

## **CREDIT UNION SAFETY AND PARENT ORGANIZATION EMPLOYMENT STABILITY**

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### **INTRODUCTION**

Credit unions are unique among financial institutions because they provide saving and lending services almost exclusively to their owners. The owner/members must be linked together by a “common bond” which may lead to a concentration of risks that could affect the safety of the credit unions.<sup>1</sup>

The objective of this paper is to determine whether instability risks associated with a “common bond” affect the safety and performance of credit unions. Aspects of credit union safety examined include reserves, loan portfolio composition, and loan delinquency rates. Also examined are the effects of parent organization instability risks on credit union member benefits and the relative treatment of borrowers and savers.

### **COMMON BOND AND INSTABILITY RISK**

For credit unions chartered in the United States, the common bond linkage among members can generally be classified into four major types—occupational, associational, community, and multiple group. Members of an occupational credit union are employees of a common employer. Members of an associational credit union are members or employees of fraternal, professional, or trade associations, cooperatives, religious organizations, or labor unions. Members of community credit unions live within a well defined rural or urban area. Members of multiple group credit unions comprise several groups (e.g., associational and occupational) with no single group predominant.

The common bond for almost 73% of the credit unions in the United States in 1989 was occupational—the member/owners were employees of a common employer. It is intuitively plausible that risks of economic instability experienced by the common employer may affect the safety and performance of the occupational credit union which serves its labor force. For example, if the parent organization experiences a large reduction in the demand for its products as the economy moves through a recessionary period, it may be forced to lay off a substantial portion of its employees and take other steps to reduce its payroll. As a consequence, the credit union associated with this parent organization might experience a disproportionate concurrent upswing in loan demand (particularly for unsecured personal loans), a draw down in savings deposits, and increased loan delinquency and default rates. In anticipation of such instability risks, the credit union may become more oriented toward the preferences of its net borrowing members.

These instability risks may be compounded by “member for life” provisions—credit union members may elect to continue their membership even though their employment with the credit union’s parent organization is terminated. When members are separated from the parent organization, credit union managers lose an important advantage afforded by the common bond—greater insight regarding the credit worthiness of their customers. Consequently, credit unions with parent organizations which operate in industries that experience considerable volatility in employment may also experience greater risk of loan default.

If these types of problems are common among occupational credit unions with parent organizations that experience unstable employment patterns, then the managers and directors of these credit unions must take

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appropriate compensating steps to maintain safety and adjust for increased risk. Otherwise these credit unions might appropriately be targets for more stringent regulatory oversight.<sup>2</sup>

## CREDIT UNION BEHAVIOR

The members of a credit union are not only the owners of the organization (shareholders), they are also the consumers of its principal output (credit), the suppliers of its primary input (loanable funds), and in many cases the managers of its operations. Because of the multifaceted role of members as suppliers of inputs, demanders of outputs, and owners with claims on any value generated by the organization, identifying an operational objective function for credit unions has been a perplexing task for researchers.<sup>3</sup>

For example, if member savers are to receive the highest possible return on their deposits, borrowers at the credit union must be charged high loan rates. On the other hand, for member borrowers to minimize interest charges on their loans, the credit union must minimize the cost of loanable funds by paying low dividend rates to savers. Since a credit union cannot simultaneously maximize the dividend rate paid to saving members and minimize the loan rate charged to borrowing members, it must intermediate between net savers and borrowers.

Taylor (1971) was among the first to note the potential for conflict between credit union member savers and borrowers. Most subsequent theoretical work has recognized that member group conflict could affect the manner in which credit unions are operated (Flannery, 1974, 1981; Walker and Chandler, 1977; Smith, Cargill, and Meyer, 1981; Black and Duggar, 1981; Navratil, 1981; Gambs, 1981; Peterson, 1981; and Smith, 1984, 1986, 1988).

*A priori*, it is unclear how a credit union will treat member borrowers relative to member savers. Three possibilities are often mentioned in the theoretical literature. If the treatment of borrowers and savers is balanced the credit union is said to be neutral. If the credit union generates more value for one group than the other, the credit union is said to be either borrower-oriented or saver-oriented.

