

## Understanding Interest Rate Risk is Not a Static Issue

By c. myers corporation

It is clear that **effective** interest rate risk management (IRR) is at the top of NCUA's priority list. One of the key questions is, *what is effective?*

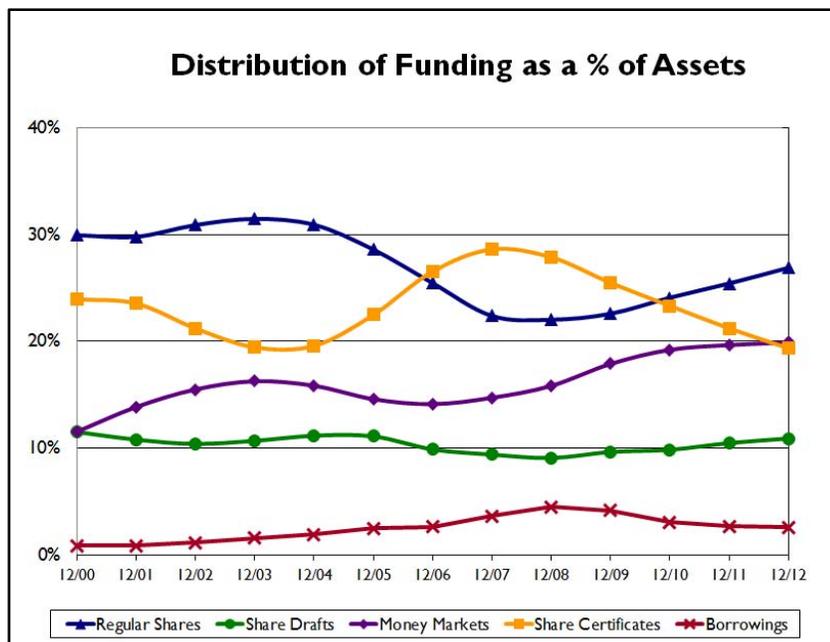
Historically, risks to net interest income (NII) and net income (NI) have been quantified by instantaneously shocking the balance sheet, typically +/-300 basis points (bps), and often assuming a static balance sheet. In other words, as rates change the balance sheet mix is assumed to stay **exactly the same**. For example, a static balance sheet analysis assumes that, as rates increase, loan runoff will be replaced dollar-for-dollar and consumers will not seek higher-yielding deposit accounts.

It is pretty safe to assume that the results of a static balance sheet simulation will not appropriately represent risks to earnings and net worth in a rising rate environment.

This strong statement is based on our years of experience in simulating this ancillary view of risks to earnings and net worth. It is our belief that it is imprudent to assume that, as market interest rates increase, depositors **will not** modify their behavior when it comes to their deposit accounts.

These last few years have seen a flight-to-safety bringing growth to low-cost deposits traditionally considered "core" to credit unions. CD balances for most credit unions have declined and regular shares have increased as members have had no real financial incentive to lock up their funds in CDs.

Is it reasonable to assume that funds will remain in these low-cost deposits if interest rates increase and members can gain materially more yield in CDs? The graph to the right provides a reminder of what credit unions experienced the last time rates increased from an unusually low rate environment accompanied by a flight-to-safety.



From early 2001 to mid-2003 short-term rates fell from about 6% to about 1%, a level not seen since the 1950s. In mid-2004, the Fed began increasing rates. Regular shares at the end of 2004 represented about 31% of the average credit union's balance sheet, while CDs made up about 20%. Over the next few years, as interest rates increased about 400 bps, regular shares declined to about 22% of assets and CDs grew to become the largest component of credit union funding for the first time, reaching nearly 30% of assets in 2007.

The question is, with such glaring flaws, why is static balance sheet analysis so prevalent? Three main reasons:

1. It allows for comparability
2. It's easy – assumptions on new business are predetermined
3. It's been around for a long time

An alternative methodology to the static balance sheet is a dynamic simulation. Even as regular shares were experiencing growth in 2010, FFIEC's Advisory on Interest Rate Risk Management stated that "dynamic simulation is highly dependent on key variables and assumptions that are extremely difficult to project with accuracy over an extended period" and that "model assumptions can potentially hide certain key underlying risk exposures." Think of your credit union's budget or other forecasts as a dynamic simulation. A future balance sheet is constructed which may or may not come true.

