

# Bank Asset/Liability Management <sup>SCI</sup>

Prepared by Mary Brookhart

## ALM Tactics and the Yield Line

The flat yield curve environment (or yield *line*) of 2006 is a challenging one for many banks. Spread income, a traditional driver of bank earnings, is compromised in a yield line market. This article will review the following investment and asset/liability management (ALM) tactics used by banks to enhance earnings and/or manage interest rate risk:

- Interest rate swaps;
- Wholesale securities leverage; and
- Bank-owned life insurance (BOLI).

In the past, flat and/or inverted yield curve environments have generally lasted from nine to 18 months. In 2000, the yield curve was slightly inverted, with both Fed Funds and the 10-year Treasury averaging around 6 percent. The current year, 2006, looks like a repeat of 2000, although rates across most maturities are about 1 percent lower. With liquidity tight in 2000, as in 2006, many banks were hesitant to put on longer-term fixed assets at narrow spreads.

The most recent yield curve inversions were followed by a period of declining rates, especially at the short end of the yield curve. Banks that extended asset maturities were rewarded as rates generally declined and asset prices generally increased. Banks and other investors are usually hesitant to extend maturities as rates increase, however. In addition, as rates near their peak, banks are generally tighter on liquidity, as noted above. Overall, periods near rate highs are normally periods with strong loan demand, absorbing funds that would otherwise be invested in securities.

**Plan Ahead.** Prudent bankers plan a move or two ahead, much like proficient chess players. The current market consensus is that short rates will increase somewhat in the near-term, be followed by a pause from the Fed, and then begin to decline. Unlike chess players who focus solely

### In This Issue:

- **ALM Tactics and the Yield Line** ..... 1
- **Assessing Your Bank's ALM Risk Tolerance** ..... 3
- **2006 Update — A Guide to Asset/Liability Management Software** ..... 5

### Editorial Board:

**Thomas E. Bowers**, CFA, *IPS-Sendero*

**George K. Darling**, *Darling Consulting Group*

**Gregory W. Doner**, *Financial Institutions Management Associates*

**David Easton**, *Bank of America*

**Mark Evans**, *Vining-Sparks IBG*

**Ira G. Kawaller**, *Kawaller and Co., LLC*

**Alan Kolosna**, *Net.B@nk*

**Jon Kozlowski**, *SunTrust Banks, Inc.*

**William McGuire**, *McGuire Performance Solutions, Inc.*

**Deedee Myers**, *DDJ Myers Ltd.*

**Fred Poorman, Jr.**, CFA, *The ALM Network*

**Joel L. Rosenberg**, *U.S. Banking Alliance*

**Thomas Day**, *SunGard*

on the end game, however, bankers are pressured to deliver out-performance in the near-term as well, so we consider the current performance of these tactics, as well as when short rates decline faster than long rates (e.g., the curve steepens).

In mid-2006, some market prognosticators are predicting one additional Fed Funds increase to 5.5 percent, then a Fed pause, followed by an intermediate-term Fed move to 4 percent. Proponents of the so-called *Taylor rule*, which provides guidance for central bank monetary policy, posit that a 4 percent Fed Funds rate approximates the long-term neutral rate in the United States. Herein, we

will use this short rate scenario for our analysis, with intermediate and longer rates unchanged. In other words, our *base case* scenario is a move to 4 percent Fed Funds and related short rates and 5.5 percent for intermediate- and long-term rates. In this context, we review three traditional tactics to earnings enhancement and/or interest rate risk strategies, on both a spread and after-tax ROA basis, as noted above: interest rate swaps, wholesale securities leverage, and BOLI.

**Interest Rate Swaps Analysis.** Banks that are usually asset-sensitive, like traditional commercial banks with a preponderance of variable rate loans, make more money when interest rates increase. They hedge their exposure to decreasing rates via a pay floating, receive fixed swap. An example of this *plain vanilla* swap would be to pay three-month LIBOR and receive the five-year swap rate. As short rates decrease, their swap expense declines, while their swap income is fixed. In 2003, this swap netted commercial bankers about 2 percent on a spread basis and 1.24 percent on an after-tax return on assets (ROA) basis (assuming an incremental tax rate of 38 percent).

Currently, both three-month LIBOR and the five-year swap rate are around 5.5 percent. The net effect is that the asset-sensitive bank will currently have zero net expense (or income). These banks are positioned, via the swap, to benefit as rates decline, thus hedging exposure to future yield declines in their loan portfolio. This is a viable tactic to hedge risk for an asset-sensitive bank. This swap is currently income neutral, so it does not offer any income benefits in the current environment, and will be positive (negative) if rates decrease (increase). In our *base case* 4 percent Fed Funds scenario, with three-month LIBOR at 4.25 percent, this swap will pay around 1.25 percent times the notional amount of the swap, or about 0.78 percent on an after-tax basis.

Banks that are usually liability-sensitive, like traditional thrifts with a preponderance of fixed rate mortgage loans, make more money when interest rates decrease. They hedge their exposure to increasing rates via a pay fixed, receive floating swaps. An example of this *plain vanilla* swap would be to pay the five-year swap rate and receive three-month LIBOR. As short rates decrease, their swap income declines, while their swap expense is fixed, for a net negative impact. The thrift, based on its structural balance sheet, benefits from declining rates. In 2003, this swap costs thrifts around 2 percent, or about 1.24 percent on an after-tax ROA basis.

The net effect is that the thrift will currently have no net expense, but will be positioned to benefit if rates should continue to increase, thus hedging exposure to future cost increases in their funding book. This is a viable strategy to

hedge risk for a liability-sensitive thrift and is currently income neutral. In our *base case* 4 percent Fed Funds scenario, with three-month LIBOR at 4.25 percent, this swap will cost around 1.25 percent times the notional amount of the swap, or about 0.78 percent on an after-tax basis.

