

The Effect of Capital Ratios on Credit Union Rates Nationwide

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INTRODUCTION

The average net worth ratio of credit unions has increased substantially over the past twenty years. The net worth ratio is defined as capital minus anticipated charge-offs divided by total assets. During this time period, there has been a little pressure by the National Credit Union Administration (NCUA)¹ to increase this ratio. Before the 1990's, a federal credit union had to have a capital-to-asset ratio² of at least 4 percent and have acceptable credit union examinations to meet requirements for capital. By the late 1990's, NCUA deemed a "well-capitalized" credit union to have a net worth ratio of 7 percent.

However, Table 1 shows that the average net worth ratio of credit unions has increased significantly since 1985 to well beyond the well-capitalized ratio of 7 percent. The large increases came between 1985 and 1997, with the average net worth increasing from around 6.5 percent to just over 11 percent, and stabilizing since then. Much of this increase came in the early 1990's, when falling interest rates, due to an easy monetary policy, helped increase net income for depository institutions. This is because loans (their major asset) have longer maturities and hence re-price at a slower rate than do deposits (their major liability).

Table 1

| Year | Credit Union Average Net Worth |
|---------------|--------------------------------|
| December 2006 | 11.40 % |
| December 2003 | 10.68 % |
| December 2000 | 11.36 % |
| December 1997 | 11.01 % |
| December 1994 | 9.61 % |
| December 1991 | 7.66 % |
| December 1988 | 6.85 % |
| December 1985 | 6.49 % |

Source: CUNA *Credit Union Report*, 2006.

Some in the credit union industry feel that the current average net worth ratio is too high. For example, Bill Hampel, an economist for the Credit Union National Association (CUNA), wrote, "it wasn't all that long ago that retaining earnings for the purpose of building capital wasn't considered the credit union thing to do. The prevailing wisdom held that credit unions, as cooperatives, were obliged to return much of net income to members as soon as it was earned. Bonus dividends were much more common than they were today" (Hampel, 1995).

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With the average net worth ratio at around 11.4 percent in 2007, how high this ratio should be has continued to be an issue. This topic was addressed in a number of articles in credit union publications during 2007. For example, Cooke (2007) wrote that "too high a level of net worth means credit unions are not serving their members to their full potential, CUNA Chief Economist Hampel inferred recently." In addition, Molvig (2007) wrote in *Credit Union Magazine* that "Credit unions' compulsion to be overcapitalized is another growth deterrent, Hampel argues. Rather than building capital, he would like to see credit unions focus on giving back to members - or attracting new members - through raising rates on savings, lowering loan rates, charging fewer fees, or improving convenience." Also, Dawson (2007) stated that he feels that current credit union net worth ratios are too high. He wrote in an opinion published in the *Credit Union Times*: "The principles of a financial cooperative mandate that after the required reserves are set aside to meet state and federal regulatory requirements and other safety and soundness requirements, all income should go to members."

Gentile (2007) also wrote that while the current high levels of net worth highlights the soundness of the credit union industry, it also "calls into question whether there are CUs carrying too much capital." Barlett (2007) noted in the *Credit Union Journal* that CUNA economist Mike Schenk also has argued that credit union capital may be too high.

Schenk stated that credit unions "have the flexibility to bring capital and net worth down a bit and use it to build more branches, offer better rates, invest in technology, a myriad of things to attract people." And, Rubenstein (2007) wrote in the *Credit Union Times* that Bob Hoel of the Filene Institute said that "perhaps credit unions should be much more open to enhancing member benefits though returning some capital to members or at least by refraining from building capital ratios too high."

There are two basic arguments that credit unions should maintain a lower net worth. First, since credit unions are cooperatives, any retained earnings greater than what is needed, given their risks, should go back to the credit union members. Second, credit unions may have to restrict growth if they try to maintain a higher net worth ratio than what is needed. This can come at a cost of not serving new members who could benefit from credit union membership. The following equation illustrates this point. The required return on assets (ROA) is equal to (the growth rate) times (net worth). So, if a credit union is growing at 10 percent with a net worth goal of 12 percent, it will need a $ROA = 10(.12)$ or 1.2. However, if the net worth goal is 8 percent, it will need a $ROA = 10(.08)$ or 0.8. Since the average ROA for credit unions for year-end 2006 was 0.83 (CUNA *U.S. Credit Union Profile*, 2006), the average credit union could grow by at most 6.9 percent and still maintain a 12 percent net worth ratio.

