at commercial banking organizations of various sizes and over time, the authors find that the ratio of FHLB advances to eligible collateral is very low. This represents a necessary condition for banking organizations to use advances as a general source of liquidity.

Frame, Hancock, and Passmore (2012) also estimate panel vector-autoregressions that include bank portfolio composition and macroeconomic variables for three banking organization size categories and three distinct time periods between 1996 and 2009. The authors find three key results. First, bank portfolio responses to FHLB advance shocks are of similar magnitude for residential mortgages, for commercial and industrial loans, and for other real estate loans (i.e., loans for construction and development, agriculture, and commercial real estate). Second, unexpected changes in various types of bank lending are accommodated using FHLB advances;

[21] The Housing and Economic Recovery Act of 2008 expanded the definition of a "community financial institution" from $500 million to $1 billion in total assets (with each figure adjusted over time to account for inflation).

although specific results depend on banking organization size and the time period studied. Third, small and medium-sized banking organizations appear to use FHLB advances to reduce the variability in residential mortgage lending resulting from either federal funds rate shocks or GDP shocks. Overall, the authors conclude that FHLB advances are being used to fund all types of banking assets, not just residential mortgages.

FHLB outstanding advances jumped during the onset of the financial crisis -- from $641 billion to $875 billion during 2007 and then rising to $929 billion by the end of 2008. (Advance volume then slid back to pre-crisis levels in 2009 – to $631 billion.) Ashcraft, Bech, and Frame (2010) show that during the second half of 2007, the 10 most active FHLB members accounted for almost $150 billion of this new lending. (Washington Mutual, Bank of America, and Countrywide borrowed the largest amounts from the FHLB System during this period.) Notably, four of the ten institutions subsequently failed or were acquired, while two others required "exceptional assistance" from the U.S. government during the financial crisis. The authors also present statistical evidence suggesting that large banks and thrifts (greater than $5 billion in assets) principally used FHLB advances as a substitute for short-term borrowing via the federal funds and repo markets.

Ashcraft, Bech, and Frame (2010) note that, as liquidity pressures developed during the fall of 2007, FHLB advances became an attractive source of funding in terms of pricing. FHLB funding costs moved well below other benchmarks, like LIBOR and AA-rated asset-backed commercial paper, while the average spread between a 30-day advance from the FHLB New York and four week FHLB System discount notes remained unchanged at about 25 basis points. FHLB advances were also cheaper than borrowing from the Federal Reserve's Discount Window during

this time, despite a 50 basis point reduction in the central banks' primary credit rate.[22] FHLB advances were also attractive in terms of available maturities – with many members electing to borrow long-term.

According to Ashcraft, Bech, and Frame (2010), the reduction of the discount rate to 25 basis points over the federal funds target in March, 2008 almost established parity in terms of the all-in cost of Discount Window loans and FHLB advances. During the following months, the Discount Window became more attractive from a pricing perspective. An important reason for this was a negative change in investor attitudes towards Agency debt issues that started during the summer of 2008 as a result of financial distress at Fannie Mae and Freddie Mac.[23] Later that year following the Lehman Brothers bankruptcy, the Federal Deposit Insurance Corporation expanded deposit insurance coverage limits and established the Temporary Liquidity Guarantee Program of bank debt. These developments likely contributed to stagnant advance growth in late 2008 and 2009.

The financial crisis also spurred FHLB System lending to insurance companies. Foley-Fisher, Narajabad, and Verani (2015) illustrate how the FHLBs provided significant liquidity to insurers that had previously issued "funding agreement-backed securities" through off-balance sheet special purpose entities. Advances to insurance companies remain quite elevated by historical standards.

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[22] The authors estimate that the rate on a 30-day advance from the New York FHLB was 20–40 basis points cheaper than a similar Discount Window loan in late 2007 following the Federal Reserve's reduction in the primary credit rate.

[23] See Frame, Fuster, Tracy, and Vickery (2015) for a detailed discussion of financial distress at Fannie Mae and Freddie Mac during this time.

Ashcraft, Bech, and Frame (2010) point out that the FHLB System's experience during the financial crisis demonstrates the limitations of relying on a government-sponsored emergency liquidity provider with only implicit government backing. Hence, the authors describe the FHLB System as being the "lender of next-to-last resort".

Conclusion

For over 50 years, the 12 Federal Home Loan Banks provided low-cost liquidity to the mortgage market via collateralized advances to specialized mortgage lenders. However, legislative changes in the 1980s and 1990s broke the link between FHLB advances and mortgage lending. Today, the FHLB System acts as a general source of subsidized liquidity to its members – not only "community financial institutions" but also systemically important banking organizations. Hence, despite its name and size, the FHLB System today actually provides little targeted support to the U.S. housing finance system. Indeed, if today's FHLB System was to provide such targeted support, it would likely require limiting membership to the small handful of financial institutions with very large concentrations of home mortgages. This would likely mean a much smaller FHLB System (in terms of size and the number of institutions) that may not be economical.

