

# WHITE PAPER FROM THE **SOLUTIONS DESK**

**FHLB Chicago**  
Federal Home Loan Bank of Chicago

## Deploying Your Liquidity: Residential Lending and Investment Strategies

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### Overview

Most Federal Home Loan Bank of Chicago (FHLBank Chicago) depository members continue to see growing liquidity levels at their institutions. Ideally, this cash generated from the influx of deposits could be lent out to your core line of business, whether that be consumer, commercial, industrial, agriculture, real-estate or other loans. Keeping the liquidity in cash or short-term assets will generate safe and stable net interest income while putting institutions in a position to lend at a higher rate later on, if core loan demand grows to match the liquidity. However, short-term or low duration floating rate assets are typically at much lower than desired yields relatively. There is an opportunity cost with waiting to fully deploy your liquidity. Consider deploying some liquidity to holding or purchasing longer-term fixed rate assets such as jumbo residential loans, agency backed bonds, agency commercial mortgage backed securities (CMBS), municipal, or corporate bonds as a long-term income generating strategy for your institution.

We encourage members to use a mix of deposit funding with some long-term FHLBank Chicago fixed-rate advances to hedge against interest rate risk. Further, pledge those assets with us to maximize your borrowing capacity. If deposit outflows dry up liquidity, FHLBank Chicago will be here to supplement with competitively priced advances. If rates rise, locking-in some longer-term advances at today's rates will protect against unrealized losses associated with the price volatility on the assets. If rates remain unchanged or fall, your institution will earn above market rates as the assets roll down the curve over time.

### Low Yield on Short-Term Assets

Short-term assets such as FHLBank discount notes, treasury bills, or interest earned on excess reserves (IOER) at the Fed can produce low but stable net interest income when funding costs are near 0%. Agency backed floating rate securities such as Fannie Mae's Multifamily SOFR ARMs in Delegated Underwriting and Servicing (DUS) program is another popular investment for our members seeking more income while still positioning themselves to benefit in rates up. However, the yield on these assets relative to core lending can lower metrics such as net interest margin (NIM), return on assets (ROA), and return on equity (ROE).

### Long-Term Strategies

Given the opportunity cost of staying short, we encourage our members to think about putting some liquidity to work on the long-end of the curve into fixed-rate assets where absolute yields have risen. Hedge some of the interest rate risk of higher duration assets with some longer-term advances or pay-fixed interest rate swaps.

	Rates Down ↓	Rates Unchanged ▬	Rates Up ↑
<b>Benefits</b>	<ul style="list-style-type: none"> <li>• Market value gain on assets</li> <li>• Higher income for longer</li> <li>• Increased borrowing capacity when assets are pledged</li> </ul>	<ul style="list-style-type: none"> <li>• Higher income as assets roll down the curve</li> <li>• Increased borrowing capacity when assets are pledged</li> </ul>	<ul style="list-style-type: none"> <li>• Long-term fixed advances are locked-in at a lower rate</li> <li>• Borrow against assets pledged as collateral to fund now higher yielding assets</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>• Long-term fixed advance funding looks more expensive</li> </ul>	<ul style="list-style-type: none"> <li>• Long-term fixed advance funding looks more expensive as it rolls down the curve</li> </ul>	<ul style="list-style-type: none"> <li>• Market value loss on assets</li> <li>• Opportunity cost of deploying liquidity to higher yielding assets</li> </ul>

### Option 1: Jumbo Residential Loans on Balance Sheet

Many FHLBank depository members are active sellers in our Mortgage Partnership Financing® (MPF®) program. Some members prefer to sell residential mortgage loans off their balance sheet, thus eliminating the associated prepayment and extension risks. This is especially the case with larger jumbo loans which are not currently accepted within our MPF program or other traditional mortgage liquidity providers. However, some members have found value in holding them on balance sheet, hedging with some longer-term and callable advances from FHLBank Chicago.