However, adequate net worth is needed to maintain credit union soundness and to protect against interest rate risk and credit risk. To guard against the risks of a typical credit union, NCUA, as mentioned above, deems a 'well-capitalized' credit union to have a net worth of 7 percent. So, are there any arguments in favor of having net worth ratios averaging over 11 percent? One would be that

with such a strong net worth ratio, a credit union would be able to withstand better any unforeseen large risks that may occur, including interest-rate and credit risks.

A second possibility would be if credit unions with higher net worth ratios actually do give some of it back in the form of more favorable interest rates on deposits or loans. In a sense, the credit unions have existing net worth (capital) to use at a zero cost. Hence, "institutions with higher capital ratios tend to have a more stable and lower source of funds from which loans and investments can be financed" (CUNA Chief Financial Officer Council, 1996, page 39). Jeff Rush, CEO of Firestone Federal Credit Union, wrote an opinion published in the *Credit Union Times* in 2007 supporting this view point on the benefits of obtaining a higher net worth ratio. He wrote (page 17) that "if the earnings on capital are being used to bolster dividends on share accounts or maintain lower rates on loans, what is the problem?" He goes on to provide examples of how higher capital benefits their members.

We found only one paper that examined how credit unions with higher net worth ratios may use it. Tokle and Tokle (2004) added the net worth ratio as an independent variable to a structure-performance model that they had used before, to examine if credit unions with a higher net worth might pass on any reduced cost-of-funds in the form of lower interest rates on used-vehicle loans. Since the net worth ratio variable was insignificant in their model, they found no evidence that credit unions with a higher net worth ratio return some of it back to their members via lower interest rates on used-vehicle loans. Their sample included all credit unions in Idaho and Montana, using 1997 data. This study uses a variation of that model, but adds to their previous study by updating to 2004 data and using a nationwide sample. The next section of this paper briefly discusses the sample. This is followed by a presentation of the model. Then, the results and implications of the regression model are discussed, followed by a conclusion.

SAMPLE

The sample consists of all the credit unions (298) in 25 mid-sized cities across the U.S. These cities were selected to be in rural areas and not part of a larger urban area in order for the cities to represent distinct local markets. Hence the local market is taken to be the cities and not the counties. See the Appendix for a table of these 25 cities.

THE MODEL AND DATA

The interest rate on used-vehicle loans is the dependent variable used in an OLS regression model and is used in natural log form. Feinberg (2001) used as a dependent variable in a regression model new-vehicle bank loan rates because they "seemed mostly likely to be provided in a local market." Since a somewhat larger percentage of used-vehicle than new vehicle loans tend to be made by local lending institutions, the used-vehicle lending markets should be even more local in nature. The data

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for used vehicle interest rates and for all of the independent variables come from the NCUA web site, taken from individual credit union call reports for June 2004. All of the following independent variables are tested with one-tailed tests unless otherwise indicated.

1. Credit Union Growth (Growth).

Credit union growth is a proxy measure for stronger demand. We expect a positive sign because higher growth may lead to higher interest rates (Tokle and Tokle, 2002). Growth is measured by the percentage change in total credit union assets, taken from June 2003 to June 2004.

2. Credit Union Size (Size).

Credit union size, measured by total credit union assets, is a proxy variable for economies-of-scale. In previous studies, depository institution size has often been used to try to capture economies-of-scale (for example, see Hannan and Liang, 1995). Because a larger size should mean lower average cost via economies-of-scale, we expect a negative sign (Tokle and Tokle, 2002). Size is used in natural log form.

3. Average Deposits/Member (Average Deposit).

A higher average deposit/member will allow a credit union to have, *ceteris paribus*, a more efficient operation. Because total deposits drive the credit union asset size, a higher deposit balance per member will allow the credit union to be larger with the same number of employees and hence be more efficient. Because increased efficiency may help to decrease loan rates, we expect a negative sign. In the regression analysis, the average deposit is in units of \$1,000s to keep its coefficient from being too small.