Patin and McNeil (1991 AE, 1991 RSE) provide empirical evidence of the extent of borrower-oriented, saver-oriented, and neutral behavior among U.S. credit unions. However, neither of these studies examine the effect of credit union parent organization instability risk on the relative treatment of borrowers and savers.

To this end, the benefits generated for member savers and member borrowers are measured and compared to identify the degree of borrower or saver orientation among samples of credit unions with relatively stable and unstable parent organizations. The total member benefits generated by each group of credit unions are also calculated and compared.

## MEASURING BENEFITS TO CREDIT UNION MEMBERS

The methodology for identifying the presence of borrower-oriented, saver-oriented, or neutral behavior is based upon two premises: (1) that such behavior will be reflected most directly in the way a credit union allocates the value it generates among its net saving and borrowing members, and (2) that this value can be measured in monetary terms.<sup>4</sup>

### Monetary Benefits Allocated To Savers

The net monetary benefits received by a credit union's savers (NMBS) can be measured by the level of savings at the credit union times the difference between the credit union's dividend rate and the best alternative market rate available on similar types of savings outside the credit union. Since most credit unions offer several types of savings instruments, each credit union's dividend rate and the best alternative market rate must be calculated as weighted averages, i.e.:

Equation 1

$$NMBS = (WADR - WAMDR)TS$$

where:

- NMBS* = net monetary benefits received by credit union savers
- WADR* = weighted average of the dividend rates paid by the credit union on all savings instruments offered<sup>5</sup>
- WAMDR* = weighted average of the best alternative market dividend (savings) rates available on similar types of savings instruments outside the credit union,<sup>6</sup>
- TS* = the total dollar volume of member saving balances.

Equation (1) measures the monetary benefits accruing to a credit union's member savers net of the opportunity costs associated with their decisions. It is based on the theoretical works of Walker and Chandler (1977), Smith, Cargill, and Meyer (1981), and Smith (1984).

### Monetary Benefits Allocated To Borrowers

The net monetary benefits accruing to the borrowing members of a credit union can be measured by the difference between the credit union's loan rate and the best alternative market loan rate, times the level of loan activity. A credit union's loan rate must also be adjusted to account for any interest expense refunded to borrowers. Since most credit unions offer several types of borrowing instruments, each credit union's loan rate and the best alternative market loan rate must be calculated as weighted averages, i.e.:

Equation 2

$$NMBB = [WAMLR - WALR (1 - R)]TL$$

where:

- NMBB* = net monetary benefits received by credit union borrowers,
- WALR* = weighted average of loan rates charged by the credit union for all types of loans to members,<sup>7</sup>
- WAMLR* = weighted average of market loan rates charged by alternative institutions on types of debt instruments similar to those offered by the credit union,<sup>8</sup>
- R* = proportion of interest income on loans refunded to credit union borrowers
- TL* = total dollar volume of loans to credit union members.

Equation (2) measures the monetary benefits accruing to a credit union's member borrowers net of the opportunity cost of their decision to obtain funds from the credit union rather than from their best alternative source of funds. It is also based on the theoretical works of Walker and Chandler (1977), Smith, Cargill, and Meyer (1981), and Smith (1984).

### Relative Treatment Of Borrowers And Savers

To compare the treatment of borrowers and savers, the difference between net monetary benefits allocated to each group must be calculated in relation to the size of the credit union, i.e.:

Equation 3

$$DR = (NMBS / TA) - (NMBB / TA)$$

where:

$TA$  = the  $CU$ 's total assets.

$DR$  can be converted to a relative borrower-saver treatment index ( $DI$ ) as follows:

Equation 4

$$DI = DR / STD_0$$

where:

$STD_0$  = Standard Seviation of  $DR$  about zero.

The absolute value of  $DI$  measures the extent to which a credit union deviates from perfect neutral behavior ( $DI=0$ ). The sign of  $DI$  indicates whether a credit union tends to have a saver-orientation ( $DI>0$ ) or borrower-orientation ( $DI<0$ ).

### Total Benefits Received By Members

In order to examine the monetary benefits received by both member groups, net monetary benefits to savers ( $NMBS$ ) and net monetary benefits to borrowers ( $NMBB$ ) must be summed, i.e.:

Equation 5

$$TMB = NMBS + NMBB$$

where:

$TMB$  = the total monetary benefits received by the members of a particular credit union.

