**Mortgage Concentration Risk in a Small Depository Institution**

Northeastern State College Credit Union (NSC CU) emerged from the ashes of the Financial Crisis of 2008-2009 virtually unscathed, yet it still faced choppy waters ahead in the recession’s lingering aftermath. The long-established fixture of a shady Midwestern town, faced increasing competition from larger rivals, and further complications emerged from the Federal Reserve’s actions to stimulate a still languid economy. The Federal Reserve resolved to keep short-term interest-rates near zero, as it had during the past four years, for another 2 to 3 years in the future. Even long-term interest rates, such as mortgage rates, fell to the 3-4% range.

This affected NSC CU, as it recently experienced small decreases in its auto loan volume. With investments paying near zero rates, it had been making more mortgage loans, eventually exceeding its internal policy limit on the percentage of assets that could be in real estate. However, the long-term nature of real estate loans could have negative implications for future income when interest rates increase in the future. A committee at NSC CU was considering changing its policy to increase its real estate limit. John Tallon, an economics professor at NSC and a member of this committee, pondered the issue. Should NSC CU change this policy? What are the risks associated with it and if they did increase the limit, how much would be prudent?

**Northeastern State College Credit Union**

Northeastern State College Credit Union, a medium-sized credit union located in the Midwest, had just over $136 million in assets and about 18,000 members. Credit unions are non-profit cooperatives that serve their members with “banking” services, including savings, checking, and money market accounts; and certificates of deposit for savers; and auto, real estate and credit card loans for borrowers. Funds that they did not loan out or that were needed for liquidity were put in various investments (usually, short-term in maturity) such as overnight deposits at a corporate credit union, certificates of deposit from other depository institutions, and some mortgage-backed securities that were guaranteed by the US Government. However, the rates offered on these various investments were very low following the recession. Despite experiencing some modest growth, which increases asset size, NSC CU had maintained a healthy net-worth ratio (essentially a capital-to-asset ratio) of 9.1%.

**Interest Rate Risk**

The two major types of risks depository institutions face are credit and interest-rate risk. Credit risk occurs when loans default and are not paid back in full. Interest-risk occurs when changes in interest rates reduce profitability, as transmitted through asset/liability structure. Typically, depository institutions have longer-term assets and shorter-term liabilities. When interest rates increase, depository institutions need to increase interest rates on deposits to retain them; they can raise these rates quickly because deposits are very short-term. Likewise, loans made since an interest rate increase would also be made at the higher rates. However, loans tend to stay on balance sheets for some time since many have maturities of much longer than one year. Hence, when interest rates increase, profitability is typically squeezed for banks and credit unions.

A classic case of interest-rate risk occurred in the Savings and Loan industry in the 1980s. High inflation led to higher interest rates and a tight Federal Reserve monetary policy. Rates on the 3-month Treasury bill reached over 15% in 1981 (Mishkin, 2013, page 88). Hence, Savings and Loan institutions had to pay higher rates on their deposits, while they could not re-price their previously made mortgage loans. In fact, during 1982, the average rate paid on deposits by Savings and Loans was greater than the average rate received on their loans. By 1989, 1,066 out of 2,878 Savings and Loan institutions were unprofitable (White, 1991, page 18).

NSC CU created an asset-liability management committee (ALMC) in 1997 to monitor its assets and liabilities and to propose any needed interest rate and policy changes to the NSC CU board. Professor Tallon also served on the NSC CU Board of Directors as 1 of the 5 members on its ALMC. Part of NSC CU’s internal ALM (asset-liability management) policy limited total real estate loans to 35% of total assets to minimize the risk of holding too many longer-term real estate loans. But in the years after the financial crisis of 2008-09, weaker demand and increased competition from other financial institutions made auto loans harder to make. Simultaneously, investments were paying near-zero interest rates, and the Federal Reserve announced in Fall 2012 that it would keep short-term interest rates near zero until the unemployment rate fell to 6.5%, assuming low inflation. This was generally interpreted to mean that rates would stay this low for another 3 years.

In order to maintain profitability and a healthy capital-to-asset ratio, NSC CU made more mortgage loans and began bumping up against their 35% real estate loans-to-asset limit. They addressed the issue at their December 2012 ALMC meeting. Their total real estate-to-assets stood at 35.71% while this figure was 33.12% for their peer group of credit unions. Table 1 shows NSC CU’s loans by category, using the figures available at that ALMC meeting, as well as from the end of 2011. The last column shows the average duration of each type of loan. NSC CU’s total assets stood at $136,398,772.

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| **Table 1 . NSC CU loans and duration, 2011-2012** | | | |
| **Loan Type** | **NSC CU amount of loans, $,**  **November 2012** | **NSC CU amount of loans, $,**  **December 2011** | **NSC CU Average Duration (Years)**  **November 2012** |
| Credit Card | 1,091,578 | 0 | 3.07 |
| Unsecured Personal | 2,770,947 | 2,364,819 | 1.39 |
| Real Estate > 15 years | 7,465,028 | 2,128,844 | 8.11 |
| Real Estate ≤ 15 years | 36,104,738 | 27,601,756 | 4.53 |
| Variable rate HELOC | 5,318,820 | 5,699,009 | 3.10 |
| New Auto | 6,981,566 | 6,245,590 | 1.89 |
| Used Auto | 35,540,002 | 37,674,334 | 1.64 |
| Other Secured Loans | 11,239,124 | 9,018,962 | 2.94 |

Professor Tallon taught a method of analyzing interest rate risk called duration analysis in his classes, as described by Mishkin (2013, p. 234): the percentage change in the market value of the institution’s assets, is approximately equal to the – (percentage-point change in interest rates x duration in years).

**The Proposed ALM Policy Change**

The ALMC reached a consensus at the December 2012 meeting, recommending that the Board of Directors change NSC CU’s ALM policy with respect to real estate concentration. The ALMC proposed that the total real estate loan-to-asset limit be increased to 45% from 35%. They felt that it was crucial for NSC CU to keep making real estate loans in order to maintain profitability and a healthy capital ratio.

The average duration of these types of loans was a key in their deliberations. Since the home-equity-line-of-credit (HELOCS) loans had a variable rate set to increase when interest rates increased, these did not concern the ALMC.

The rest of the discussion centered on the average duration of the other loans. They noted that the average duration for real estate loans with a maturity ≤ 15 years was 4.53 years, less than the average maturity, because some loans will be paid off sooner as members make larger payments or sell the property. Although this was considerably longer than the average duration of 1.89 and 1.64 years for new and used auto loans, it did not seem very risky to the ALMC. They decided to propose a limit of 35% of total assets for real estate loans with a maturity of ≤ 15 years.

Most of the discussion centered on the limit for real estate loans with a > 15 year maturity, where the average duration was 8.11 years. The ALMC favored an 8% limit, except for Professor Tallon. He remembered watching the Savings and Loans crisis unfold as a graduate student in the 1980s. The experience made a significant mark on his memory, and he argued for a lower limit, believing it crucial for NSU CU’s survival. Certainly, he told the other members, interest rates would be increasing considerably over the next few years, and believed the 8% limit was too high.

Should NSU CU change its policy? What would you recommend to the Board?

**References**

Mishkin, Frederick S. (2013). *The Economics of Money, Banking, and Financial Markets.* Tenth edition. Boston: Pearson

White, Lawrence. (1991). *The S&L Debacle.* New York: Oxford University Press.