4. Average Salary and Benefits (in thousands of dollars)/Employee (Salary).

Following Calem and Carlino (1991), higher wages may reflect higher costs, but higher wages may also reflect higher worker productivity. Hence, higher wages may lead to either lower or higher loan rates, and thus Salary is a two-tailed test (Tokle and Tokle, 2002).

5. Net Charge-offs/Average Loans (Charge-offs/Loans).

Charge-offs are measured as the total loans charged-off during the previous 12 months divided by total loans. We expect a positive sign because the higher costs associated with higher charge-offs could lead to higher loan rates (Tokle and Tokle, 2004).

6. Net Worth/ Total Assets (Net Worth/Assets).

Following Tokle and Tokle (2004), we expect a negative sign because a higher net worth/assets might lead to lower interest rates on used vehicle loans. This is because a credit union can use its net worth

(which can also be referred to as capital or retained earnings) at a zero percent cost, while it pays a positive interest rate plus has transaction costs to maintain deposits. For example, suppose that there are two credit unions with \$100 million in asset size (a typical size for a credit union in 2008). Assume that credit union A has an 11 percent net worth ratio, while credit union B has a 7 percent ratio and that the interest rate needed to attract new CD deposits in the local market requires a 5 percent interest rate. Then, credit union A has a cost advantage over credit union B in the uses of funds of \$4 million times 5 percent, which equals \$200,000. Some of this cost advantage could be used to fund loans at lower interest rates. Hence, it is hypothesized that a credit union with a higher net worth may pass on some of its lower overall cost of funds in the form of lower loan interest rates.

7. Fee Revenue/Total Assets (Fee/Assets).

Fee revenue has increasingly become a more important source of revenue to depository institutions, including credit unions, over the past five to ten years. On one hand, a credit union with a larger fee revenue source may in turn charge lower interest rates on loans. On the other hand, if a credit union is under pressure to increase its revenues, it may charge both higher fees and loan rates. Hence, Fee/Assets is a two-tailed test.

8. Credit Union Membership Statewide/ State Population (Members/Pop).

In a regression model that also had loan interest rates as the dependent variable, Feinberg (2001) used credit union membership as a percentage of the state population as an independent variable, “to proxy the supply elasticity (essentially the ease of expansion)” (page 561). In addition, surveys of consumer interest rates have repeatedly demonstrated that credit unions overall charge lower rates on loans than do banks. Also, Tokle and Tokle (2000) and Feinberg, (2001) found that a larger credit union presence also leads to better rates for bank customers. Thus, more credit union competition may also lead to lower loan rates at credit unions. We expect a negative sign for the coefficient of Members/Pop.

RESULTS

The descriptive statistics for all the variables are shown in Table 2. All the variables show reasonable means and ranges for the sample of credit unions taken from June 2004. For example, the used-vehicle loan rates have a mean of 6.47 percent, with a range of 3.64 to 15.00 percent. The independent variable of the most interest in this study, Net Worth/Assets, has a mean of 12.91 percent. This is just slightly over the average net worth for all credit unions nation wide for 2004 (see Table 1). And, the net worth range is quite large, with a minimum net worth ratio of 1.33 percent (which signals that a credit union is nearly insolvent), while the maximum net worth ratio is nearly 40 percent. The minimum charge-offs with a negative number reflects that some credit union had more in

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recoveries from previous bad loans than were already charged-off during the time period. And, the minimum salary of \$ 4,800 probably comes from a very small credit union in the sample that employs only one or two part-time workers.

Table 2. Descriptive statistics of the variables.

| Variable | Mean | Minimum | Maximum |
|-------------------|-----------|-----------|-------------|
| Interest Rate | 6.47 % | 3.64 % | 15.00 % |
| Growth | 3.87 % | - 21.22 % | 71.56 % |
| Size (millions) | \$ 64.26 | \$ 0.24 | \$ 2,691.86 |
| Average Deposit | \$ 4,924 | \$ 594 | \$ 19,690 |
| Salary | \$ 38,440 | \$ 4,800 | \$ 77,985 |
| Charge-offs/Loans | 0.61 % | -3.81 % | 10.37 % |
| Net Worth/Assets | 12.91 % | 1.33 % | 39.09 % |
| Fee/Assets | 0.45 | 0.00 | 5.09 |
| Members/Pop | 27.02 % | 17.30 % | 43.60 % |

The ordinary least squares regression results are reported in Table 3. Of the 298 credit unions in the sample, 6 were dropped due to missing data. The model explains 24 percent of the variation of used-vehicle interest rates. Four of the eight independent variables, Growth, Average Deposit, Salary and Net Worth/Assets were not significant.