$TMB$  may be used to calculate two size adjusted measures of credit union performance—total monetary benefits per member, and total monetary benefits per dollar of assets.

## DATA AND METHODOLOGY

Financial and statistical data were obtained from the National Credit Union Administration (NCUA) for all 8,838 federally chartered, all 4,563 state chartered/federally insured credit unions, and all 687 state chartered/nonfederally insured credit unions in the United States in 1989. Of the 14,088 U.S. credit union's evaluated, 10,250 (72.8%) were occupational. Based on the business activity of the employer/parent organization, two subgroups of occupational credit unions were examined—one with parent organizations in relatively stable industries and the other with parent organizations in relatively unstable industries.<sup>9</sup>

The stability of each credit union's parent organization is measured by the trend and volatility of employment in the three digit SIC industry in which the parent organization operates. Specifically, monthly employment in the parent organization's three digit industry was regressed against a time trend variable for the period from 1980 to 1991. Two dimensions of employment behavior were evaluated: (1) the long-term trend in monthly employment, and (2) the variability of monthly employment relative to the trend.

Credit unions classified as having *unstable* parent organizations are those operating in industries with a declining trend in employment (negative trend coefficient) and a high degree of employment volatility relative to trend (coefficient of variation of monthly employment)—see Table 1. These include credit unions with parent organizations operating in the following industries—SIC 213 (primary metals), SIC 209 (petroleum refining), and SIC 215 (machinery, except electric).

Credit unions classified as having *stable* parent organizations are those operating in industries with a rising trend in employment (positive trend coefficient) and a relatively low degree of employment variability relative to trend (coefficient of variation of monthly employment)—see Table 2. These include credit unions with parent organizations operating in the following industries—SIC 401 (wholesale), SIC 402 (retail), SIC 702 (federal government—military), SIC 701 (federal government—civilian), SIC 703 (state government), SIC 205 (furniture and fixtures), and SIC 704 (local government).

The sample with stable parent organizations included 2,587 credit unions and the sample with unstable parent organizations included 835 credit unions—see Table 3. The NCUA data provide detailed information on the balance sheet and income statement for each credit union using a uniform accounting and reporting system so that problems associated with accounting conventions are minimized.

The empirical model summarized by equations (1) through (5) is used to: (a) measure the monetary benefits received by member borrowers and member savers of all credit unions in the samples, (b) determine the extent of benefit imbalances between member borrowers and member savers for each credit union in the samples, and (c) examine whether credit union parent organization stability affects the relative treatment of borrowers and savers or the level of total monetary benefits to members.

## BENEFITS TO MEMBERS

Comparisons shown in Table 3 between credit unions with relatively stable parent organizations and those with relatively unstable parent organizations are made on the basis of total benefits per member and total benefits per dollar of assets. T-tests reveal no statistically significant difference between the two groups in either measure of benefits.

## RELATIVE BORROWER-SAVER TREATMENT

The results in Table 3 also show that both groups of credit unions exhibited some degree of borrower orientation ( $DI < 0$ ). A test for the difference of means shows no statistically significant difference in the degree of borrower orientation between the two groups.

## SAFETY RESERVES

Safety is one of the main concerns about credit unions with relatively unstable parent organizations. Drawing upon data from the balance sheet of each credit union in the sample, Table 4 compares safety reserves as a percentage of total assets for the sample of stable versus unstable credit unions. It appears that the credit unions with relatively unstable parent organizations have adjusted appropriately to reduce the instability risk to members by maintaining a higher share of reserves.

Table 4 also compares undivided earnings as a percentage of total assets for the two groups of credit unions. While not specifically earmarked as safety reserves, this balance sheet account may also represent a potential source of reserves to protect credit union borrowers and savers. It appears that the credit unions with relatively unstable parent organizations have also adjusted appropriately for increased risk by maintaining a higher share of undivided earnings.

Table 4 shows that credit unions with relatively unstable parent organizations have also explicitly adjusted for increased risk by providing greater allowances for loan and investment losses. These accounts are included in the credit unions' total reserves.

