

THE INFLUENCE OF CREDIT UNIONS ON BANK CD RATE PAYMENTS IN THE U.S.

Robert J. Togle*

Historically, banks in the U.S. were the only depository institution that could offer checking deposits. They also tended to specialize in commercial lending, while thrifts (S&L's and mutual savings banks) tended to specialize in home mortgage lending and credit unions tended to specialize in consumer lending. Since 1980, the powers of these depository institutions have become more similar, due to legislation such as the Depository Institutions Deregulation and Monetary Control Act of 1980 and regulatory changes. Consequently, credit unions have been increasingly in more direct competition with banks and thrifts.

Because credit unions are cooperatives, if they can operate efficiently, they should have overall better interest rates than banks on both deposits and loans since they do not pay out dividends to stockholders¹. This has been shown many times in past surveys. For an example, see the September 27, 2004 issue of *U.S. News and World Report*.

However, credit union advocates and consumer groups have also argued that the credit union industry provides competition that also benefits banks customers. For example, Evans and Shull (1998, p. 26) in a report for National Economics Research Associates wrote that "coupled with the large number of individuals who have access to credit unions and the widespread presence of credit unions, these favorable rates reinforce credit unions' competitive presence in commercial banks and other banking service providers." Similar comments have come from Lutz (1998) and *Credit Union News Watch* (1997). And, banker Harris Simmons said in the January 31, 2005 issue of the *American Banker* that "pressure from other banks and specifically credit unions in Utah prompted it to raise rates on money market accounts by 20 basis points late in the fourth quarter" (CUNA News Now, 2005). But, it has only been since December 2000 that any articles have shown in the peer-reviewed economic literature that indeed credit union competition with banks does in fact also benefit bank customers.

This paper uses the regression estimates from two such studies to estimate the benefit in certificates-of-deposits (CDs) payments to bank customers that results from credit union competition. Of

*Professor of Economics, Idaho State University, Revised July 2005

course, this implies, as banker Harris Simmons stated above, that this benefit is a transfer from the bank stockholders to the bank customers.

First Generation of Credit Union Competition Studies

Four studies, Rhoades (1979), Hannan (1984), Rhoades and Heggestad (1985) and Rhoades (1987) examined the effects of credit union competition or various thrift (including credit unions) measures of competition on bank behavior. Using various data sets from somewhere between 1968 and 1982, they found virtually no evidence that credit union competition affects bank performance. However, since this time period, as stated above, credit unions have been given authority to offer more products that compete with banks, such as checking accounts. This helped credit unions to grow relative to banks. Even though credit unions as a group equaled only about 7 percent of the total bank assets in 1999, their assets grew at a rate that was roughly double that of banks from 1970 to 1999 (Mishkin, 2001, p. 39). Consequently, the second generation of credit union competition studies, using data from the 1990s, did find evidence that credit unions had a competitive influence on bank behavior.

Second Generation of Credit Union Competition Studies

Tokle and Tokle (2000) was the first study in the economic literature to find that credit union competition can affect bank behavior and hence benefit bank customers. Also, this was the first study since Hannan (1984) to use a separate variable for credit union competition. They used data from 1998, an update of Hannan by 26 years. The dependent variables were interest rates on savings accounts and one and two-year CDs for all banks in Idaho and Montana in cities with a population of 8,000 or more. The independent variable of interest (the credit union competition variable) was computed as the credit union market share of deposits, or as total credit union deposits divided by total credit union plus S&L plus bank deposits. In their regression results, the credit union competition variable was positive and significant at the 5 percent level for both one and two-year CDs, while it was insignificant for savings deposits. Thus, credit union competition appears to benefit bank customers as banks paid higher interest rates on CDs in markets that had a larger credit union presence. On the banks' asset side, Feinberg (2001), using data from 1992 to 1997, found that credit union competition had a negative and significant effect on bank loan interest rates.