The coefficient for Size was negative as expected and significant at the 1 percent level. Currently, economies-of-scale seems to be an extremely important factor in many aspects of credit union behavior and structure. For example, Wilcox (2005) wrote that "larger credit unions, on average, have decidedly lower costs and higher net incomes, as we might expect in the presence of important economies of scale." As expected, credit unions with higher Charge-offs/Loans had, with significance at the one percent level, charged higher interest rates for used vehicle loans. The coefficient for Fee/Assets was positive and also significant at the one percent level. Fee/Assets is a two-tailed test. Hence, it appears that credit unions in this sample seek to increase revenues by charging both higher fees and higher loan rates. And, the coefficient for Members/Pop was negative as expected and significant at the 10 percent level.

The independent variable of the most interest in this study, Net Worth/Assets, was insignificant, as it also was in the 2004 Togle and Togle paper. Thus we cannot find any evidence that credit unions with a higher net worth ratio return some of it back to their members in the form of lower interest rates on used-vehicle loans. It is possible that credit unions with a higher net worth ratio benefit credit union members in other areas. We did try to model Net Worth/Assets as an independent variable for three other interest-rate variables (new vehicle loans, certificates of deposits and money market) as well as for fee revenue/assets. We were unable to find net worth as a contributing factor for any of these dependent variables.

Table 3. Dependent Variable: Used-vehicle loan rate (Natural log).

| Variable | Coefficient | t-value | P-value |
|-------------------|-------------|---------|---------|
| Constant | 2.9248 | | |
| Growth | 0.0011 | 0.68 | 0.25 |
| LnSize | - 0.0645 | - 4.98 | 0.00 |
| Average Deposit | - 0.0051 | - 0.72 | 0.24 |
| Salary | - 0.0007 | - 0.47 | 0.64 |
| Charge-offs/Loans | 0.0463 | 3.47 | 0.00 |
| Net Worth/Assets | 0.0026 | 0.76 | 0.23 |
| Fee/Assets | 0.0856 | 2.66 | 0.01 |
| Members/Pop | -0.0027 | -1.34 | 0.09 |

292 cases used; 6 contained missing values. Adjusted R-Squared = 24.0 %.

CONCLUSION

Credit unions with a higher net worth ratio may be using it to benefit its members in ways other than charging lower interest rates on used-vehicle loans. For example, some credit unions may be offering more services and/or maintaining more branches. Alternatively, a higher net worth may also allow some credit unions to operate less efficiently. If the latter is the actual reason, then CUNA economist Bill Hampel may be right: "Rather than building more capital, he would like to see credit unions focus more on giving back to members" (Molvig, 2007). Further research may shed more light on how credit union capital is used.

END NOTES

1. The NCUA charters and examines all federal credit unions, but also provides deposit insurance for most state chartered credit unions. In 2006, there were 8,853 credit unions, with 5,306 having a federal charter (CUNA: *Credit Union Report*, 2006 Mid-Year).
2. In that late 1990's, NCUA also started to use net worth ratios rather than capital ratios in their capital requirements.

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APPENDIX

List of cities in Sample

1. Pocatello, ID
2. Billings, MT
3. Redding, CA
4. Eau Claire, WI
5. Spokane, WA
6. Jackson, MS
7. Peoria, IL
8. Cedar Rapids, IA
9. Flagstaff, AZ
10. Lubbock, TX
11. Asheville, NC
12. Knoxville, TN
13. Pueblo, CO
14. Sioux Falls, SD
15. Topeka, KS
16. Pine Bluff, AR
17. Saginaw, MI
18. Dayton, OH
19. Tallahassee, FL
20. Macon, GA
21. Manchester, NH
22. Charleston, WV
23. Rochester, NY
24. Erie, PA
25. Waterbury, CT