## **LOAN PORTFOLIO**

Another important aspect of the safety of a credit union is the “riskiness” of its principal asset—its loan portfolio. The last line of Table 5 shows that the credit unions with relatively unstable parent organizations invested about 68% of their assets in various types of loans. By comparison, credit unions with relatively stable parent organizations invested a higher share of their assets (over 72%) in their loan portfolio. If the loan portfolio is a credit union’s riskiest way to hold assets, these relative proportions suggest that credit unions with relatively unstable parent organizations appear to be adjusting appropriately for increased risk by being less “loaned up”.

The data presented in Table 5 clearly indicate that there are also some statistically significant differences in the composition of the loan portfolios of the two groups of credit unions. These differences involve unsecured loans, auto loans, and real estate loans (which together account for 58% of the loan portfolios of unstable credit unions and 62% of the loan portfolios of stable credit unions).

Credit unions with relatively unstable parent organizations allocated smaller shares of their loan portfolios to unsecured loans. This appears to be a prudent decision given the employment volatility of the parent organization and the greater potential for members to become unemployed or employed elsewhere. Since the management and directors of the credit union are likely to have less information about the “credit-worthiness” of members no longer employed by the credit union’s parent organization, obtaining collateral for loans is one way of reducing risks.

Credit unions with relatively unstable parent organizations allocated a larger share of their loan portfolios to auto loans. Since these loans are secured against default by an asset that could be repossessed, this would also appear to be a lending strategy designed to reduce risks.

Finally, credit unions with relatively unstable parent organizations allocated a smaller share of their loan portfolios to real estate loans. This too appears to be a risk reducing lending strategy. Credit unions (particularly small ones) generally have less experience with this type of loan. Not only do these types of loans tend to be more costly to administer, they also have figured prominently in recent credit union insolvency problems.

## **DELINQUENCY RATES**

While the composition of a credit union’s loan portfolio can provide some indication of potential risk, a much better measure is the share of its loans which are delinquent. Table 6 shows the volume of delinquent loans as a percent of total assets in 1989 for credit unions with relatively unstable and stable parent organizations.

The results suggest that the credit unions with relatively unstable parent organizations have been as effective in managing their loan portfolios as the credit unions with relatively stable parent organizations. While delinquency rates of each duration appear to be higher for the credit unions with relatively unstable parent organizations, the t-tests reveal that none of these differences are statistically significant at the 10% level. Apparently the risk-reducing adjustments noted above have allowed the credit unions with relatively unstable parent organizations to maintain loan default rates comparable to those of credit unions with relatively stable parent organizations.

## **SUMMARY AND CONCLUSIONS**

Analysis of the behavior of credit unions with relatively unstable parent organizations indicates that they have made appropriate adjustments in their reserves and loan portfolios to compensate for the increased instability risks associated with the employment volatility of their parent organization. The adjustments have allowed these credit unions to maintain loan delinquency rates comparable to those obtained by credit unions with relatively more stable parent organizations. When the comparative performance of these two groups of credit unions is measured by the level of monetary benefits delivered their to members, no significant differences are found.

**TABLE 1**  
**Parent Organization Industries With Declining Employment Trends.**  
**Relatively Unstable Parent Organizations Designated As Those With CV > 4.947.**

SIC Code	Parent Organization Industry	Number Of Credit Unions	Coefficient Of Variation Of Monthly Employment
SIC 213	Primary Metals	319	9.013
SIC 209	Petroleum Refining	229	6.975
SIC 215	Machinery, Except Elect	332	5.435
SIC 215	Fabricated Metal	411	4.357
SIC 202	Textiles	82	4.116
SIC 216	Electrical Machinery	366	3.452
SIC 208	Chemicals	397	2.632
SIC 203	Apparel	59	2.455
Weighted Average Coefficient Of Variation (CV)			4.947

**TABLE 2**  
**Parent Organization Industries With Expanding Employment Trends.**  
**Relatively Stable Parent Organizations Designated As Those With CV < 4.736.**