New issue 30-year jumbo residential loans are classified as being over the 2021 conforming loan limit of \$548,250 by the Federal Housing Finance Authority (FHFA). Jumbo loans within new issue agency mortgage back securities from Fannie Mae, Freddie Mac, and Ginnie Mae are yielding close to 3.5% as of March 2021. See the table below:

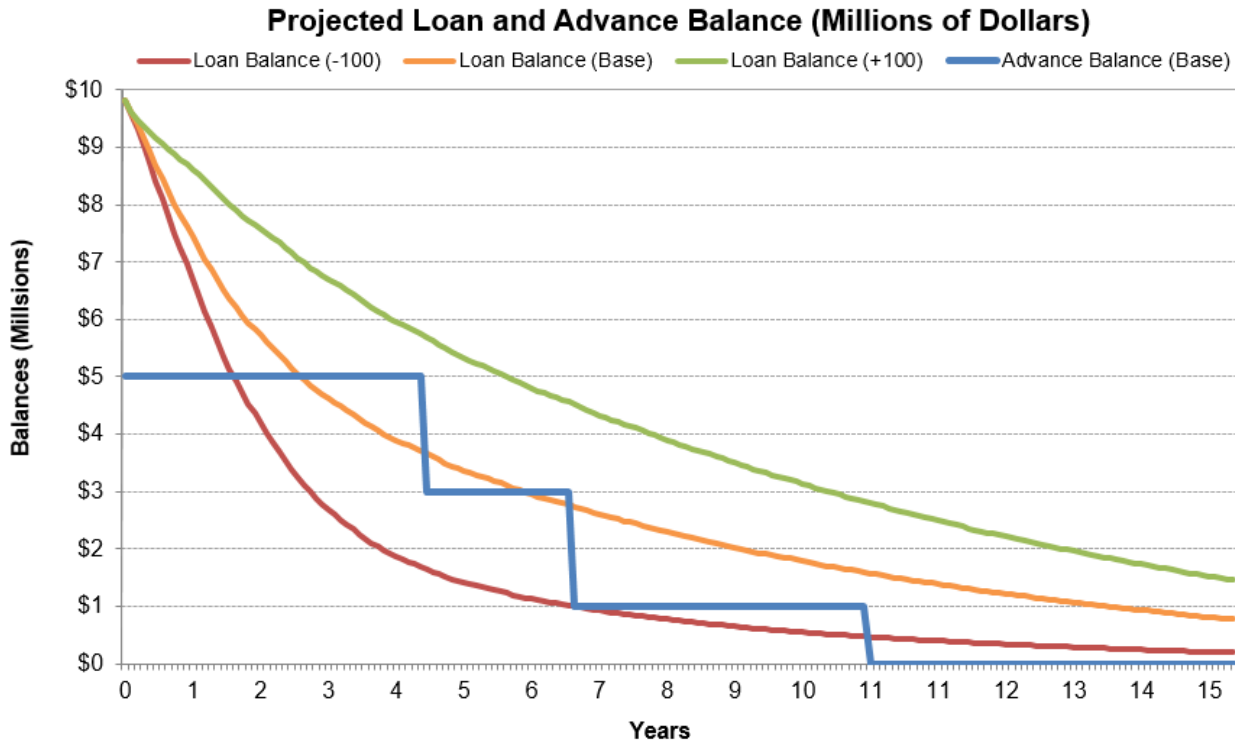
30Y Jumbo Residential Loans			Rates Unchanged			Rates -100 bps			Rates +100 bps		
Agency as Proxy	Avg. Loan Size	Yield at par	Avg. Life (Years)	Long Term CPR	Price	Avg. Life (Years)	Long Term CPR	Price	Avg. Life (Years)	Long Term CPR	Price
Fannie Mae	784,667	3.47%	5.2	16	\$100.00	2.8	29	\$102.49	7.9	9	\$94.65
Freddie Mac	607,000	3.46%	4.2	20	\$100.00	2.6	32	\$102.28	7.2	11	\$94.84
Ginnie Mae	648,142	3.48%	5.4	15	\$100.00	3.0	27	\$102.27	7.2	7	\$94.98
<b>Average:</b>	<b>679,936</b>	<b>3.47%</b>	<b>5.0</b>	<b>17</b>	<b>\$100.00</b>	<b>2.8</b>	<b>29</b>	<b>\$102.35</b>	<b>7.4</b>	<b>9</b>	<b>\$94.82</b>