Hannan (2002) examined the effect that credit union competition might have on bank-deposit interest rates. He states that "in contrast to previous studies, the sample employed covers the nation as a whole, incorporates all large urban areas, and employs survey data on deposit rates for a substantially larger number of institutions than previously employed" (p. 4). Using data from 1998 for about 80 large metropolitan areas, the dependent variables were interest rates on money market, interest checking and three-month CD deposits. Hannan used three different specifications for the independent variable of interest (the credit union competition variable). One was the credit union market share, composed

similarly to the credit union competition variable used in Tokle and Tokle (2000) and Feinberg (2001). Hannan also used credit union population percentage (credit union members divided by population over age 18 in each market) and potential credit union population (potential members of occupational credit unions divided by population over age 18 in each market) as alternative credit union competition variables. In Hannan's regression results, credit union market share was positive and significant at the 5 percent level for three-month CDs, while credit union population percentage was positive and significant at the 5 percent level for all three equations. And, the potential credit union population was positive and significant at the 10 percent level for money market deposits. In sum, these three second-generation studies yielded very "robust" results, suggesting that an increased presence of credit unions in local markets cause banks to offer more competitive interest rates, benefiting bank customers.

Some Conservative Estimates of Bank Customers Benefiting on Their CD Holdings

Using data from 1998, but employing much different samples with somewhat similar regression models, both Tokle and Tokle (2000) and Hannan (2002) produced positive coefficients at the 5 percent significance level for the effect of credit union market share on bank CD interest rates. Note that Hannan (2002) points out that when a credit union market share variable is used in these models, the resulting coefficients are probably somewhat biased downward². In other words, the true coefficients are probably larger, indicating even a larger effect of credit union market share on bank CD interest rates that benefits bank customers.

Table 1 estimates the loss in interest payments³ to bank customers holding CDs if credit union market share drops by one standard deviation. One standard deviation is used because it is a standard statistical measure of variation and will keep the estimates well within the range of the data. For Tokle and Tokle, the credit union market share mean was 13.8 percent, with a standard deviation of 7.3 percent. For Hannan, the credit union market share mean was 7.5 percent, with a standard deviation of 4.7 percent.

In Tokle and Tokle, the credit union market share (CU) coefficients in their regression analysis were 0.0034 for one-year CDs and 0.0042 for two-year CDs. Hence, an average of 0.0038 will be used for all CDs. This means that a fall in local markets of CU of one standard deviation or of 7.3 percent (from 13.8 percent) would lead to a drop in bank CD interest rates of 0.0038 times 7.3 or 2.8 basis points. Column 4 shows the estimated reduction in interest earned by bank customers in 2004 in the U.S. (by state) on small CDs (CDs less than \$100,000) resulting from a decrease of CU by one standard deviation. This estimate assumes that the 1998 estimate from Idaho and Montana⁴ (on 1 and 2-year CDs) can be applied to the U.S. as a whole in 2004. The total lost interest payments would for bank customers on CDs would be \$203 million.

In Hannan, the CU coefficient was 2.11 for three-month CDs. This means that a fall in local markets of CU of one standard deviation or of 4.7 percent (from 7.5 percent) would lead to a drop in CD interest rates of 2.11 times 0.047 or 10 basis points. (Note that Tokle and Tokle would put CU, measured as a percentage, say thirteen percent, as 13, while Hannan would put it as 0.13). Assuming that

Hannan's 1998 estimate holds up in 2004, column 5 shows the estimated effect for bank customers (by state) in reduced interest earned on small CDs resulting from a decrease of CU by one standard deviation. The total lost interest payments would for bank customers on CDs would be \$726 million.

Table 1. Total Deposits and CDs at Banks and Savings Institutions in 2004. Also Estimated Benefits in CD Interest Payments Due to Credit Union Competition in Columns 4 and 5. (All Figures in Thousands of \$).

