Protect YOUR Net Interest Margin

A Guide to Prudent Interest Rate Risk Practices

written by
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ICBA Securities
At some level, net interest margins are the residue of forces that are more macro, and are very difficult to control. Competition, traditional business expectations, and general health of the local economy can all dictate a bank’s “third line” of the income statement. However, in the past decade, a number of tools and products have been made available to the community banking industry that can help maintain, or even improve, net interest margins.

And while guessing about the future paths of interest rates will remain a dicey proposition, it is true that rates also go thru cycles, and can somewhat be predicted. These tools and strategies can be made even more effective if employed during a rate peak or a trough. It is not wildly presumptive to suggest rates may be on the rise, if the beginning point is a 50-year low for Fed Funds. The FDIC has also weighed in on the issue, with recent supervisory guidance on asset/liability management.

This special pull-out guide will review what the market tells us about near-term expectations, and then compare currently available securities. It will then discuss some tools and techniques, available to any community bank portfolio manager, to protect not just the portfolio, but the entire balance sheet, against interest rate shocks.

Market Fundamentals (Reprised)

Yield Curve Shape
The vagaries of the slope of the Treasury yield curve, which bankers know can be a steep uphill climb or a thrilling downhill ski run for net interest margins, are usually correct when predicting future rates, particularly on the short end of the curve. Where the predictive qualities begin to falter is in the timing of future rates. To illustrate, remember that the curve’s relative flatness in 2006-2007, which predicted falling rates, finally became prophetic in 2008-2009.

The last month of 2009 saw an interesting phenomenon (see Table 1). Between December 1 and December 31, the two-year Treasury note’s yield jumped from 0.68 to 1.15, while the ten-year’s rose from 3.28 to 3.85. So, while the “two-to-ten” slope stayed around a 260-basis point gap, all yields improved by about 60 basis points, in just 30 days. Such parallel shifts are highly unusual.

Also, yield spreads on all products that community banks purchase stayed roughly unchanged, when often they shrink during a
rise in Treasury yields. Therefore, inasmuch as a normal two-to-ten difference is about 120 basis points, we can conclude that the U.S. bond market was still in a steep slope posture at the beginning of 2010.

Consequently the curve is providing an opportunity to profit from extension swaps, leverages, and bonds with call protection. The last item may seem illogical, if steep curves predict higher rates, but as long as there is some positive slope to the curve the market value of these securities will remain relatively stable even if rates rise.

For all of 2009, the curve steepened by over 100 basis points. There were several factors at play here, some of which were highly unusual. A tool that was not used in 2009 was a cut in the Fed Funds rate. It was set at 0.25 percent in December 2008, and really had no more room to drop. A technique that was used liberally was the massive amount of “quantitative easing.” This included the smorgasbord of programs from Fed, Treasury, and even the FDIC aimed at improving liquidity, and therefore prices, of many of the assets on banks’ ledgers.

What does this mean for the portfolios for 2010 and beyond?

Time for Metal Detectors

Market analysts are divided about what point in the future are truly, actually, durably higher rates going to take hold. Investors in intermediate-term and longer bonds, whether we’re talking about mortgage-backed securities, agencies, corporates or munis, are voting with their pocketbooks that it will be a while till rates rise. Of course, their vote may be influenced by the substantially higher yields compared to shorter maturity bonds.

Fed Funds Futures are betting that Fed Funds will be in the 1.00% range in early 2011. The Implied Forward Yield Curve is suggesting the 1-year T-bill will yield about 1.85 then (versus 0.40% now). All we’re getting out of the Fed is “extended period of accommodation.” Inflation for the moment is still trending lower. In short, there are lots of conflicting signals.

When in doubt, perhaps a middle ground is the answer. The good news is that, when managing an investment portfolio, there are a number of ways to adopt a middle ground. If executed properly, the balanced-risk stance should ultimately allow the overall income statement to maintain some semblance of stability, even if rates behave erratically.

Further, many bankers that we know have been made to adopt certain investment policies, either by their regulators or boards of directors, in the wake of realized losses or impairment writedowns on certain securities (e.g., auction rate munis, TRUPS CDOs, and agency preferred stock). These new policies could limit the amount of price risk allowable in the bond portfolio, or could establish maximum weights for certain sectors such as munis or derivatives.

