



Credit union industry structure: an examination of potential risks

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Abstract

The Credit Union Industry has undergone significant changes over the past decade. With more than 11,500 credit unions now serving 74 million members, it continues to attract shareholders/depositors because of its generally lower cost services and higher returns on savings. The Credit Union Membership Access Act of August 1998 should help membership continue to grow. At the same time, however, shareholders/depositors should be aware of the unique structure of the credit union industry. This paper examines the inherent risk as a result of the interrelationships among its components. © 1998 Elsevier Science Inc. All rights reserved.

1. Introduction

On August 7, 1998, the Credit Union Membership Access Act was signed into law. Its passage culminated a 20-month campaign to guarantee the right of consumers to select a financial institution. The more than 11,500 credit unions which serve 74 million consumers, have a decided advantage over commercial banks in that the credit unions enjoy a tax exempt status. Moreover, in 1982, federal regulators permitted credit unions to expand from a common membership of a single “like” organization to that of multiple membership groups.

Because of this recent change, it is important for depositors to understand more fully the structure of the credit union industry. While admittedly small in comparison to the banking

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industry (\$361 billion credit union industry versus \$6 trillion in assets held by banks), the credit union industry has become more aggressive in its offerings. In addition, the structure of the credit union industry is unique compared to that of the banking industry. “Natural person credit unions” (NPCUs), are tax exempt financial cooperatives, whereby the provider of inputs (saver) is also the user of outputs (borrower). These financial cooperatives that serve depositors/shareholders are, in turn, served by forty corporate credit unions. The “corporates” themselves are also nonprofit, cooperative institutions which are owned by, take deposits from, and provide liquidity, investment and payment services for their member NPCUs. The corporates, in turn, are tied into the U.S. Central Credit Union, which is itself a corporate but also serves as a liquidity facility for other corporates.

The stability of the corporates should be important to anyone who is a member and/or depositor of an NPCU. As depositors/shareholders, NPCU members need to be aware of the interdependence between NPCUs and the corporates, and consequently of the soundness of the corporates. Thus, the purpose of this research is to examine the level of exposure that corporate credit unions pose due to the structure of the credit union industry, and to examine the implications for corporate credit union capital standards. Section 2 provides additional background material and a review of the literature. Section 3 presents data regarding corporate credit union capital. Section 4 reviews corporate credit union investment practices. Section 5 describes the potential exposure. The last section discusses the conclusions.

2. Background and literature review

The credit union industry is hierarchically structured. At the base of the system is approximately 11,500 NPCUs. The NPCUs comprise the membership of the middle tier, that is, forty corporate credit unions which are geographically dispersed throughout the United States. The corporate credit unions define the membership of U.S. Central Credit Union, which sits atop the structure.

NPCUs invest their surplus loanable funds in their regional corporate credit union as either deposits or membership capital share accounts. The regional corporates then invest surplus funds in U.S. Central Credit Union, which invests in liquid financial instruments. Each group is heavily invested in the level above it. At the end of 1996, corporates had half of their total investments or \$13.6 billion invested in U.S. Central. In turn, the NPCUs had \$23.2 billion invested in the corporates. The typical NPCU had 42.5 percent of its investment portfolio in corporates, amounting to 75 percent of its capital. The average investment percentage is higher for smaller institutions (National Credit Union Administration, 1996; U.S. Department of the Treasury, 1997).

This type of structure, where one group is heavily invested in the level above it, involves a significant potential exposure for the NPCUs. As noted by Carnell (1997), both capital and liquidity are exposed; if a corporate suffers losses on its investment portfolio, and if these losses exceed the amount of its capital, then member institutions must write-down their investments in the corporate. And, if a corporate’s capital is impaired by investment losses, then it will have more difficulty raising funds to satisfy members’ liquidity needs.

In early 1995, events raised concerns about the health of the corporates. When short-term

interest rates rose significantly throughout 1994 and early 1995, almost all of the corporates suffered investment losses. The U.S. General Accounting Office (1995a) estimated that corporates, in aggregate, had \$600 million in unrealized investment losses or 62% of the aggregate capital base. According to Tolen Information Services, five corporates became market value insolvent. Two failed as a result of these losses: Federation de Coop Credit Union, Puerto Rico, September 1994 and Capital Corporate Federal Credit Union, Lanham, MD, January 1995.