1	2	3	4	5
State/Territory	Total Deposits	Small CDs	(Tokle & Tokle) (CDs times 0.00028)	(Hannan) (CDs times 0.001)
Alabama	\$ 62,424,000	\$ 8,295,987	\$ 2,323	\$ 8,296
Alaska	5,952,000	791,005	221	791
American Samoa	142,000	18,871	5	19
Arizona	61,810,000	8,214,388	2,300	8,214
Arkansas	38,682,000	5,140,737	1,439	5,141
California	671,111,000	89,188,907	24,973	89,189
Colorado	64,470,000	8,567,895	2,399	8,568
Connecticut	73,841,000	9,813,277	2,748	9,813
Delaware	105,825,000	14,063,867	3,938	14,064
District of Columbia	18,605,000	2,472,556	692	2,473
Fed. States of Micronesia	74,000	9,834	3	10
Florida	300,961,000	39,996,934	11,199	39,997
Georgia	132,041,000	17,547,906	4,913	17,548
Guam	1,551,000	206,124	58	206
Hawaii	23,060,000	3,064,614	858	3,065
Idaho	13,840,000	1,839,300	515	1,839
Illinois	281,924,000	37,466,966	10,491	37,467
Indiana	81,097,000	10,777,580	3,018	10,778
Iowa	51,238,000	6,809,397	1,907	6,809
Kansas	46,549,000	6,186,241	1,732	6,186
Kentucky	56,858,000	7,556,280	2,116	7,556
Louisiana	55,171,000	7,332,082	2,053	7,332
Maine	16,705,000	2,220,051	622	2,220
Marshall Islands	0	0	0	0
Maryland	82,056,000	10,905,029	3,053	10,905
Massachusetts	172,721,000	22,954,172	6,427	22,954

Michigan	136,073,000	18,083,748	5,063	18,084
Minnesota	94,437,000	12,550,432	3,514	12,550
Mississippi	33,475,000	4,448,740	1,246	4,449
Missouri	87,090,000	11,574,035	3,241	11,574
Montana	11,911,000	1,582,941	443	1,583
Nebraska	32,893,000	4,371,394	1,224	4,371
Nevada	40,738,000	5,413,974	1,516	5,414
New Hampshire	29,365,000	3,902,532	1,093	3,903
New Jersey	211,318,000	28,083,613	7,863	28,084
New Mexico	18,172,000	2,415,012	676	2,415
New York	637,592,000	84,734,319	23,726	84,734
North Carolina	163,898,000	21,781,618	6,099	21,782
North Dakota	11,400,000	1,515,030	424	1,515
Northern Mariana Islands	522,000	69,372	19	69
Ohio	200,200,000	26,606,059	7,450	26,606
Oklahoma	46,322,000	6,156,073	1,724	6,156
Oregon	39,165,000	5,204,927	1,457	5,205
Palau	9,000	1,196	0	1
Pennsylvania	210,672,000	27,997,761	7,839	27,998
Puerto Rico	44,410,000	5,901,974	1,653	5,902
Rhode Island	19,881,000	2,642,133	740	2,642
South Carolina	48,085,000	6,390,371	1,789	6,390
South Dakota	53,278,000	7,080,508	1,983	7,081
Tennessee	90,194,000	11,986,548	3,356	11,987
Texas	310,346,000	41,244,176	11,548	41,244
Utah	102,048,000	13,561,914	3,797	13,562
Vermont	9,014,000	1,197,937	335	1,198
Virgin Islands	1,713,000	227,653	64	228
Virginia	147,775,000	19,638,913	5,499	19,639
Washington	87,424,000	11,618,422	3,253	11,618
West Virginia	22,660,000	3,011,455	843	3,011
Wisconsin	96,111,000	12,772,902	3,576	12,773
Wyoming	7,883,000	1,047,630	293	1,048
Totals	5,464,782,000	726,255,316	203,351	726,255

Source: FDIC and Author's calculations. For more detail on the source of total deposits and CDs, see endnote 5.

In sum, using the estimated coefficients of credit union market share from Tokle and Tokle and Hannan, a fall in credit union market share of one standard deviation would lead to a large decrease (in the aggregate) in interest payments to bank customers. Because Hannan's study used nationwide data, the credit union market share coefficient from his study probably provides a better estimate of the effect of credit union competition on bank CD rates. But, the robustness from using both studies adds the evidence of the effect of credit union competition on bank behavior. In addition, the size of the estimated reduced interest payments to bank customers for all consumer deposits, if credit union market share fell by one standard deviation, are probably larger for two reasons. As mentioned in endnote 2, the credit union market share coefficients are probably biased downward. And second, I have just made estimates for CDs since the credit union market share coefficient was significant in both Tokle and Tokle and Hannan for CD rates. However, Hannan also found that the potential credit union population was positive and significant in interest checking and money market accounts as well. Thus, credit union competition probably leads to higher interest rates for other bank deposits.