Examples of middle ground strategies could be as simple as establishing a barbell structure, limiting the duration of the portfolio in a stressed (i.e., rising rate) scenario, or simply buying a greater quantity of securities that should perform well in such environments. The following section will describe several of these.

Inflation-Resistant Securities

Premium Callables

While some bankers still have an innate resistance to paying more than par for anything, in fact an above-market interest rate on a security can help ensure either that a) it is a short duration instrument, or b) its yield will increase if general interest rates rise (see Table 2).

This example has a maturity date in about six years, and one only call option in about a year. It is highly likely that it will be called then, producing a 1 percent yield in an environment when money market yields are well under 50 bps. If it

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<th>Settlement Date</th>
<th>Yield to Maturity</th>
<th>Price</th>
<th>Treasury Curve</th>
<th>Treasury Spread</th>
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</table>

Source: Bloomberg
points (see Table 3). They are available at prices below 102.00, so there is little premium risk. Your yield for the next three years will be around 2.65 percent, and thereafter should stay on market. Recall that GNMA ARMs have periodic reset caps of 1 percent, and life caps of 5 percent over the initial coupon.

Tax-Free Securities
While we could fill volumes on new municipal securities rules and products, within the context of this article the traditional tax-free instrument warrants comment. It may seem unlikely that tax-frees would appear in a list of bonds that perform well in a rising rate environment, since they tend to have longer stated maturities.

There are two reasons they outperform taxables of similar maturities in terms of price volatility. One, the muni curve is steeper than any other, so the benefits of rolling down the yield curve are greater. Two, the fact that tax-free yields move only two-thirds as much, given a change in rates, means their price moves only two-thirds as much as taxables, the fact that tax-free yields move their effect on each other is a key to maintaining performance regardless of which way interest rates move. Bankers and regulators are increasingly attentive to these risks, and to the benefits of effectively managing them. In late 2009, the FDIC released the winter “Supervisory Insights”, including a section titled “Nowhere to Go But Up: Managing Interest Rate Risk in a Low-Rate Environment”. The regulators also released a new interagency guidance applicable to all financial institutions addressing the need for bankers to embrace the

Interest Rate Risk Tools

Effective ALCO Management
Of course any preparation for rising interest rates will have an effect on bank performance in current interest rates. While it is prudent to anticipate changes in rates and yield curve structure, and to pro-actively transform the investment portfolio and the balance sheet to perform well as rates rise, bankers must answer the question, “how far do I go?” Quantifying the exposure to or benefit from changes in interest rates is the role of the asset/liability committee, or “ALCO”. Various risks to banking are inter-related. Risk to earnings is linked to liquidity, liquidity is linked to value at risk, value at risk is linked to capital leverage, and capital leverage is linked to earnings. Proper evaluation of the risks and their effect on each other is a key to maintaining performance regardless of which way interest rates move.

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<table>
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<td><strong>ARM</strong></td>
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<td><strong>TBA</strong></td>
<td><strong>GAAT</strong></td>
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| **Price Volatility Comparison** |
| Table 4 |

<p>| <strong>Price Volatility Comparison</strong> |</p>
<table>
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<tr>
<th>Taxable Municipal Bond</th>
<th>Down 100</th>
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<th>Up 100</th>
<th>Up 200</th>
<th>Up 300</th>
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<tr>
<td>12/15/2016 Maturity, 3.75% Coupon</td>
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<td>4.30%</td>
<td>5.30%</td>
<td>6.30%</td>
<td>7.30%</td>
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<tr>
<td>Taxable Yield</td>
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<td>2.76%</td>
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<td>2.76%</td>
<td>2.76%</td>
<td>2.76%</td>
<td>2.76%</td>
</tr>
</tbody>
</table>

| Tax-Free Municipal Bond |
| --- | --- | --- | --- | --- | --- |
| 12/15/2016 Maturity, 3.50% Coupon | 2.15% | 2.80% | 3.45% | 4.32% | 5.19% |
| Tax-Free Yield | 2.15% | 2.80% | 3.45% | 4.32% | 5.19% |
| Tax-Equivalent Yield | 3.30% | 4.30% | 5.30% | 6.30% | 7.30% |
| Price | 108.67 | 104.41 | 100.33 | 95.16 | 90.26 |
| % Price Change | 2.15% | 2.80% | 3.45% | 4.32% | 5.19% |

*Sample CUSIPs: 351592GF1, 947656EM2. Using Bloomberg price calculations.*
ALCO process to protect margins and performance through all rate cycles.

