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CREDIT OPINION
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Update

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Federal Home Loan Banks

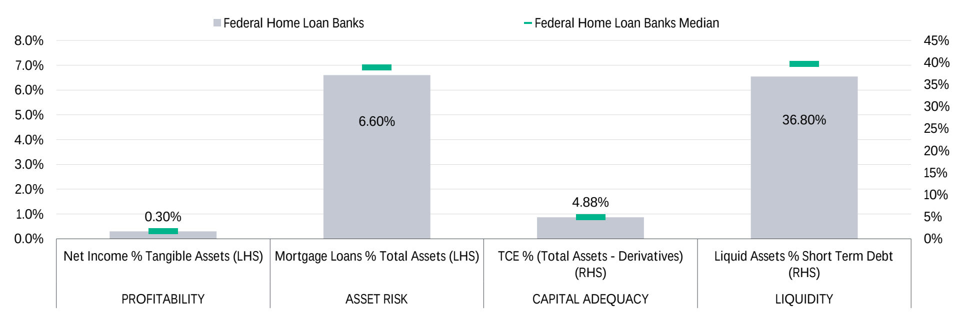
Update to credit analysis

Summary

The Federal Home Loan Bank System's (FHLBank System) Aaa long-term senior unsecured debt rating and Prime-1 short-term issuer rating were affirmed in October 2019 and reflect the combination of the FHLBank System's a1 baseline credit assessment (BCA), our assumption of a very high likelihood of support from the US Government (Aaa stable), and high dependence between the FHLBanks and the US Government. The rating outlook is stable.

Like other financial institutions, the FHLBank System has to contend with the global spread of the coronavirus, which is resulting in simultaneous supply and demand shocks that will materially slow economic activity, particularly through the first half of 2020. The full extent of the economic costs will be unclear for some time. Fear of contagion has dampened consumer and business activity and the longer it takes for a resumption of normal activity, the greater the economic impact. Fiscal and monetary policy measures will help limit the damage, and policy announcements so far suggest that policy response is strong in the US. However, the pandemic will have a direct negative impact on banks' asset quality and profitability, in some cases in a pronounced manner, including for many that are FHLBank System borrowing members. However, advances to members, an over-collateralized asset, are close to two-thirds of the System's banks' combined balance sheet and have never resulted in a loss.

Exhibit 1
Rating Scorecard - Key Financial Ratios [1]



[1] All ratios are as of 12/31/2019
Source: Moody's Financial Metrics

The FHLBank System's a1 BCA reflects its excellent asset quality, good earnings stability and strong capitalization. In arriving at the FHLBank System's BCA, we consider the eleven FHLBanks' individual BCAs, ten of which are a1 (FHLBank New York's BCA is aa3), and the credit profile of the FHLBank System as if it were a combined entity. The FHLBank System's BCA also incorporates the benefits to its debt holders from the joint and several liability of all eleven banks for the System's consolidated bonds and consolidated discount notes.

The Aaa debt and deposit ratings capture the FHLBanks' special role as providers of liquidity to the US banking system, which was once again demonstrated in 1Q20 when systemwide advances increased 26%, or a sizable $165 billion, from year-end 2019, as well as the banks' status as government-sponsored enterprises (GSEs). Both attributes contribute to our view that there is a very high likelihood of support from the US Government in the event that an individual FHLBank or the FHLBank System were in danger of default.

Credit strengths

» Joint and several liability reduces default risk of the FHLBank System's consolidated obligations

» Although narrowly focused, the FHLBanks are central liquidity providers to US banks and other members, underscoring their importance to the US financial system

» Excellent credit quality of FHLBanks' advance portfolio, investment portfolio (excluding a small private label RMBS book), and mortgage portfolio minimizes asset risk

Credit challenges

» Narrow charter and bank consolidation limit growth

» Substantial single borrower concentrations at the individual FHLBank level

» Reliance on confidence-sensitive market funding, but market access is strong due to GSE status

Outlook

The stable rating outlook reflects our stable outlook on the ratings for the US government. Any rating actions on the US Government would likely result in the FHLBank System's long-term bond rating moving in lock step with any US sovereign rating action.