SIC Code	Parent Organization Industry	Number Of Credit Unions	Coefficient Of Variation Of Monthly Employment
SIC 401	Wholesale	120	1.916
SIC 402	Retail	235	2.318
SIC 702	Federal Government—Military	205	2.456
SIC 701	Federal Government—Civilian	790	2.747
SIC 703	State Government	345	3.310
SIC 205	Furniture & Fixtures	46	3.817
SIC 704	Local Government	943	4.395
SIC 204	Lumber & Wood Products	113	5.125
SIC 707	Educ—Elem. & Secondary	1,055	6.832
SIC 706	Educ—Colleges & Univ.	236	11.278
Weighted Average Coefficient of Variation (CV)			4.736

**TABLE 3**  
**Member Benefits Generated By Credit Unions With**  
**Relatively Unstable And Stable Parent Organizations**

	Credit Unions With Unstable Parent Organizations	Credit Unions With Stable Parent Organizations	Difference (1) - (2)	
			T-Value	P-Value
Number Of Credit Unions	835	2,587		
Number Of Members	3,527	6,186	-4.4256	.0001
Credit Unions Size—Avg Total Assets	\$13,292,154	\$20,428,172	-3.9309	.0001
Borrower-Saver Treatment Index ( <i>DI</i> )	-.5670	-.5120	-1.6240	.1045
Total Member Benefits:				
Per Member	\$42.86	\$39.06	1.5945	.1110
Per Dollar of Assets (Cents/\$ Assets)	\$0.02	\$0.01	1.2460	.2130

**TABLE 4**  
**Safety Reserves For Credit Unions With Relatively**  
**Stable And Unstable Parent Organizations**

	Credit Unions With Unstable Parent Organizations	Credit Unions With Stable Parent Organizations	Difference (1) - (2)	
			T-Value	P-Value
Total Reserves (% Of Total Assets)	4.93%	4.58%	2.7690	.0057
Undivided Earnings (% Of Total Assets)	5.70%	4.91%	4.2386	.0001
Allowance For Loan Losses (% Of Loan Volume)	1.12%	0.80%	5.1861	.0001
Allowance For Investment Losses (% Of Investment Volume)	0.14%	0.09%	1.8046	.0714



**TABLE 5**  
**Types Of Loans Made By Credit Unions With**  
**Relatively Unstable And Stable Parent Organizations**

Types Of Loans Made (% Of Total Assets)	Credit Unions With Unstable Parent Organizations	Credit Unions With Stable Parent Organizations	Difference (1) - (2)	
			T-Value	P-Value
Unsecured Loans	17.31%	21.52%	-6.1300	.0001
Auto Loans	33.10%	31.71%	1.9569	.0504
Real Estate Loans	7.47%	8.96%	-3.1793	.0015
Commercial Loans	0.08%	0.13%	-1.4689	.1420
Non-Commercial Loans*	11.97%	12.25%	0.2286	.8192
All Other Loans (Purchased/Nonmembers)	0.32%	0.47%	-1.4098	.1588
Total Loans	67.92%	72.31%	-6.7608	.0001

\*Includes "share secured" loans to members.

**TABLE 6**  
**Loan Delinquency Rates For Credit Unions With**  
**Relatively Unstable And Stable Parent Organizations.**

Delinquent Loans (% Of Total Assets)	Credit Unions With Unstable Parent Organizations	Credit Unions With Stable Parent Organizations	Difference (1) - (2)	
			T-Value	P-Value
2 to less than 6 months	1.14%	0.97%	1.4764	.1402
6 to less than 12 months	0.45%	0.44%	0.2494	.8031
12 months and longer	0.38%	0.35%	0.9005	.3680
Total Delinquent Loans	1.97%	1.75%	1.5281	.1268

