



# Credit union loan rate determinants following the 2008 financial crisis

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## ABSTRACT

Previous studies show that a variety of institutional and market variables influence cross-sectional variation in the interest rates that credit unions charge on loans. This study examines the behavior of loan interest rates using nationwide credit union data for the fourth quarter of 2009 in the United States. Results from this sample of more than 6,700 individual credit unions corroborate earlier research indicating that credit union competition tends to suppress loan rates and that economies of scale exist at these financial intermediaries. In contrast to prior studies, however, credit unions with higher net worth ratios are found to charge higher interest rates on loans.

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## 1. Introduction

Credit unions are not-for-profit, member-owned financial institutions that emerged from the cooperative banking movement in the 19th and early 20th centuries. Credit union members are required to share a common bond defined on the basis of occupation, place of residence, or associational affiliation. Historically, in the United States, occupational common bonds have most often been the basis for credit union membership. Employer subsidies, along with tax exemptions, frequently provide credit unions with relatively important competitive advantages vis-à-vis commercial banks and have contributed to the

ubiquity and growth of these cooperative financial institutions (Pugh & Ingram, 1984). Credit unions can hold federal or state charters. The National Credit Union Administration (NCUA) charters and examines federal credit unions, while state credit unions are chartered and examined by state agencies. Since 1970, all federal and most state credit unions have had deposit insurance coverage administered by NCUA through the National Credit Union Share Insurance Fund (NCUSIF).

Like most types of financial institutions, credit unions were deeply affected by the 2007–2009 recession. As the housing bubble burst and unemployment rates rose, loan delinquency and charge-off rates also increased, straining the resources of many credit unions. The 2008 financial crisis contributed to the failure of five large wholesale credit unions insured by the NCUSIF, resulting in rapid depletion of the insurance fund. Beginning in 2009, credit unions were assessed annual premiums to replenish the NCUSIF and were also required to contribute to a stabilization fund

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**Table 1**  
Credit union interest rates.

Year-end	Used-vehicle rate (%)	Money market rate (%)	1-year CD rate (%)	1-year treasury rate (%)
2006	7.0	3.0	4.8	4.9
2007	7.0	3.0	4.6	3.3
2008	6.4	1.8	3.1	0.5
2009	6.1	1.0	1.8	0.4
2010	5.4	0.6	1.3	0.3
2011	4.6	0.5	1.0	0.1

Data source: CUNA (2012).

created by the NCUA to manage losses from the failed credit unions over time. In addition to facing new deposit-insurance premiums, many credit unions sustained large investment losses during this period. These factors, taken together, diminished net income and net worth for a substantial number of credit unions (Rosenthal, 2012).

Another consequence of the financial crisis was a marked reduction in interest rates. Federal Reserve monetary policy turned very stimulative and pushed short-term interest rates to near zero during this period. In addition, loan demand was weak as consumers tried to repair their balance sheets, and employment losses led to weak household incomes. Finally, although credit standards tightened to take into account higher credit risks due to the recession, loan supply strengthened in one respect: credit unions were looking to make loans when possible as the other major category of income earning assets, investments, were earning near-zero interest rates. All of these factors led to historically low interest rates on credit union loans in the United States. Table 1 shows the decline in the interest rates for used vehicle loans, money market deposits, 1-year certificates of deposit (CDs), and 1-year Treasury notes. The latter provide an approximation of the returns that credit unions were able to earn on their investments, which tend to be short-term.

The recession may have affected credit union loan interest rates in several distinct ways. First, as suggested above, higher unemployment rates are likely to reduce demand for loans, thus depressing loan rates. Second, the generally low returns on investments in 2009, reflected in the low yields on treasury notes shown in Table 1, may have conferred a competitive advantage on credit unions that maintain a relatively large ratio of loans to investments. One practice that may affect the ratio of loans to investments is risk-based pricing of interest rates. Risk-based lending generally tends to increase the total volume of loans by lowering the interest rates charged to low-risk households while also expanding access to credit for high-risk households that would otherwise be denied loans (Edelberg, 2006). In the context of meager returns on investments, having a larger proportion of assets in loans might enable credit unions that practice risk-based lending to charge lower overall interest rates. However, it is also possible that risk-based pricing may raise average interest rates by increasing the borrowing costs of high-risk households.

Third, the increase in rates of loan delinquency and default during the recession likely exerted upward pressure on credit union loan interest rates. More charge-offs

of bad debt are expected to increase costs that credit unions face and thus increase interest rates for borrowers (Tokle & Tokle, 2002). Loan losses may also result in depletion of credit unions' capital cushions, as reflected in net worth ratios. Hubbard, Kuttner, and Palia (2002) find that low-capital banks charge higher loan rates than well-capitalized banks. Similarly, net worth ratios are predicted to be inversely related to credit union loan rates. Finally, credit unions that are under pressure to increase revenues may charge additional fees while simultaneously raising loan rates (Tokle & Tokle, 2008). Although prior studies examine the effects of net charge-offs, net worth, fee revenue, and other institution-specific variables on credit union loan rates, little is known about the nature of these relationships during the recent economic downturn.

This study uses a sample with more than 6,700 observations from credit unions in all 50 states and the District of Columbia to examine factors that affected five categories of credit union loan interest rates in the aftermath of the 2008 financial crisis. Substantial variation in the performance of regional economies was registered during this period. For example, during 2009 state unemployment rates ranged from a low of 4.2% to a high of 14.8% (BLS, 2013a). There were also notable regional disparities in credit risk. Moscone, Tosetti, and Canepa (2014) show that the volume of non-performing bank loans exhibited a high degree of heterogeneity across United States metropolitan areas during the 2006–2011 period. As discussed above, default risk and unemployment rates are likely to affect interest rates charged on loans. This analysis will assess the impacts of the major determinants of cross-sectional variation in credit union loan rates identified by prior studies with special attention to variables that reflect pressures arising from the financial crisis.

Data are collected for the fourth quarter of 2009. Technically the great recession ended in June 2009, but the recovery following the financial crisis was slow and weak (Behravesch & Gault, 2012). For credit unions, in particular, fallout from the financial crisis reached a crescendo in 2009. In that year, the demise of several large wholesale credit unions triggered the imposition of additional deposit-insurance premiums at the same time that many institutions were forced to absorb substantial losses (Rosenthal, 2012). Thus, the last quarter of 2009 is an appropriate time to study loan rate determinants in the context of adverse economic conditions. Literature on loan interest rates and credit unions is reviewed below. The subsequent section describes the methodology employed and the hypothesized effect of each explanatory variable on interest rates. Finally, empirical results are presented, followed by a conclusion.

## 2. Literature review

Many studies of loan interest rate determinants are found in the banking literature, but relatively few are available for credit unions. A number of the banking studies examined the effect of industry concentration on loan interest rates. For example, Edwards (1964) finds that a rise in the 3-firm concentration ratio leads to an increase of interest rates charged by banks on business loans. Feinberg

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