The corporate credit union network is subjected to increasing levels of competitive stress. In recent years, according to Black et al. (1994), a growing number of NPCUs and even regional corporates have elected to invest directly in the market instead of in their corporate credit unions. This disintermediation particularly affected the largest corporate, U.S. Central Credit Union, which has shrunk at an eight percent annual rate since 1991. The U.S. General Accounting Office (1994) reported that the U.S. Central Credit Union suffered a 28% run-off of assets between year-end 1993 and June 30, 1994. Recent mergers among several corporates came about in reaction to these competitive pressures. It is likely this pattern will continue to follow that of the banking sector as outlined by Winton (1997) and Houston and Ryngaert (1994). As the credit union industry matures, it is expected that more consolidation of their activities for synergistic and cost saving purposes will occur, subject to legal restrictions.

Due to the structure of the credit union industry, should any instability arise among the corporates, it could translate into more widespread problems for the industry. This risk arises from the fact that a significant amount of NPCU funds are held by the corporates. Nine percent of the average NPCU's assets are invested in a corporate credit union. These funds are at risk if the corporate suffers a loss. In fact, as outlined by the U.S. General Accounting Office (1995b), member NPCUs lost \$37 million with the failure of Capital Corporate Federal Credit Union (CapCorp) even after the National Credit Union Share Insurance Fund (NCUSIF) guaranteed almost \$700 million of NPCUs' uninsured deposits in CapCorp. Previous studies such as those by Fried et al. (1993) and Stiroh (1994), which focused on U.S. credit unions and thrifts, have not addressed this problem.

Since 1980, 130 countries around the world have experienced significant banking problems, according to Lindgren et al. (1996). In the U.S., the saving and loan crisis cost taxpayers an estimated \$150 billion (Barth et al., 1995). Kane and Hendershott (1996) found that the NCUSIF became economically insolvent in the 1980s. The NCUSIF, however, was able to rebuild its reserves without losses of taxpayer funds. The NCUSIF's problems were limited by cross-industry guarantees and the industry's mutual structure.

Credit unions must deposit 1% of their insured deposits with the NCUSIF and must adjust this deposit as their insured deposit base changes. According to the U.S. General Accounting Office (1991), if the reserve ratio (equity to insured deposits) for the NCUSIF falls below 1%, credit unions are required to expense the difference between the reserve ratio and the one percent deposit. Also, they must replenish their deposit back to its one percent level. Since this deposit is at risk if other credit unions take significant risk, it is imperative that all credit unions monitor this risk. At the same time, however, the mutual structure of credit unions reduces the incentive for management to take on greater risk. Thus, agency questions arise where management is more conservative than its owners. While this topic is beyond the

scope of this paper, it should be noted that management's ability to benefit from risk taking is constrained by the ability of a credit union to convert from its mutual structure to stock organization. The National Credit Union Administration (NCUA) rules require 50% of all eligible members to approve a conversion of a credit union to another charter type. Further, it limits the ability of management and directors to benefit from the conversion.

Theoretical literature has examined several models of NPCU behavior, but has devoted very little attention to the corporates. Four competing objectives functions have been assigned to credit union behavior as follows: Pearce (1984) posits growth maximization; Fried and Lovell (1993) assume maximization of services with respect to a resource constraint; Murray and White (1980) suppose efficiency maximization; and, Smith (1984) posits securing net gains to savers and borrowers through better than market rates.

Research by Kane and Hendershott (1996), however, suggest that the current weak link in the credit union system is the corporate credit union network. They state that low levels of capitalization at corporate credit unions creates a moral hazard, creating incentives for management to take on greater risk. This paper builds upon their research by examining the interrelationships between NPCUs and the corporates, instead of focusing solely on the behavior of natural person credit unions or corporate credit unions.

3. Corporate credit union capital data

Until recently, corporates have been thinly capitalized. In fact, at year-end 1995, the average leverage capital ratio for the corporate system was only 2.2%. Nonetheless, the U.S. General Accounting Office (1994) reported that all of the corporates met a regulatory risk-based capital standard. In reaction to the problems in 1995, the National Credit Union Administration (the federal regulatory agency) instituted two important changes to strengthen the capital of the corporates to be effective in 1998. First, a risk-based capital standard was replaced (and abolished) with a leverage standard; each corporate must now meet a 4% capital-to-assets test. Second, "membership capital share deposits" (MCSD) now count as primary capital toward the leverage standard, provided that there is a contractual requirement of three-years notice prior to withdrawal.

The new standard accentuated the interdependence within the pyramid structure. NPCU investments in a corporate still face risk of loss should the corporate face significant losses in its investment portfolio. Any losses would first be written off against "core capital," the equity capital not including MCSD. If a corporate's trouble is severe enough to exhaust its core capital, the MCSD would have to be written down. Conceivably, greater losses could even force a write-down of NPCU deposits in the corporate. Of course, any write-down of deposits or investments in a corporate would be reflected by a drop in the investing NPCU's capital. While deposits are protected up to \$100,000, for the majority of the corporates with federal deposit insurance, this amount is small compared to the level of investment of most NPCUs. Corporate core capital, then, is the essential protection for NPCU investments in corporates.