Factors that could lead to an upgrade

At Aaa, an upgrade of the FHLBank System's long-term debt is not possible. A higher BCA could occur if the FHLBanks re-focused their businesses such that advances represent more than 70% of assets while maintaining: 1) strong profitability, 2) a stable member risk profile, 3) continued strong asset risk, including modest asset-liability and operational risk, and 4) robust capital and liquidity.

Factors that could lead to a downgrade

Any negative rating action on the US Government would likely result in the FHLBank System's long-term senior unsecured debt rating moving in lock step with any US sovereign rating action.

Barring a downgrade of the US sovereign rating, a decline in our government support assumptions for the FHLBank System, or a material downgrade of the FHLBank System's a1 BCA, we do not expect changes to the FHLBank System's debt and issuer ratings. This is due to the fact that the ratings incorporate an expectation of a very high degree of US Government support.

Factors that could lead to a downgrade of the FHLBank System's BCA of a1 include materially higher loss expectations on the FHLBanks' mortgage holdings and/or private-label MBS portfolios, multiple quarterly net losses or significant asset-liability mismatches. In addition, an expansion of the FHLBanks' risk profile, for example due to a change in their government mandate or self-initiated, could result in lower standalone BCAs. The BCA for the FHLBank System could then be downgraded based on downgraded BCAs at individual FHLBanks.

Key indicators

Exhibit 2
Federal Home Loan Banks (Consolidated Financials) [1]

	12-19[2]	12-18[2]	12-17[2]	12-16[2]	12-15[2]	CAGR/Avg.[3]
Total Assets (USD Billion)	1,099.1	1,102.9	1,103.5	1,056.7	969.2	3.2[4]
Net Income / Tangible Assets (%)	0.3	0.3	0.3	0.3	0.3	0.3[5]
Liquid Assets (GSE) / Short Term Debt (%)	36.8	27.6	27.8	27.2	28.1	29.5[5]
Tangible Common Equity / (Total Assets - Derivatives) (%)	4.9	5.4	5.2	5.1	5.1	5.1[5]
Mortgage Loans / Total Assets (%)	6.6	5.7	4.9	4.6	4.6	5.3[5]

[1]All figures and ratios are adjusted using Moody's standard adjustments. [2]Basel I; US GAAP. [3]May include rounding differences because of the scale of reported amounts. [4]Compound annual growth rate (%) based on the periods for the latest accounting regime. [5]Simple average of periods for the latest accounting regime.
Sources: Moody's Investors Service and company filings

Profile

The FHLBanks are federally-chartered GSEs that were organized under the Federal Home Loan Bank Act of 1932. The FHLBanks together with the Office of Finance comprise the FHLBank System. Each of the FHLBanks and the Office of Finance operate under the supervisory and regulatory framework of the Federal Housing Finance Agency (FHFA). Each FHLBank operates as a separate entity with its own management, employees, and board of directors.

The FHLBanks' primary business is lending to its roughly 6,700 member institutions, primarily banks, savings institutions, credit unions and insurance companies in the form of advances, which are generally short-term and over-collateralized, minimizing the credit risk on these loans. In addition, the FHLBanks benefit from their statutory lien priority with respect to certain pledged member assets. Many FHLBanks also purchase mortgage loans, principally 15-30 year conventional and government-guaranteed or insured fixed-rate loans. The FHLBanks also invest in securities, principally MBS, subject to an investment limit of three times regulatory capital without approval by the FHFA. Some FHLBanks offer correspondent services to their member institutions, including wire transfer, security safekeeping, and settlement services.

Detailed rating considerations

Asset quality and credit risk management

Excluding a small non-agency MBS portfolio that has shrunk significantly in recent years, we believe the FHLBank System's asset quality is exceptional. In particular, advances, which represent nearly two-thirds of total assets, are over-collateralized and have never resulted in a loss. This is reflected in the aa2 assigned score for Asset Risk in our scorecard, shown at the back of this report.