This *plain vanilla* interest rate risk strategy is prudent from a risk management perspective and is essentially a *no cost* hedge for either asset- or liability-sensitive banks. However, given the ongoing difficulties with hedge accounting under SFAS 133, even the largest of financial institutions are rethinking their interest rate risk management practices. For this reason, banks contemplating even this vanilla hedge strategy should contact their accounting advisors.

**Wholesale Leverage Analysis.** A common tactic employed by banks to grow earnings and/or manage interest rate risk is wholesale leverage, or the *carry trade*. Unlike the swaps analysis, this tactic uses the balance sheet and should be assigned capital in a full-blown analysis (we have ignored the capital assignment herein). A simple example is borrowing at three-month LIBOR and investing longer, like with 15-year MBS. Currently, three-month LIBOR is around 5.5 percent and a par-priced 15-year mortgage-backed security (MBS) (with five-year duration) yields around 6 percent. Most financial institutions, whether asset- or liability-sensitive, are hesitant to undertake such a mismatch for a current spread of only 0.50 percent, or 0.31 percent after tax. As a reminder, in 2003 this transaction provided a spread of around 3.20 percent, or about 1.98 percent after-tax, relatively high from an historical perspective.

Of course, when short rates decline faster than long rates, this transaction becomes more appealing. In addition, our asset-sensitive bank can further benefit by buying discount MBS. As rates decline, prepayments typically speed up, accelerating discount accretion. In our *base case*, intermediate and longer rates are stable, so there is no prepayment increase due to the refinancing incentive. As short rates decrease, there is an incentive to refinance into *teaser* ARM products, so there should be some increase in prepayments.

Assume that the asset-sensitive bank has purchased 5.5 percent, 15-year MBS (with a six-year duration) at a discount price of 97 to yield 6 percent (the price and durations are oversimplified examples to make the math easier to follow). As Fed Funds drops to 4 percent and three-month LIBOR drops to 4.25 percent, our leverage spread widens to 1.75 percent, or 1.09 percent after tax, serving as a partial income hedge for the asset-sensitive bank. In addition, prepayments should increase somewhat,

lessening the effective term for accreting the discount, so it is not unrealistic for leverage spreads to widen an additional 0.25 percent to 2 percent, or 1.24 percent after tax.

Of course, should short rates continue to increase past 6 percent, this short-funded leverage will likely become *upside down* and cost the bank near-term profits. No matter how well intentioned this strategy is from an interest rate risk perspective, both regulators and the board of directors are likely to look askance at such a result.

In our *base case* 4 percent Fed Funds scenario, the liability-sensitive bank is well positioned to profit from a steepening of the yield curve. Leveraging now with short-funded MBS is like doubling down its interest rate *bet*, so we would not advise this tactic for liability-sensitive banks. As noted above, should rates increase, this tactic is quite unfavorable for a liability-sensitive bank.

**BOLI Analysis.** BOLI is available in many flavors, ranging from the relatively simple General Account product that is partially variable, to the so-called Hybrid Account that is similar to many bank investment portfolios, to the complex Separate Account based on total return bond funds. For this example, we will use a generic BOLI example, where the BOLI yield is 25 percent sensitive to interest rate changes. Both asset- and liability-sensitive banks are assumed to purchase the same asset, but use different funding strategies, commensurate with their long-term structural interest rate sensitivity. As with the MBS tactic, the BOLI transaction uses the balance sheet and should be assigned and/or costed with capital.

Our asset-sensitive bank will purchase BOLI at 5.5 percent and fund it with a 3-month LIBOR deposit at 5.5 percent. The net spread is 0 percent, but the bank benefits from the tax-advantaged nature of BOLI and receives a tax benefit of 2.09 percent, resulting in an after-tax ROA of the same 2.09 percent. In the current market environment, from an income perspective, this tactic is preferred to either the *no cost/income* swap or the low spread MBS leverage. In 2003, this transaction provided a spread and after-tax ROA of around 3.88 percent using our tax assumption as above.

If short rates decline as in our *base case* scenario, variable loan yields in the asset-sensitive bank will decrease. Yields for the BOLI transaction spread will increase, but will be slightly mitigated by the partial sensitivity of the assumed BOLI asset. A spread and after-tax ROA of around 3.02 percent is estimated.

Our liability-sensitive bank will purchase BOLI at 5.5 percent and fund it with a five-year deposit at 5.5 percent. The net spread is 0 percent, but the bank benefits from the tax-advantaged nature of BOLI and receives a tax benefit, spread and ROA of 2.09 percent. In this example, the

funding is fixed and intermediate rates do not change, so the incremental ROA remains above 2 percent. As a reminder, in 2003 this transaction provided a spread and ROA of around 2.64 percent, using our tax assumption as above.

**Conclusion.** Banks are tasked with simultaneously delivering earnings and managing interest rate risks. Based on the current level of rates, interest swaps are close to *free* with relatively little cost (or benefit). This may be a good time for bankers to review their prospective rate risk based on a steeper curve, with lower short rates, and contemplate hedging the prospective interest rate risk.

In the current rate environment, MBS leverages appear to have an unfavorable risk/return tradeoff. However, asset-sensitive banks should begin reviewing this transaction on an opportunistic basis, especially using discount priced assets.

A well-structured BOLI transaction, viewed as an alternative investment, can enhance current and future income, providing incremental ROAs from 2 to 3 percent, as well as providing interest rate risk management benefits without FAS 133 considerations.

FRED POORMAN, JR., CFA  
*The ALM Network*

---