Table 1

Credit Union Investment in Corporate Credit Unions as of December 31, 1996

Median Percent of:	Investments, %	Assets, %	Capital, %
All Corporate Credit Unions	75.8	68.6	522.8
All Natural Person Credit Unions:	42.5	9.0	75.0
Assets Under \$10 Million	55.5	11.4	85.6
\$10 to \$50 Million	33.4	7.6	69.5
\$50 to \$100 Million	24.9	6.0	57.8
Over \$100 Million	17.9	4.6	44.4

Source: Credit Union Call Reports (Form 5100) submitted to the National Credit Union Administration.

Table 1 shows the funding structure of the corporates. In aggregate, only 2.7% of assets are backed by core capital. Some corporates have significantly thinner core capital as shown in Tables 2 and 3.

4. Corporate credit union investment practices

Since the financial marketplace is becoming increasingly complex, financial institutions need to have an effective risk-management system in place. For corporate credit unions, having an adequate asset-liability management system in place is particularly important given the potential interest rate risk these institutions face. The ability to manage interest rate risk has important implications for meeting the liquidity needs of natural person credit unions.

The available evidence suggests that many corporate credit union portfolios are not adequately hedged for interest rate risk. On average, as of June 1996, corporate credit unions have a negative gap position for repricing intervals up to 3 years. Gap analysis examines the difference between the repricing of a financial institution's assets and liabilities. Typically, a financial institution will calculate its gap position for several different maturity periods. A negative gap exists when short-term liabilities exceed short-term assets. The average one-year gap position for corporate credit unions is -3.3% of average earning assets and the gap position is -4.5% of average earning assets for a repricing interval of 3 years and less. As

Table 2

Aggregate Corporate Credit Union Balance Sheet Millions of Dollars as of December 31, 1996

Assets	\$48,024
Cash and Cash Equivalents	2,260
Loans and Investments	45,270
Other Assets	494
Liabilities	\$48,024
Member Deposits	37,698
Other Borrowing	6,760
Membership Capital Share Deposits	2,280
Other Capital	1,286

Source: Credit Union Call Reports submitted to the National Credit Union Administration.

Table 3

Corporate Credit Union Capital-to-Assets Ratios: Distribution as of December 31, 1996

Core Capital*-to-Assets Ratio	Number of Institutions	Aggregate Assets (\$ in Billions)
1.5%	1	17.9
2%–3%	11	4.9
3%–4%	20	23.7
4%–5%	9	1.5

* Capital does not include “member capital share deposits.”

Source: Credit Union Call Reports submitted to the National Credit Union Administration.

an example, Southwest Corporate Federal Credit Union, the third largest corporate credit union, has a negative one-year gap position of 20.4% of average earning assets. For repricing intervals up to 3 years, the gap position is -34.3% . In fact, 12 corporate credit unions have 3-year gap repricing intervals in excess of 10% of average earning assets; 7 corporates had negative one-year gap positions exceeding 20% of average earning assets; and, one corporate had a negative one-year gap of 40%.

This negative gap position shows that interest rates paid on the liabilities of these institutions will react more quickly to changing interest rates than those of their assets. Thus, corporate credit unions, in aggregate, may be assuming interest rate risk when interest rates rise. Unless derivatives are properly employed, this maturity mismatch could lead to liquidity problems.

In conjunction with the above, Black (1994) reported that corporate credit unions are assuming more risk in their investment practices and their portfolios than in the past. Competition for credit unions' investable funds will only create greater incentives for corporate credit unions to take on more risk, and will increase the use of complex investment instruments and strategies. CapCorp, for example, had \$63 million in CMOs in September 1990; by September 1994, its holdings of CMOs exceeded \$1 billion. Obviously, this raises concerns regarding the ability of corporate credit unions to manage more complex portfolios, and the ability of NCUA to evaluate and supervise the corporates' risk-taking. The Black (1994) report also found that only two corporate credit unions were properly using derivative products. Additionally, it noted that line managers at corporates agreed that natural person credit unions and even some corporates had little understanding of the risk and pricing of many financial instruments. This lack of management expertise could expose institutions and the NCUSIF to significant losses.

