Unique Environments Require Asking Different Questions

Things to Consider When Evaluating Static Simulations

By c. myers corporation

For years, static balance sheet simulations have been widely accepted in quantifying and managing risks to earnings and net worth as rates change. This method is often viewed as a conservative approach.

The FFIEC's Advisory on Interest Rate Risk Management states:

> *Static simulation models are based on current exposures and assume a constant balance sheet with no new growth. In contrast, dynamic simulation models rely on detailed assumptions regarding changes in existing business lines, new business, and changes in management and customer behavior.*

Constant balance sheet modeling assumes that the balance sheet mix will never change regardless of external forces.

In other words, as loans, such as auto and mortgage loans, are running off they will simply be replaced by auto and mortgage loans at the then-current rate.

We have found that even when assuming no new growth, the simplified assumption of a static balance sheet can result in misleading decision information, which could provide management, board and regulatory authorities with a false sense of security.

Why Results Could Be Misleading

One of the reasons static simulation modeling can be misleading is that it ignores rate sensitivity on deposits. This can be especially dangerous because the distribution of deposits and deposit trends in the credit union industry changed significantly with the flight to safety and the prolonged economic downturn (see Exhibit A).

This simplifying assumption can actually hide risk—which produces more optimistic results.

The simplifying assumption of holding loans constant as a percent of assets also needs to be evaluated.

Is it prudent to assume in a risk simulation that, if mortgage rates go up, demand for mortgage loans will be sufficient to keep balances constant?

It may not be prudent—as the reasons for rates increasing can have a dramatic impact on loan volumes:

- If rates are going up because the economy is good, then assuming loan volumes remain constant could be a good starting point

- Conversely, if rates are going up for reasons that are not driven by economic growth, then the simplifying assumption of holding loans constant can provide a false sense of security

The above issues are magnified today if the traditional approach of a +300 basis point (bp) parallel shift in the yield curve is used. The yield curve is unusually steep at about 344 bps[1] (using 3-month rates as a proxy for short-term rates and 10-year rates as a proxy for long-term rates). Preserving this historically steep and favorable yield curve in a risk simulation provides a continued advantage in the pricing spread between loans and deposits. Furthermore, The Advisory on Interest Rate Risk Management suggests that static simulations provide a ***complete and***

[1] Source: Bloomberg.com, March 8, 2011

comparative description of the institution's IRR exposure [emphasis added]**.**

Based on the vast number of static balance sheet simulations we have performed, as well as testing the impact of these simplifying assumptions, we caution the use of static balance sheet simulations as described above—especially assuming today's favorable yield curve is sustained.

If Not Static, Then What?

We recommend a multi-step approach to help decision-makers quantify, understand, compare and manage risks. Keep in mind the objectives when quantifying risks are different than those of budgeting and forecasting. The following is a **subset** of our recommended risk management process.

Initially, isolate the risks to earnings and net worth embedded in the credit union's existing commitments using an income simulation approach. Do not intermingle assumptions for new business to replace runoff in this initial step, as a static simulation would do. Isolating the risks from existing commitments is an "NEV-like approach." However, the focus here is on risks to earnings and net worth from existing commitments factoring in all components of ROA.

This methodology also incorporates changes in depositor behavior, which are ignored by static balance sheet modeling. Credit unions have dropped regular share rates to nearly 0 and are still seeing growth due to relatively bleak alternatives in this environment. If rates go up, will consumers really keep all of their money in regular share accounts?

After risks from existing commitments are isolated and understood, the "what-ifing" of new business begins. While this step may be viewed as dynamic modeling because balances are not held constant, it is dynamic modeling using unfavorable assumptions. People often assume dynamic modeling always takes an optimistic view, which does not need to be the case.

The "what-ifs" should start with unfavorable conditions, such as: ***What if rates go up and loan volumes decline?*** One of the challenges to earnings is that loan-to-asset ratios have been declining. In many states, loans have dropped by more than 5% of assets in a span of just 9 months. Ignoring the risk of a continued decline may be optimistic and inconsistent with a prudent risk management process.

Going back to pre-boom levels could be a good starting point for determining how much of a decline should be tested for loan balances that have experienced growth. Using industry averages for mortgages to illustrate, in 2004, mortgages represented about 20% of assets for the credit union industry—hitting a peak of 26% in 2008 (see Exhibit B).

The concept of unfavorable conditions can be applied to each credit union's unique situation. An unfavorable condition that should almost always be tested is: ***What if the yield curve flattens?***

For more effective analysis, each major unfavorable condition should be modeled individually to quantify and understand the magnitude of the financial impact. Then, combinations of unfavorable conditions can be simulated to quantify and understand the financial impact if a combination of unfavorable conditions were to occur simultaneously.

Once the financial risks of unfavorable conditions are quantified and understood, they should be evaluated in light of risk tolerances. If the risks are acceptable, no immediate action is required. If the risks are not acceptable, then management can roll up their sleeves and begin identifying and testing potential steps to be taken to offset the risk.

If You Only Remember 1 Thing…

As you are evaluating risks to earnings and net worth, remember **one thing** from this article:

> Static balance sheet modeling may be easy to do and easy to analyze—but in this environment—it can cause decision-makers and regulators to be misled regarding a credit union's risks to earnings and net worth.

We would be happy to answer any questions you might have. Please feel free to contact one of our principals at 800.238.7475 or on the Web at www.cmyers.com/contact/.

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About c. myers

Since the volatile 1980s, c. myers' principals have been providing sound decision information to executives in the financial services industry.

Since 1991, hundreds of credit unions, including 25% of those over $100 million in assets and 50% over $1 billion, have found value in our proven and practical approach to addressing emerging and complex business issues.