Two recent proposals have emerged to improve the alignment of FHLB System activities with their statutory mission. A "white paper" issued by the U.S. Treasury and U.S. Department of Housing and Urban Development (2011) suggested limiting borrower advances in an effort to better target FHLB System benefits toward small and medium-sized financial institution members. The document also proposed reducing FHLB investment portfolios, which have limited

mission benefits and have caused risk management problems. The Federal Housing Finance Agency has also considered tying ongoing FHLB membership to member asset composition.[24] Specifically, that FHLB members maintain 10 percent of their portfolios in residential mortgage assets; with an exception for community financial institutions (one percent of their portfolios in residential mortgage assets). Perhaps not surprisingly, even these modest changes aimed at better aligning the FHLB's activities to their statutory mission have met strong political opposition.

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Table 1
Federal Home Loan Bank Size and Membership by District
(Data as of December 31, 2013)

FHLB	Total Assets	Number of Members	Membership Concentration (Five Largest Members)	
	$ Billion		Share of Capital	Share of Advances
Atlanta	$122.32	996	46.70%	55.50%
Boston	$44.64	443	47.40%	34.30%
Chicago	$68.80	759	35.70%	56.10%
Cincinnati	$103.18	727	59.60%	77.70%
Dallas	$30.22	875	18.10%	26.90%
Des Moines	$73.00	1183	41.10%	58.80%
Indianapolis	$37.79	404	35.00%	42.30%
New York	$128.33	333	56.90%	62.50%
Pittsburgh	$70.67	297	64.80%	77.40%
San Francisco	$85.77	354	54.60%	62.20%
Seattle	$35.87	329	61.30%	75.60%
Topeka	$33.95	804	32.40%	46.30%

Source: FHLB System Combined Financial Report for 2013.

Table 2
Federal Home Loan Bank System Combined Balance Sheet
(Data as of December 31, 2013)

		($ Millions)	(% of Assets)
Assets			
Advances	$	498,599	59.8%
Short-Term Investments	$	62,324	7.5%
Long-Term Investments	$	180,539	21.6%
Agency Debt	$	22,589	2.7%
Agency MBS	$	104,943	12.6%
Private-Label MBS	$	20,839	2.5%
Other	$	32,168	3.9%
Mortgage Loans (Net)	$	44,442	5.3%
Other Assets	$	48,296	5.8%
Total Assets	$	834,200	100.0%
Liabilities			
Consolidated Obligations	$	767,141	92.0%
Discount Notes	$	293,296	35.2%
Bonds	$	473,845	56.8%
Deposits	$	10,555	1.3%
Mandatorily Redeemable Capital Stock	$	4,998	0.6%
Other Liabilities	$	6,436	0.8%
Total Liabilities	$	789,130	94.6%
Capital			
Capital Stock	$	33,375	4.0%
Retained Earnings	$	12,206	1.5%
Accumulated Other Comprehensive Income	$	(511)	-0.1%
Total Capital	$	45,070	5.4%

Source: FHLB System Combined Financial Report for 2013

Table 3
Top 10 FHLB Advance Holders by Holding Company
(Data as of December 31, 2013)

Holding Company	Par Value of Advances ($ Millions)	Percent of Total Advances
JP Morgan Chase & Co.	$61,831	12.60%
Bank of America Co.	$28,938	5.90%
Citigroup Inc.	$25,202	5.10%
Wells Fargo & Co.	$19,141	3.90%
Capital One Financial Corp.	$16,314	3.30%
MetLife, Inc.	$15,000	3.00%
PNC Financial Services Group, Inc.	$12,907	2.60%
New York Community Bancorp, Inc.	$11,084	2.30%
Banco Santander, S.A.	$8,965	1.80%
BB&T Corporation	$8,182	1.70%
Total	$207,564	42.20%

Source: FHLB System Combined Financial Report for 2013.

Table 4
FHLB Asset Composition
(Data as of December 31, 2013)

	Advances (% Assets)	Investments (% Assets)	Mortgages (% Assets)	Total (% Assets)
Boston	62%	29%	8%	98%
New York	71%	16%	2%	88%
Pittsburgh	71%	20%	5%	95%
Atlanta	73%	22%	1%	96%
Cincinnati	63%	22%	7%	92%
Indianapolis	46%	29%	16%	91%
Chicago	34%	53%	11%	98%
Des Moines	63%	28%	9%	99%
Dallas	53%	43%	0%	97%
Topeka	51%	26%	18%	94%
San Francisco	52%	41%	1%	94%
Seattle	30%	63%	2%	96%

Source: FHLB System Combined Financial Report for 2013.