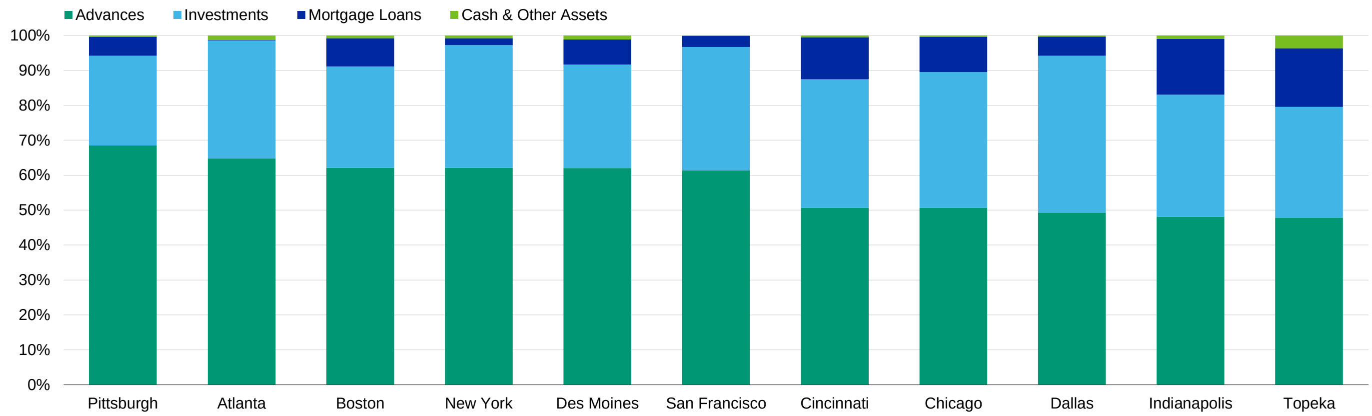
As shown in the exhibit below, the eleven FHLBanks have modestly different asset mixes, but advances constitute the majority of assets at most of the banks. Each FHLBank has sole credit approval power and establishes its own underwriting standards and eligible collateral within FHFA guidelines. Eligible collateral includes current first-lien residential mortgages (overwhelmingly single-family) or securities backed by such mortgages, Federal Agency securities, FHLBank deposits and other real estate-related assets approved by the relevant FHLBank's board of directors, such as commercial real estate loans.

Investments, which are primarily high quality US government and agency guaranteed securities, comprise most of the remainder of the banks' balance sheets. Although no FHLBank has purchased private-label mortgage-backed securities since 2008 and that portfolio is much reduced in size, the remaining exposures continue to present some credit risk to the respective FHLBanks. Indeed, as reported by the FHLBank System in early May, $40 million of the $43 million in 1Q20 credit loss provisions for the FHLBanks on a combined basis, was driven by declining fair values on private-label mortgage-backed securities.

The FHLBanks' conforming mortgage portfolio programs, known as MPF and MPP, provide members with an alternative to Fannie Mae and Freddie Mac execution. The FHLBank System's mortgage portfolio represented 6.6% of total assets as of 31 December 2019 versus 5.7% as of 31 December 2018. The FHLBanks' mortgage assets are more susceptible to credit losses, and in particular, carry heightened operational complexity relative to the FHLBanks' core lending business. However, credit risk performance of the MPF and MPP programs have been very good to date, exceeding that of similar programs of Fannie Mae and Freddie Mac. This excellent track record reflects the high quality of mortgage assets purchased and credit enhancements of the FHLBanks' MPF and MPP programs.

Exhibit 3

Asset mix of the FHLBanks



As of 12/31/2019

Source: Company Filings

Capital adequacy

Each FHLBank is required by legislation to maintain minimum regulatory capital of 4% of its total assets. As of 31 December 2019, the capital ratio of the FHLBank System was 5.14%, down slightly from 5.36% at year end 2018. Regulatory capital to assets dropped a further ten basis points in 1Q20. In our view, capital levels reflect the low risk profile of the FHLBank System's asset base, which is primarily comprised of advances to members. The aa1 assigned score for Capital in our scorecard incorporates our estimate of the FHLBank System's TCE ratio on a risk-weighted basis, which is very strong.

Profitability

The FHLBank System's low but consistent profitability (as measured by ROAA) reflects the primarily low risk profile of its asset base. For 2019, the FHLBank System's reported ROAA was 0.29%, down slightly from 0.32% for the same period in the prior year, compared to a median in excess of 1.00% for A-rated US Banks in 2019. The baa1 assigned score for Profitability in our scorecard reflects the typically low earnings volatility. Although net income in 1Q20 fell 30% from a year earlier for the FHLBanks on a combined basis, three of the banks reported an increase in earnings, and only one reported a small net loss.