## ENDNOTES

1. Most other financial institutions service a more diverse group of customers. This may enable instability risks to be spread because changes in their customers' demands for credit and deposit services are less likely to occur in concert with one another.
2. Associational and residential credit unions may also experience a coincidence of instability risks associated with their parent organizations, but the linkages are likely to be less direct and more difficult to identify empirically. For these reasons, and because associational and residential credit unions are relatively less numerous, they are not included in the empirical analysis that follows.
3. Credit unions are explicitly nonprofit organizations, but theoretical models of credit union behavior have been developed around revenue maximization, cost minimization, and profit maximization objectives. These aspects of credit union behavior are not examined in this paper.
4. Nonpecuniary benefits such as waiting time, convenience, courtesy, and information disclosure are ignored.
5. The individual rates paid by each credit union on the four major types of savings instruments (regular share, share draft, retirement, and share certificate accounts) were weighted by the relative dollar volume of shares in each type of account to determine a weighted average dividend rate (*WADR*).
6. Each credit union's *WAMDR* was computed using the best alternative market loan rates available outside the credit union on similar types of savings instruments (i.e., regular savings and time deposits by banks and S&Ls, now accounts, retirement accounts, and certificates of deposit). The same weighting scheme was used to compute the *WADR* and *WAMDR* for each credit union.
7. Balance sheet information for each credit union was used to calculate a weighted average of the loan rates charged on the various types of loans provided by each credit union (new auto, personal, first and second mortgage, and real estate).
8. Each credit union's *WAMLR* was computed using the best alternative market loan rates available outside the credit union on similar types of debt (new auto loans, 120 month mobile home loans, 24 month personal loans, and real estate loans by banks, S&Ls, and finance companies). The same weighting scheme was used to determine the *WALR* and *WAMLR* for each credit union.
9. Based on the common bond requirement, four groupings of credit unions are possible—occupational, associational, community, and multiple group. The sample of credit unions examined in this study is limited to occupational credit unions because (1) the financial well-being of the members of an occupational credit union is closely associated with the financial stability of the credit union's parent organization, and (2) occupational credit unions account for the majority of U.S. credit unions (about 73 percent) in 1989.

## REFERENCES

- [1] Black, H. and Duggar, R.H., "Credit Union Structure, Growth and Regulatory Problems," *Journal of Finance* 36, May 1981, pp. 529-538.
- [2] Flannery, M.J., *An Economic Evaluation of Credit Unions in the United States*, Report No. 54, February 1974, Boston: Federal Reserve Bank of Boston.
- [3] Flannery, M.J., "Discussion: Papers and Proceedings," Thirty-Ninth Annual Meeting, American Finance Association, *Journal of Finance* 36, May 1981, pp. 554-556.
- [4] Gambs, C.M., "Discussion: Papers and Proceedings," Thirty-Ninth Annual Meeting, American Finance Association, *Journal of Finance* 36, May 1981, pp. 552-554.
- [5] Navratil, F.J., "An Aggregate Model of the Credit Union Industry," *Journal of Finance* 36, May 1981, pp. 539-549.
- [6] Patin, R.P. and McNiel, D.W., "Benefit Imbalances Among Credit Union Member Groups: Evidence of Borrower Dominated, Saver Dominated, and Neutral Behavior?" *Applied Economics* 23, April 1991, pp. 769-779.
- [7] Patin, R.P. and McNiel, D.W., "Member Group Orientation of Credit Unions and Total Member Benefits," *Review of Social Economy* 49, Spring 1991, pp. 37-61.
- [8] Peterson, R.L., "Discussion: Papers and Proceedings," Thirty-Ninth Annual Meeting American Finance Association, *Journal of Finance* 36, May 1981, pp. 550-552.
- [9] Smith, D.J., Cargill, T.F., and Meyer, R.A., "An Economic Theory of a Credit Union," *Journal of Finance* 36 May 1981, pp. 519-528.
- [10] Smith, D.J., "A Theoretic Framework for the Analysis of Credit Union Decision Making," *Journal of Finance* 39, September 1984, pp. 1155-1168.
- [11] Smith, D.J., "A Test for Variant Objective Functions in Credit Unions," *Applied Economics* 18 September 1986, pp. 959-970.
- [12] Smith, D.J., "Credit Union Rate and Earnings Retention Decisions Under Uncertainty and Taxation," *Journal of Money, Credit, and Banking* 20, February 1988, pp. 119-131.
- [13] Taylor, R.A., "The Credit Union as a Cooperative Institution," *Review of Social Economy* 29, September 1971, pp. 207-217.
- [14] Walker, M.C. and Chandler, G.G., "On the Allocation of the Net Monetary Benefits of Credit Union Membership," *Review of Social Economy* 35, October 1977, pp. 159-168.