



# FHLBI Insider

## The LIBOR-indexed convertible advance offers rate protection within a selected range.

Over the past few years, the FHLBI has offered wholesale funding with embedded options. Such products can assist in balancing interest rate risk and profitability goals. This *Insider* will consider how the LIBOR-indexed convertible advance can be used to hedge against rising interest rates.

Fixed-rate lending requires a reliable source of fixed-rate funding. For most institutions, long-term FHLBI advances have a lower acquisition cost than comparable retail funding. Advance alternatives include bullet, amortizing, and puttable. The LIBOR-indexed advance is priced below comparable bullet rate funding, has a lockout period, and has the potential to convert to an adjustable rate at option dates (which means the borrower must sign a statement disclosing the option risks). The difference is that the LIBOR-indexed advance will convert *only if LIBOR exceeds a threshold pre-selected by the borrower*. Since

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the LIBOR-indexed advance is tied to a specific conversion rate threshold or strike rate, the product is simpler to analyze than other puttable advances.

Consider the case of a 10 year advance with a 3 year lockout and a 7.00% LIBOR "strike" or trigger rate. This advance had the following characteristics as of August 15, 2001.

- Borrower receives a 10 year fixed rate of 4.90%, *unless* 3 month LIBOR exceeds 7.00% on a quarterly option date after the 3 year lockout period. On August 15, 2001, the 4.90% fixed rate was 112 basis points below 10 year bullet funding (6.02%).

- If 3 month LIBOR exceeds 7.00%, the FHLBI would convert the advance to a quarterly adjusting LIBOR advance for the remaining term. On August 15, 2001, 3 month LIBOR was 3.56%, or 344 basis points below the strike or trigger rate.

- In the event of a conversion to LIBOR, the borrower has the right to prepay the advance immediately

or at any quarterly rate reset.

The LIBOR-indexed advance offers an intriguing option for institutions that actively manage interest rate risk within a range. For example, institutions managing based on rates rising or falling 3.00% could consider the 10 year/3 year LIBOR-indexed advance as an economical alternative to 10 year bullet

### Exhibit 1 Advance Pricing

LIBOR strike rate	10 year/3 year LIBOR-indexed advance rate	Savings vs. 10 year bullet	Last date above strike rate
6.5%	4.77%	1.25%	12/06/00
7.0%	4.90%	1.12%	1/30/91
7.5%	5.01%	1.01%	1/16/91
8.0%	5.12%	0.90%	12/27/90
8.5%	5.22%	0.80%	12/26/90

funding. After all, a 3.00% rate increase would be insufficient to force conversion to adjustable rate funding. Given that the sample advance described above was priced 112 basis points below the alternative, the product is both consistent with managing interest rate risk and maximizing profitability.

The 112 basis point savings provided by the sample LIBOR-indexed

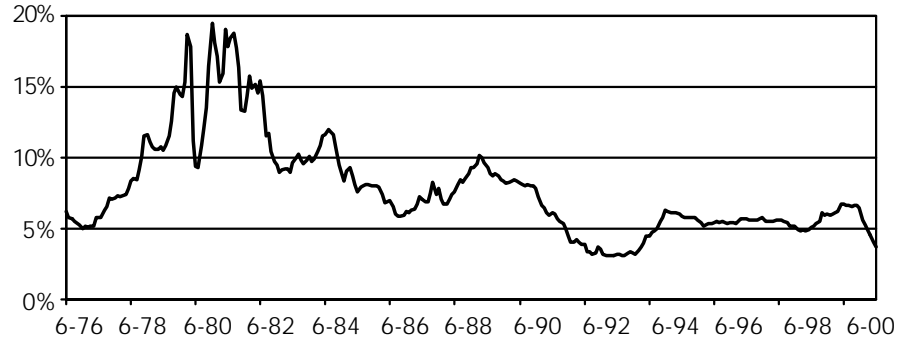


advance over 10 year bullet funding does not represent a free lunch. Rather, it represents the fair market value for selling interest rate protection or insurance. All products with embedded options can be thought of in the context of insurance. In the case of the 10 year/3 year LIBOR-indexed advance, the 112 basis point discount is to forego insuring against a rate shock greater than 344 basis points after the 3 year lockout period. If this protection is deemed to be unnecessary, it may be prudent to sell the excess insurance and pocket the savings.

Exhibit 1 shows it has been over 10 years since 3 month LIBOR exceeded 7.00%. During the calm 1990s, most LIBOR-indexed advances would have been effective and economical alternatives to generic bullet advances. Of course, this has not always been the case.

During periods of volatile interest rates, generic bullet advances tend to outperform products with embedded options. Since the option in LIBOR-indexed advances is linked to movements in short-term interest rates, aggressive rate tightening by the Federal Reserve is a risk. For example, the Fed moved aggressively to combat inflation during the late 1980s and early 1990s. Between 1978 and 1982, 3 month LIBOR ranged between 7.00% and the all-time high

**Exhibit 2**  
**3 Month LIBOR over 25 Years**



of 22.00%. With such a wide range of interest rates, it would have been difficult or impossible to set an effective strike rate. For example, a conservative strike rate of 500 basis points over LIBOR would have provided only slightly more protection than a strike rate of 300 basis points over LIBOR.

Though higher strike rates may provide some benefit during periods of volatility, longer lockout periods are far more effective. For example, advances with 5 year lockouts would have provided a great deal of protection during 1978-1982. In fact, the lockout period would have been sufficient to bridge the period of greatest volatility. Of course, longer lockout periods for

LIBOR-indexed advances provide a higher level of insurance and carry higher premiums. As of August 15, 2001, a 10 year/5 year advance was 33 basis points higher than an advance with a 3 year lockout (5.23% vs. 4.90%) for a 7.00% strike. But even with the premium, the 10 year/5 year advance was still 79 basis points less expensive than generic 10 year bullet funding.

Long-term LIBOR-indexed advances are an interesting risk management tool. The product enables an institution to purchase a precise amount of insurance against rising interest rates. Since no excess protection is purchased, profitability can be improved without interfering with interest rate risk goals.

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Send comments to Financial Communications, Federal Home Loan Bank, PO Box 60, Indianapolis, IN 46206.

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