5. Potential exposure

Sensitivity analysis was performed to examine NPCU exposure to the corporates. In separate simulations, each NPCU was assumed to suffer a (1) 5%, and (2) 10% loss on its investment in a corporate. The two simulations supposed that each NPCU's capital was reduced by five/ten percent of its investment in a corporate. The calculations used end-of-1996 “call report” data on the balance sheets of every NPCU (as reported to the NCUA

Table 4
 Simulated Impact of a Loss on Natural Person Credit Union Funds Invested in Corporate Credit Unions

Credit Unions Whose Capital-to-Assets Ratio Could Fall to:	Five Percent Loss		Ten Percent Loss	
	Number	Assets (\$ millions)	Number	Assets (\$ millions)
Under 0%	22	20	61	90
0% to 2%	37	100	62	270
2% to 4%	65	240	177	1,170

Note: Simulation based on December 1996 Credit Union Call Report data.

semi-annually by the NPCUs). Then, an institution was identified as having significant exposure if the write-down could have reduced its capital to below four percent of assets (based on standards set in the FDIC Improvement Act (FDICIA) of 1991 for federally-insured banks and thrifts). According to FDICIA, a bank is undercapitalized if its leverage ratio falls below 4 percent. Congress has recently mandated FDICIA-like capital standards on NPCUs beginning in 2000.

This analysis does not intend to suggest that all corporate credit unions could suffer material losses at the same time, leading to broad-scale losses for NPCUs. It ignores the fact that institutions would certainly react to shore up their positions if they suffer investment losses. The point of the simulation is only to consider the number of institutions that have enough exposure to be significantly impacted in case any corporate credit union suffers a major loss. Supporting this approach, the U.S. Department of the Treasury (1997) commented that given the relative homogeneity of the balance sheet of corporate credit unions, concentration risk associated with a single asset class may be exacerbated within the corporate network.

The results in Table 4 suggest that a large number of NPCUs might, in fact, have meaningful exposure to corporates. Without offsetting adjustments, NPCU capital could fall below a 4% standard in 124 institutions with \$0.4 billion of assets under a 5% write-down of investments in corporates, and in 300 institutions with \$1.5 billion of assets under a 10% write-down. A 5% write-down could exhaust the capital of 22 institutions with \$20 million of assets, while a 10% write-down could wipe out the capital of 61 institutions with \$90 million of assets.

The impact of a loss on a NPCU's investment in a corporate apparently would fall disproportionately on smaller NPCUs, which are more reliant on the corporates for investment services. Funds held by corporates account for most of the investment portfolios of half the NPCUs with less than \$10 million in assets, compared to less than one-fifth for half of the NPCUs over \$50 million in assets. Under either write-down, most of the NPCUs whose capital could become inadequate have less than \$10 million of assets. If larger credit unions continue to have less exposure to the corporates, then the widespread consolidation movement within the industry may help to alleviate this exposure. A 1998 decision by the United States Supreme Court in *National Credit Union Administration v. First National Bank & Trust Co.* (1998) slowed this consolidation by limiting future mergers of occupation-or-association-based federal credit unions to only those which result in membership from a

single group. The 1998 Supreme Court decision was overturned by the Credit Union Membership Access Act of 1998, which was signed into law in August 1998.

6. Conclusions

The findings of this analysis suggest that the structure of the credit union industry imposes interlocking risks on the system. The soundness of every level can be affected by instability of a level above it. The forty corporate credit unions depend on the U.S. Central Credit Union, and each of the corporates has an average of 300 credit union members, ranging from 27 to 1,263, which depend on it.

The liquidity role of each corporate can be especially critical if a strong economy drives up loan demand and interest rates at the same time, which is not an unlikely circumstance. As NPCUs draw down their reserves at corporates to meet local loan demand, corporates can be forced to liquidate investments. At the same time, the higher interest rates could undermine the values of corporate longer-term investments unless they are adequately hedged. If corporates suffer losses when they sell investments to satisfy the liquidity demands, their capital could become impaired. In this case, corporates could be unable to meet the NPCUs' liquidity needs. If the U.S. Central Credit Union becomes illiquid for the same reason, there could conceivably be much broader liquidity problems in the credit union industry. In many ways, this structure is similar to the pyramiding structure of bank reserves under the old national banking system, which suffered from periodic liquidity crises, financial panics and banks failures. Thus, should any single corporate become destabilized, its credit union members likewise could be destabilized.

While this paper represents a simulation, some of the losses actually occurred. As noted by Johnson (1995), 247 of the 483 credit union members of the larger corporate that failed in 1995 suffered resultant losses. Therefore, the existing structure poses potential systemic risk in the credit union system. Given the potential for losses, shareholder (depositor) members of any natural person credit union should be aware of the level of investment of their institution in a corporate credit union, and of the credit union's dependence on the corporate for liquidity. They need to monitor the capital and risk exposure of any corporate with which their institution deals. Since every credit union is owned by its members, the membership has the right and responsibility, acting through the board of directors, to control this exposure. The existence of share insurance for credit union members, however, tends to reduce the incentive to monitor the behavior of their credit union.

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