Member's willing to take on some of the interest rate risk associated with these residential loans could fund them with a mix of deposits and FHLBank advances. Accounting for FHLBank Chicago's Dividend Benefit\*, members would pay an estimated 0.60% all-in funding cost with this strategy. See the table below:

Funding	Allocation	Modified Duration	Interest Expense	All-in*
Deposits	50%	0.25	0.15%	0.15%
4Y Fixed	20%	4.0	0.79%	0.58%
6Y Fixed	20%	5.8	1.30%	1.09%
10NC5Y Bermudan	10%	7.6	2.09%	1.88%
<b>Total</b>	<b>100%</b>	<b>2.8</b>	<b>0.70%</b>	<b>0.60%</b>

\*Reflects Class B1 stock dividend as a reduction to the regular advance rate, based on historical and projected B1 dividend rates currently at 5% and an opportunity cost of buying stock and 4.50% advance capitalization for illustration purposes only.

Half the strategy uses the excess liquidity from deposits while the other half is comprised of fixed-rate and callable fixed-rate advances. The advances serve as a hedge to some of the interest rate risk related to the unknown timing of cash flows from a pool of jumbo residential loans. Advances with embedded call feature(s) allows you as the member to terminate the funding after a lock-out period and quarterly thereafter when electing Bermudan callable advances. This flexibility is optimal when funding assets like mortgage loans, which can be paid back at the discretion of the borrower. The chart below illustrates the projected timing of those cash flows with the advance balance in the base case on a 10M strategy. Deposits and other sources of liquidity, such as rolling short term advances, would fill the funding gap:



With this strategy, members can earn an estimated NIM of 287 basis points (bps), subject to unknown duration risk depending on the path of rates. FHLBank Chicago can help model your specific loan portfolio and suggest various funding options based upon your own risk appetite.

## Option 2: Long-Term Call Protected Securities

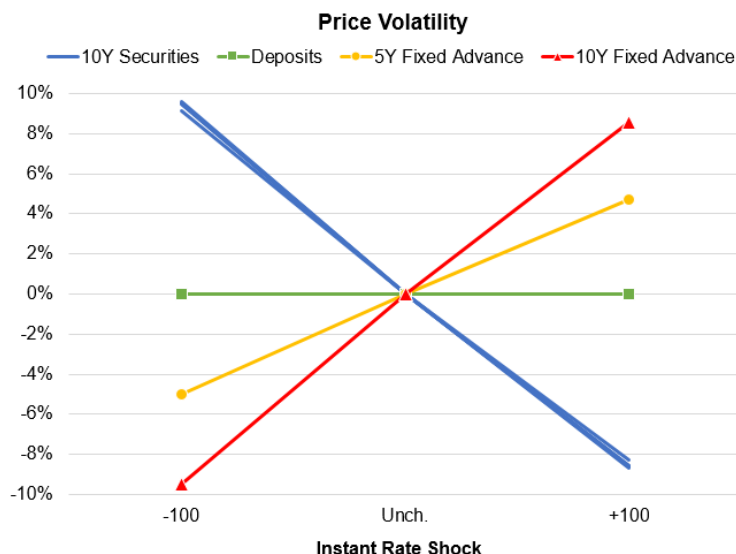
FHLBank Chicago members not willing to take prepayment or extension risk of mortgage loans can look to longer-term call protected securities where absolute yields have risen. Despite tight spreads over benchmark yields, deploying some of your excess liquidity to long duration assets could be an effective strategy to earn higher income in rates unchanged or rates down scenarios.