Liquidity and Funding

The FHLBank System's GSE status provides it with consistent and stable access to the debt markets and informs the baa1 assigned score for Funding Structure in our scorecard. The FHLBanks' internal sources of liquidity are modest, but have strengthened with recent regulation.

Specifically, FHFA, the regulator of the FHLBanks, issued updated liquidity guidance in the summer of 2018 that took full effect on 31 December 2019. Under the updated guidance, the FHFA established requirements for the FHLBanks' base case liquidity and implemented new funding gap metrics for three-month and one-year maturity horizons. In addition, the guidance addressed liquidity stress testing and contingency funding plans. We expect that all FHLBanks will remain in compliance with the updated liquidity requirements.

Although credit market disruption due to the coronavirus pandemic was widespread in 1Q20, particularly in March, the System's consolidated obligations grew significantly, led by a 43% increase in discount notes. This growth during a particularly challenging period is further evidence of the System's funding resilience. Nonetheless, longer-dated bond issuance was affected by the market disruption as investors preferred short-term instruments at the height of the uncertainty.

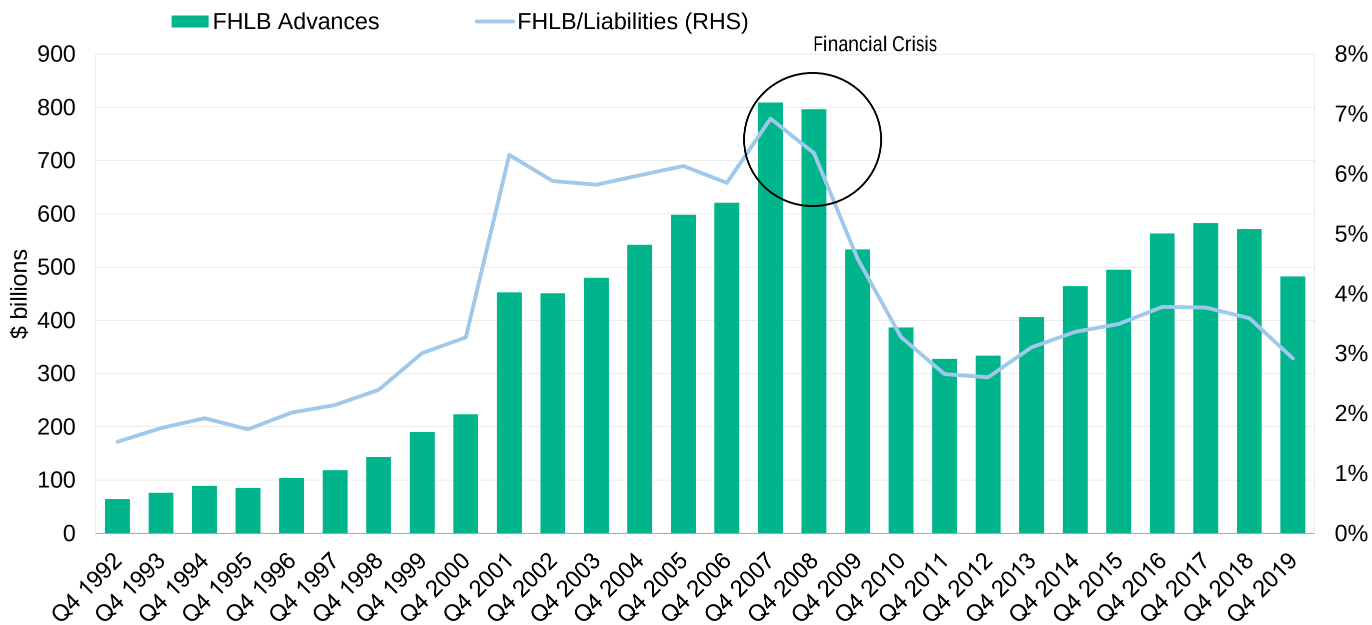
Special role as a provider of liquidity to US financial institutions

As GSEs, the FHLBanks' ability to access funding throughout the cycle underpins their importance to the financial system. This is particularly true during times of extreme market disruption when they become a primary source of contingent liquidity for their members. As shown below, at the height of the last financial crisis, advances (specifically to regulated depository members, excluding insurance company members and other non-members) climbed a few hundred billion dollars for the system as a whole before receding as the financial markets and overall economy recovered. Preliminary 1Q20 data released in early May indicates indicates that advances climbed 26%, or $165 billion, from year-end 2019.