Conclusion

Survey data of interest rates from banks and credit unions readily shows the benefits of credit union membership. However, the results of Tokle and Tokle (2000), Feinberg (2001) and Hannan (2002) all show evidence that credit union competition also benefits bank customers. Using estimates for the effect of credit union market share on bank CD rates from Tokle and Tokle and Hannan, if credit union market share fell by one standard deviation, the loss of interest payments to bank customers on CDs would be considerable in 2004, as shown in table 1. And, from Hannan's results, it appears that credit union competition also increases the bank interest rates of other types of deposits. It appears that the presence of credit unions in local markets benefits credit union members and nonmembers alike.

ENDNOTES

1. Credit unions' federal income-tax exemption dates back to the Revenue Act of 1916 (Srinivasan and King, 1998) and is another reason sometimes cited for the better interest rates offered by credit unions. However, by far, most of the credit union advantage is due to its cooperative structure rather than its non-income tax status. About a third of bank income was paid in income taxes in 2002 (Emmons and Schmid, 2003). In other words, about two thirds of bank income went to stockholders. In addition, this difference in tax revenue going to the federal government (because credit unions are income tax exempt) is overstated because credit union members pay more in personal income tax due to the higher interest rates paid on their deposits. This was conservatively estimated to be over \$600 million in 2000 (U.S. Treasury, 2001). Also, banks can branch nation wide while credit union are restricted to serving a particular field-of-membership. In addition, banks can offer a much wider range of products and services than can credit unions. Lastly, many of the smaller banks also are exempted from federal income tax by becoming Subchapter S Corporations. In 1999, more than 1,260 banks reaped this tax benefit (U.S.

- Treasury, 2001). In comparison, credit unions tend to be much smaller than banks. For example, about 80 percent of credit unions had an asset size less than \$50 million in 2003 (Credit Union National Administration, 2003).
2. Hannan (2002, p. 8) states that coefficients of the credit union market share variable are likely to be underestimated for a couple of reasons. First, credit union market share "is likely to exhibit the greatest degree of endogeneity, since differences in the deposit rates observed for institutions in the sample are likely to influence the extent to which credit union members hold their deposits in credit unions. ... Because higher rates offered by banks and thrift institutions should, if anything, cause a reduction in the deposit share of credit unions in the market, this form of endogeneity should impart a negative bias to an OLS estimate of the coefficient *cudepshare_j*" (Note the *cudepshare* stands for the independent variable credit union market share). In addition, Hannan (2002, p. 8) points out that "the deposit share of credit unions probably underestimates the true proportion of retail deposits accounted for by credit unions, since the deposit data for banks and thrift institutions necessarily include substantial amounts of large-denomination "wholesale" and commercial deposits. To the extent that this introduces noise into the measurement of credit unions' true deposit shares, the coefficients of *cudepshare_j* will be biased toward zero."
 3. The credit union market share coefficients used in these estimates were computed using 1998 data, when the CD interest rates (the dependent variable) were higher than in 2004. However, it seems that these coefficients could be of the same magnitude if estimated using 2004 data because while the levels of banks CD rates would be lower, the differences of CD rates between banks could certainly be of similar magnitudes.
 4. Statistically, this estimate has gone beyond the "scope of inference." But the estimate still can be reasonable to the extent that the relationship between bank CD rates and credit union market share is similar for the rest of the US as it is for Idaho and Montana. In addition, the estimate made using the coefficient from Hannan, who did use a nation-wide sample, for the effect of a credit union market share decline on bank CD interest payments is larger.
 5. Total deposits of all FDIC-insured institutions (banks and S&Ls) come from the June 2004 ***FDIC Summary Tables Report*** and are reported by state. Total small CDs (less than \$100,000) come from the September 2004 ***FDIC Statistics on Depository Institutions Report***. However, the CD data were not given by state. So, the author assigned the CD data by state based on the percentage that the state had of total deposits from the ***FDIC Summary Tables Report***.

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