Although interest rate risk is inherent to banking, the goal of the ALCO should be the accurate measurement and prudent management of the risk. To achieve this goal and prepare for rising rates, be sure these aspects are addressed.

Avoid Rose Colored Glasses
One of the most common shortcomings in an IRR model is the use of “overly optimistic assumptions”. Historically, the primary hedge for IRR for community banks has been a stable retail deposit base. These deposits gave the banker the ability to control his funding cost, and stabilize margins. Even though most community bankers have enjoyed an influx in deposits over the last few months, it is expected that competition from non-bank entities will drive up the cost of maintaining these deposits as rates rise, and making it difficult to match the funding terms of the balance sheet using these sources.

This increasingly volatile funding base, coupled with an increase in longer tenor real estate loans, and a reduction in adjustable C&D loans may set the stage for potential earnings deterioration if interest rates rise.

To achieve meaningful results, assumptions for processing income simulations should be well understood by management, and should be continually evaluated for reasonableness. To protect yourself, be sure you understand both the sensitivity assumptions of your deposit base, prepayment assumptions on your loan portfolio, and the effects of non-parallel shifts in interest rates may have on your margin.

Have Enough Horsepower
Regulators have historically been very clear. The intricacy of your measurement system should be consistent with the size, complexity and business model of your bank. While it is not required that community banks run endless scenarios, or use high-priced software, management is charged with ensuring the bank uses appropriate measurement systems.

The bank must also ensure that periodic validation tests be performed by a person independent from the risk measurement process. Lack of adequate independent review is cited as a “common IRR management weakness”. Many bankers have historically relied on internal gap models, or utilized vendor supplied reports that transform balance sheet gap models into earnings at risk tools. Of particular interest is the clear statement that while gap analysis can help management visualize the time frames when re-pricing risk may occur, they “should not be the primary analytical tool for assessing IRR.”

This pronouncement is consistent with recent trends of field examiners requiring bankers to increase the “horsepower” of their measurement systems, and utilize simulation models regardless of balance sheet complexity. Simulation models calculate the effects of interest rate changes on the bank’s performance over time, and have become the standard for quantifying risk.

Be Pro-Active
The modeling process should stress the earnings, capital and value of the balance sheet under a variety of scenarios. No matter how many scenarios we run, we will likely never accurately forecast exact earnings. The goal of the stress testing is to identify risk, not necessarily to estimate the most likely rate scenario. While regulatory agencies have always recommended using various model structures, regulators have recently established minimum standards for ALL banks. These standards include:

- +/- 300 bps scenarios, with 400 bps recommended
- Instantaneous shocks
- Non-parallel shifts
- A “no growth” or static balance sheet forecast

Depending on the level of risk in the balance sheet, bankers would do well to evaluate more than the minimums. For your bank, your risk profile will influence what type(s) of scenarios should be processed to adequately measure exposures.

Identification of the risk is not enough; we must be pro-active. Bankers are encouraged to actively manage the risk to earnings and capital from possible changes in interest rates. While all exposures may not require action, for exposures that exceed your risk limits, risk mitigation strategies are imperative.

For community banks, the most common risk mitigation strategies rely on balance sheet alterations, consisting of adding or altering assets and liabilities structures that counter the current risk. Such strategies are generally executed using the wholesale components of the bal-
ance sheet, such as term borrowings and investment securities, where the banker can choose his terms.

In addition to balance sheet alteration strategies to mitigate risk, many bankers are choosing to go off balance sheet. For these bankers, interest rate swaps, caps and floors are effective instruments to reduce the exposures. In the December, 2009 Supervisory Insight, the FDIC states that “derivatives can reduce an institution’s IRR if used correctly”, and can be a very effective tool for the community bank.

It is important to remember that the IRR management process is an assumption driven endeavor that will vary greatly from bank to bank. The goal of the ALCO is to establish the risk profile of the bank due to changes in interest rates, and manage that risk. As bankers prepare for rising rates, we would encourage a thorough examination of your risk management process, including the tools, assumptions, controls utilized.