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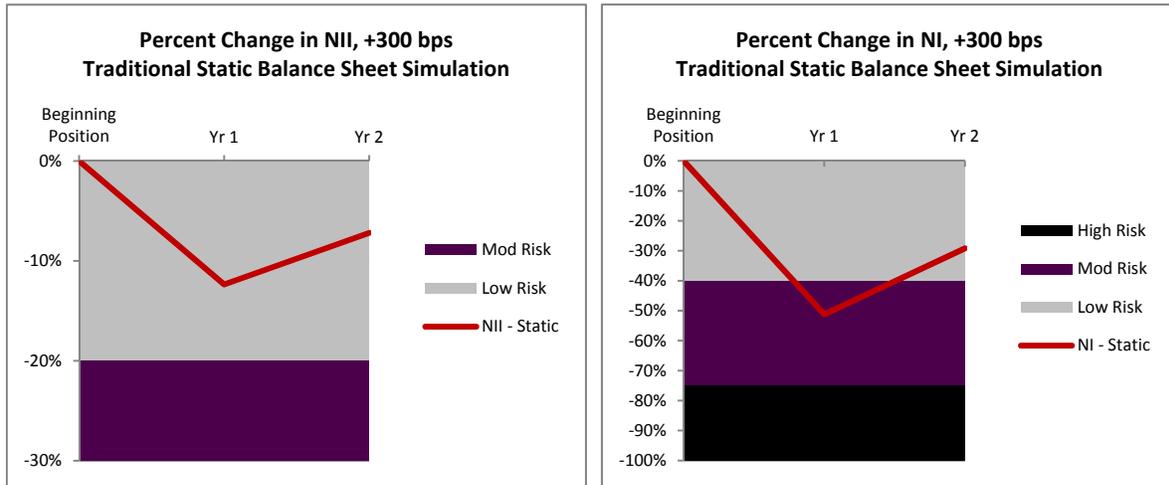
Given these concerns about dynamic simulations, the Advisory says "institutions should also run static simulations to provide ALCO or senior management a **complete and comparative description** of the institution's IRR exposure [emphasis ours]."

Static simulations *do* provide a simpler alternative than dynamic simulations because they reduce the number of guesses that must be made by assuming the balance sheet mix never changes. They also do not incorporate growth projections that may not come true. Assumptions on new business can cover up risks a credit union already has embedded in its current financial structure. If this new business doesn't come true, the board, management and regulators could be blind-sided.

Static balance sheet simulations are also more comparative than some other risk quantification methodologies because every institution has the same assumption – their balance sheet structure will never change. For example, all depositors will be happy with their financial institution regardless of rate.

However, static simulations **do not provide a complete description** of the institution's IRR exposure. Remember, by design and as noted above, in a static balance sheet simulation *depositors* never act in their best interest as rates change. This simplifying assumption is extremely dangerous, especially if static balance sheet simulations are used as a basis for establishing and testing A/LM policy limits.

To illustrate the point consider Credit Union A. Credit Union A runs a static balance sheet simulation showing the change to NII and NI assuming an instantaneous and parallel change in rates. To provide management and board with a longer-term view, and to be more in line with recommendations in the Advisory, Credit Union A stretches its static simulation to two years, instead of the one year credit unions have traditionally modeled. The results are summarized in the graphs below.



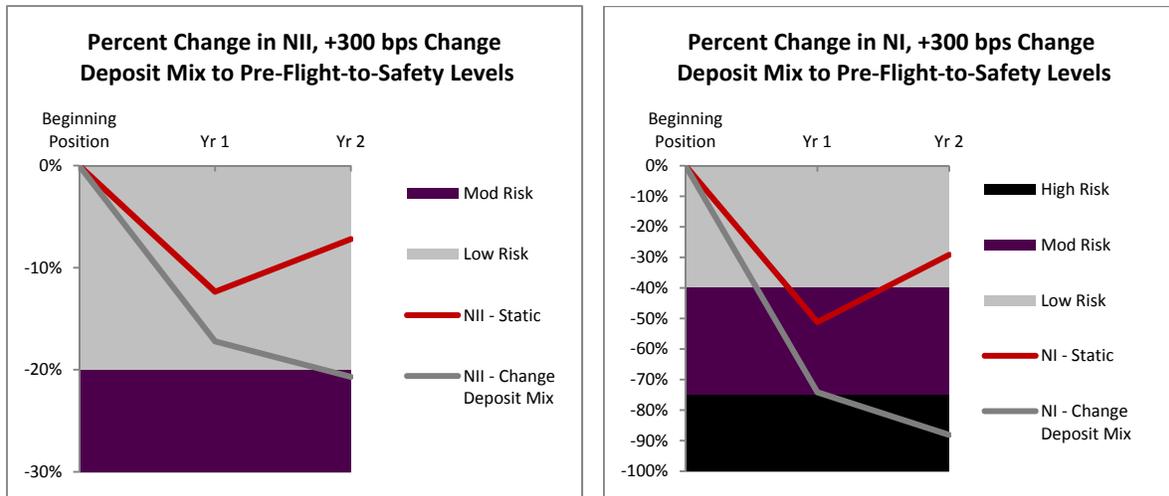
The results show that, in a +300 bp shock, Credit Union A's NII will decline approximately 12% and its NI will decline approximately 51% in one year. Based on the scale previously published by the NCUA<sup>1</sup>, the decline in NII represents a low-risk classification, while the decline in NI would be considered moderate risk. However, taking the simulation out two years shows that both NII and NI begin to rebound. Compared to the beginning position, in year two, NII is down just 7% and NI is down about 29%, both of which historically would have been considered low risk. Based on these results, the credit union prepares the board for one year of pain if rates increase, but tells them after that things will begin to get better – very soon.