10-year fixed securities with little credit risk such as agency backed bullet bonds and call-protected CMBS from Freddie Mac offer yields over 1.8%. Members willing to take on some credit risk can look to higher yielding AAA municipal or corporate bonds yielding 1.9% to 2%. Members that are comfortable with bank-sub debt related securities can earn over 2.8% yield.

Long duration fixed-rate securities come with interest rate risk. As a result, even small movements of benchmark interest rates can lead to price volatility or market value gains and losses on the assets. This would be experienced in the form of unrealized gains or losses in other comprehensive income (OCI), if they are positioned as available for sale (AFS). FHLBank Chicago members can hedge this risk by funding with longer-term fixed rate advances or pay fixed interest rate swaps of similar duration. The price volatility of securities on the asset side of the balance sheet is offset by the inverse but symmetrical relationship of funding with longer-term advances. See the chart and table below for more details:

Securities Investments		Price Volatility (bps) Instant Shock		
Long-Term Securities	Yield	-100	Unch.	+100
10Y Agency Bullet	1.80%	9.6%	0.0%	-8.7%
10Y Freddie-K CMBS A2	1.84%	9.5%	0.0%	-8.6%
10Y AAA Taxable Municipal	1.91%	9.5%	0.0%	-8.6%
10Y AAA Corp	2.02%	9.5%	0.0%	-8.6%
10Y BBB Bank Sub-Debt	2.82%	9.1%	0.0%	-8.3%

Funding Sources		Price Volatility (bps) Instant Shock		
Type	All-in* Cost	-100	Unch.	+100
Deposits	0.15%	0.0%	0.0%	0.0%
3Y Fixed Advance	0.30%	-3.0%	0.0%	2.9%
5Y Fixed Advance	0.83%	-5.0%	0.0%	4.7%
7Y Fixed Advance	1.30%	-6.8%	0.0%	6.4%
10Y Fixed Advance	1.71%	-9.5%	0.0%	8.6%



\*Reflects Class B1 stock dividend as a reduction to the regular advance rate, based on historical and projected B1 dividend rates current at 5% and an opportunity cost of buying stock and 4.50% advance capitalization for illustration purposes only.

We encourage members to consider taking some interest rate risk with longer-term securities but hedged with a blended funding solutions. For example, the blended funding portfolio of deposits with a ladder of fixed-rate advances has an all-in funding cost below 1%. Member could earn between 85 – 187 bps funding the example securities with the blended funding strategy displayed below:

Funding	Allocation	Modified Duration	Interest Expense	All-in*
Deposits	25%	0.25	0.15%	0.15%
5 Year Fixed	30%	4.9	1.04%	0.83%
7 Year Fixed	25%	6.70	1.51%	1.30%
10 Year Fixed	20%	9.2	1.92%	1.71%
<b>Total</b>	<b>100%</b>	<b>5.0</b>	<b>1.11%</b>	<b>0.95%</b>

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## To Learn More

FHLBank Chicago is happy to discuss these strategies or other ideas with your institution. Please reach out to your Sales Director or any member of the Sales, Strategy, and Solutions to team for customized analysis, and let's find the right strategy for your institution.

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## Disclaimer

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There are associated risks with options. Because the FHLBank Chicago owns the option to terminate the advance prior to final maturity, the actual duration of the advance may be significantly lower than the stated maturity of the advance. Likewise, the FHLBank Chicago may not execute the put option, and the advance will be held to maturity in the case of falling interest rates. Contact your own accountants and attorneys before executing an A123 Putable Fixed Rate Advance.

Not all advance types are suitable for all members. Members must be aware of and understand the market and operational risks that are associated with advances with embedded options. Contact your accountants and attorneys before executing an advance with embedded options. Certain advances such as those that contain call or put options, interest rate caps, collars or floors, or other rate, term, or payment variations may require the acknowledgement of or execution of disclosure statements in which a member represents that it understands the risks associated with a particular advance.