Interest Rate Products
The Federal banking regulators recently published guidance regarding the risks banks face from a rising interest rate environment. These publications highlight current balance sheet trends, the subsequent exposures these trends have engendered and ways to prudently manage them.

As emphasized in the guidance, the threats posed by rising interest rates could be significant for banks, especially given the historically low rate environment and a capital base that is already weakened by loan losses. To compound these issues, many institutions are inadequately modeling and stress testing their balance sheet. As we move forward into 2010, it appears that interest rate risk will likely be in the crosshairs of regulatory scrutiny.

Recent Trends
Recent Call Report data suggest that banks are assuming increased exposure to rising rates. This is caused by myriad different factors, some related to earnings pressures and others to faulty risk modeling. The risk factors include:

• **Asset Extension:** It can be alluring to borrow short and invest long in order to capture the historically wide margin. Longer term asset concentrations are rapidly increasing, and at a growing number of institutions they comprise more than 50% of all assets.

• **Increased Usage of Wholesale Funding:** Less stable and typically cheaper wholesale funding sources may reprice rapidly in a rising rate environment. In a changing market, core depositors may transfer monies elsewhere while the cost of wholesale funding increases.

• **Incomplete Scenario Analysis:** Banks currently possess unprecedented pricing leverage with their customers, which will likely disappear as the economy improves. With this in mind many institutions are incompletely or inaccurately modeling their balance sheets. This can include underestimating exposures to interest rate floors in floating rate loans, overestimating loan renewal yields, or overestimating deposit growth and retention.

• **Severe Enough Stress Testing:** Many institutions are not using a stress that is representative of a severe movement in interest rates. It is interesting to note that the FDIC mentions that institutions with the strongest IRR identification scenarios use a shock of +400 basis points or more in their interest rate change scenarios.

Using Derivatives to Hedge
As suggested in the above referenced publications, regulators are becoming more and more comfortable with the use of derivatives to manage risk, particularly at the community bank level. Current literature encourages the use of hedging products to mitigate risks, so long as they are implemented in the correct manner. Outlined below are some meaningful strategies that many community banks are using to hedge their exposure to rising rates.

**Pay Fixed Interest Rate Swaps**
Consider extending the duration of your liabilities with a “pay fixed” interest rate swap. This hedging product can convert your liabilities from floating to fixed for a specified period of time. Pay fixed swaps
can be executed on indexed deposit accounts, trust preferred debt, wholesale funding, and short term CDs. This is a great way to protect against rising funding costs. See Table 5.

**Commercial Loan Hedging**

Consider offering your commercial borrowers pay fixed interest rate swaps in lieu of traditional fixed rate loans. Many banks are limiting fixed rate loans to a term of three years or less, despite borrower demand for longer term structures. Commercial loan hedging is a fantastic way to offer borrowers long term fixed rate financing without the associated interest rate risk, and also to generate fee income. Use this tool to profitably retain existing customers and help attract new ones without incurring additional interest rate risk.

**Interest Rate Cap Corridor**

Floors in the loan portfolio, while maintaining loan yields and increasing profitability, also create interest rate risk when the FOMC begins raising short term interest rates. Consider executing a cap corridor to hedge this exposure; as floating rates rise, the corridor will provide incremental interest income until floating rates exceeded the floor strike. See Table 6.

**Interest Rate Caps**

For institutions that desire a form of insurance against rising interest rates, consider the purchase of an interest rate cap. Caps provide a “ceiling” on an index such as 3-month LIBOR. This hedging tool is also beneficial if hedge accounting cannot be achieved, as your maximum cost over the life of the transaction is known at inception (see Table 7).

**In Summary**

It is clear regulators will likely be more and more focused on ensuring that banks are prepared for the next interest rate cycle. ICBA Securities has a wealth of services that can prepare your bank for its next exam, and for a seamless transition into a new phase for interest rates.

For a fundamental overview of the bank’s balance sheet, and the role the investment portfolio plays in it, a *Performance Profile* is offered on a complimentary basis for any ICBA member. ICBA Securities’ proprietary IRR simulation model, *Risk Manager*, will provide the level of documentation required by recent FDIC guidance. And ICBA Securities’ hedging provider, Vining Sparks Interest Rate Products, LLC can help you implement a best practices process for using interest rate products to protect your net interest margin.

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