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By assuming that everything stays the same, static simulations completely miss the huge risk posed to credit unions that deposits may shift to higher-cost deposits when rates increase – or that they may leave the credit union for potentially higher yields elsewhere. The combination of shifting funds plus having to potentially pay more than expected to retain/attract deposits can materially increase the cost of funds, putting significant downward pressure on earnings. **No risk analysis should ignore this.**

<sup>1</sup> NCUA's IRR Questionnaire prior to May 2012 included tables categorizing NII and NI as low, moderate or high risk.

Recognizing this potential, Credit Union A broke the rules of traditional static balance sheet analysis and ran a scenario simulating a shift of funds from regular shares and money markets into CDs, similar to what it experienced during the 2004 to 2007 timeframe. As shown below, these results paint a very different picture of the credit union's risk exposure.



When the reasonable assumption that consumers may move their funds to higher-cost deposits if rates increase is incorporated into the simulation, NII declines approximately 17% in year one, moving the credit union close to what has been typically viewed as moderate risk. Net income declines approximately 74% in one year, which could be considered on the verge of high risk.

In year two, NII has dropped to about 21% below its beginning point, while NI has dipped into what has been considered high risk territory, with a decline of approximately 88%.

*Notice that in year two the beginning of the rebound to NII and NI modeled in the traditional static simulation is not only gone, but potential performance continues to diminish. The continued pressure on earnings caused by a shift in deposit mix is evident.*

In this scenario, which (at least in terms of *depositor* behavior) is clearly more realistic, a different message about the credit union's level of risk, the length of the potential problem and what to expect if rates increase is conveyed to the management and board.

C. Myers has performed a vast number of static balance sheet simulations, as well as tested the impact of simplifying assumptions, just as was done for Credit Union A. Based on our experience, we caution the use of static balance sheet simulations. If your credit union is going to run static balance sheet simulations as part of its risk management process, minimally, the issue of the deposit mix changing has to be tested.

Static balance sheet modeling may be easy to do and easy to analyze; however, easy is not the objective of an effective risk management process. If your credit union establishes policy limits based on static balance sheet simulations and therefore manages to those limits, they then become a key component of your risk management process. As noted above, this could unintentionally mislead decision-makers and regulators regarding threats to NI and net worth.

## If Not Static, Then What?

Financial structures are getting more complex. Therefore, **effectively** quantifying risks to earnings and net worth is becoming more complex. We recommend a multi-step approach to help decision-makers quantify, understand, compare and manage risks. Keep in mind that the objectives when quantifying risks are different than those of budgeting and forecasting. The following is a high-level summary of our recommended risk management process.

**Step One – Understand the cards you are holding.** Quantify and understand the risks to earnings and net worth embedded in the credit union's existing commitments. Do not intermingle assumptions for new business, whether static or dynamic. The existing commitments methodology incorporates changes in depositor behavior that static balance sheet modeling ignores. The simulation should go beyond a +/- 300 bp rate change and, ideally, the yield curve should be twisted. At a minimum, evaluate and understand risks for two years. To gain a more comprehensive view, evaluate and understand exposures over the next four to five years from existing commitments.

**Step Two – Understand the cards you need to draw.** Quantify and understand earnings required from new business to offset risks from existing commitments, and to meet net worth and asset size goals. This step helps decision-makers gain an understanding of how much pressure their decisions today will put on their ability to take advantage of future opportunities. Additionally, this view provides decision-makers with critical information regarding how much time it may take to overcome risk exposures from existing commitments.

**Step Three – Agree on your appetite for risk.** Establish and monitor policy triggers and limits. Each management member and board member has a unique appetite for risk. It is important to reach consensus on risk tolerance and manage within that tolerance.

**Step Four – Recognize that change is a certainty.** Through a proactive "what-if" process, test changes to risks to earnings and net worth from decisions under consideration, such as loan promotions, new business lines, changes in investment strategy, investments in delivery channels, etc.

We recognize that things are getting more complex and time consuming. 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 [www.cmyers.com/contact/](http://www.cmyers.com/contact/).

## About c. myers

Since 1991, we have partnered exclusively with credit unions. Our philosophy is based on helping our clients ask the right, and often tough, questions in order to create a solid foundation that links strategy and desired financial performance. We've worked with about 25% of the credit unions over \$100 million in assets and 50% over \$1 billion providing strategic planning, process improvement, A/LM, interest rate risk and budgeting services. 