Exhibit 4

FHLB advances have been proven to be a stable source of funding, even during times of crisis

Systemwide advances to regulated depository members 1992-2019



Source: FDIC

Environmental, social and governance considerations

The FHLBank System's exposure to environmental risks is low, consistent with our general assessment for the global banking sector. See our Environmental risk heatmap for further information.

Overall, we consider banks to face moderate social risks. The most relevant social risks for banks arise from the way they interact with their customers. Social risks are particularly high in the area of data security and customer privacy, which is partly mitigated by sizeable technology investments and banks' long track record of handling sensitive client data. See our Social risk heatmap for further information.

Governance is highly relevant for the FHLBank System, as it is to all players in the banking industry. Corporate governance weaknesses can lead to deterioration in a bank's credit quality, while governance strengths can benefit a bank's credit profile. Governance risks are largely internal rather than externally driven, and for the FHLBank System we do not have any particular governance concerns. Nonetheless, corporate governance remains a key credit consideration and requires ongoing monitoring.

GSE reform

On 5 September 2019, the U.S. Department of the Treasury published recommended housing reforms. Although the focus of the recommendations were centered on Fannie Mae and Freddie Mac, if implemented, the proposals would result in reduced market share for those entities. As a consequence, traditional banks' market share of US mortgages would increase, which would enhance the FHLBanks' market position.

The recommendations also suggested that the regulatory rule excluding captive insurance companies from FHLBank membership should be revisited in light of the continued evolution of the housing finance system. On 24 February 2020, several months after the Treasury's report, the FHFA issued a request-for-input on the possibility of expanding the system's membership to nonbank institutions.

By issuing the request-for-input, the FHFA is seeking public comment on safety and soundness issues associated with such a move. Despite the potential growth opportunities for the FHLBank System, extending membership to nonbanks would be credit negative for the system because it would introduce elevated risks of lending to nonbank companies compared with lending to bank and traditional insurance company members. That is because nonbanks and their affiliates are financially weaker than traditional FHLBank members.

Methodology and scorecard

Our BCA scorecard is designed to capture, express and explain in summary form our Rating Committee's judgment. When read in conjunction with our research, a fulsome presentation of our judgment is expressed. As a result, the output of our BCA scorecard may materially differ from that suggested by raw data alone (though it has been calibrated to avoid the frequent need for strong divergence). The BCA scorecard output and the individual scores are discussed in rating committees and may be adjusted up or down to reflect conditions specific to each rated entity. We also assess the level of support and, consequently, the ratings uplift from the US Government (Aaa stable) using our Government-Related Issuers methodology.

Exhibit 5

Rating Factors

Federal Home Loan Banks

Macro Factors		
Weighted Macro Profile	Very Strong -	100%

Financial Profile						
Factor	Historic Ratio	Initial Score	Expected Trend	Assigned Score	Key driver #1	Key driver #2
Solvency						
Asset Risk						
Problem Loans / Gross Loans	0.1%	aa1	←→	aa2	Long-run loss performance	
Capital						
Tangible Common Equity / Risk Weighted Assets (Basel I)	17.0%	aa2	←→	aa1	Risk-weighted capitalisation	
Profitability						
Net Income / Tangible Assets	0.3%	ba2	←→	baa1	Earnings quality	
Combined Solvency Score				aa3		
Liquidity						
Funding Structure						
Market Funds / Tangible Banking Assets	94.3%	caa3	←→	baa1	Market funding quality	
Liquid Resources						
Liquid Banking Assets / Tangible Banking Assets	27.3%	a2	←→	baa2	Expected trend	
Combined Liquidity Score		ba3		baa1		
Financial Profile				a1		

Qualitative Adjustments	Adjustment
Business Diversification	0
Opacity and Complexity	0
Corporate Behavior	0
Total Qualitative Adjustments	0
Sovereign or Affiliate constraint	Aaa
BCA Scorecard-indicated Outcome - Range	aa3 - a2
Assigned BCA	a1

Source: Moody's Investors Service

Ratings

Exhibit 6

Category	Moody's Rating
FEDERAL HOME LOAN BANKS	
Outlook	Stable
Senior Unsecured	Aaa
ST Issuer Rating	P-1

Source: Moody's Investors Service

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