

*This article was published online on March 11, 2020  
Final version July 23, 2020*

*Essays in*  
**ECONOMIC &  
BUSINESS  
HISTORY**


*The Journal of the Economic & Business History Society*



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ISSN 0896-226X  
LCC 79-91616  
HC12.E2

# CREDIT UNION CAPITAL, INSOLVENCY, AND MERGERS BEFORE AND AFTER SHARE INSURANCE

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*From their beginnings in 1908, credit unions have differed from banks. One fundamental difference was that share accounts in credit unions, unlike bank deposits, were not debt. Credit unions could delay and discount payments. Thus, during the Great Depression, when thousands of banks failed, no credit unions did. Federal insurance had larger effects on credit unions than on banks. In 1934, insurance turned bank deposits from risky debt into riskless debt. In 1971, insurance turned credit union share accounts from risky equity into riskless debt. Thus, insurance introduced insolvency risk to credit unions. To reduce insolvency risk, regulators encouraged mergers. They also discouraged new credit unions. These regulatory responses moved the credit union industry from high entry and low merger rates to near-zero entry and high merger rates. We further argue that while major bank regulations almost always followed banking crises, major credit union regulations usually followed prosperity among credit unions.*

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## **Introduction and Overview**

For decades, credit unions have been an important component of consumer finance. Credit unions first appeared in the United States in 1908. They began by providing savings vehicles and consumer loans, typically to workers with modest incomes. The credit union industry grew moderately during its first two decades. Then came the Great Depression. While thousands of banks failed in the early 1930s, credit unions suffered less and none failed.

To boost confidence and reduce risks in banks, starting in 1934, accounts at banks—but not at credit unions—received federal insurance. Nevertheless, from the early 1930s through the early 1940s, the number of banks stagnated and the number of credit unions more than tripled. By the mid-1950s, there were more credit unions than banks, although on average they were much smaller. When federal insurance came at last to credit unions in 1971, credit unions numbered well over twenty thousand. Over the decades, credit unions garnered larger and larger, but still quite small, fractions of the markets for consumer savings and consumer loans. By 2000, for example, credit unions had seven percent as many assets as banks, but 18 percent as many consumer loans as banks. Nonetheless, having over 100 million members and over \$1 trillion of assets testifies that members value their credit unions (NCUA 2018c).

Credit unions have always differed fundamentally from banks. While the wide-ranging financial deregulations since the 1970s swept away many differences between credit unions and banks, there are still substantive differences in incentives, performance, and regulation.

Credit union regulations changed at different times and for different reasons than bank regulations. Since the early 1900s, regulation of credit unions and banks has evolved, sometimes gradually adapting to changes in the financial environment, and sometimes with Darwinian punctuations. Major changes in banking regulations tended to reflect recent major events, like crises. For example, the economic calamity and banking crises of the early 1930s led directly to federal insurance for deposits at banks and at thrift institutions, to the separation of commercial from investment banking, to the prohibition of interest-bearing checking accounts, and to other, seismic shifts.

## Credit Union Capital and Insurance

In contrast, major changes in credit union regulations typically were not reactions to credit union problems. For example, it was not until 1971, decades after the banking crises of the early 1930s, that member accounts at credit unions became federally insured. At that time, the credit union industry was healthy and growing, and the US economy had enjoyed years of steady prosperity.

Capital requirements provide another example of this pattern. Regulators made banks' capital requirements explicit and higher in the latter 1980s and early 1990s on the heels of banking crises. Explicit, higher requirements for credit union capital, however, did not follow crises but, rather, flowed from compromise legislation necessitated by a US Supreme Court ruling about regulators' authority.

To help illuminate the rough, alpine road to current regulations, we recount some important features and repercussions of regulations (and laws) that governed credit unions' shares and reserves. We focus on the especially consequential effects of federal share insurance. Although federal insurance made credit unions more like banks in some respects, fundamental differences remain.

The introduction of share insurance brought a new risk to credit unions, a risk that banks had always faced: insolvency risk. Banks' deposits were always debt, or fixed liabilities. As a result, banks could, and sometimes did, become insolvent and fail. That was true both before and after insurance. In contrast, insurance turned credit union shares from largely equity-like into largely debt-like. Before insurance, sufficiently large losses in the value of their assets (e.g., loans) could mean that credit unions would not be able to pay their shares at par. However, since the value of the equity-like shares could fall along with the value of the credit unions' loans, members could suffer losses individually, but the credit unions themselves would not become insolvent or "fail." Members could vote to voluntarily liquidate an unsatisfactory credit union, but regulators did not require its liquidation.

After insurance, credit unions faced with losses in the value of their assets could no longer reduce the value of members' shares. Shares that were once largely equity-like became largely debt-like. Large losses in the value of credit union assets would no longer result in reductions in the value of members' shares, but would render the credit unions themselves

insolvent. If regulators concluded that, in the foreseeable future, individual credit unions would bear sufficiently large losses that they could not repay their shares in full, then regulators would carry out “involuntary” liquidations (or mergers) of those credit unions. Thus, by protecting the value of credit union members’ shares, insurance created a new risk for credit unions: insolvency, or failure, risk.

We argue that regulators responded with two main offsets to the risks that share insurance spawned. First, to reduce the *ex-ante* probabilities of insolvencies of credit unions, as well as the likely *ex-post* losses to the share insurance fund, regulators imposed higher standards for reserves and imposed numerous other rules and requirements. Second, regulators allowed, and even advocated, mergers as an exit route for both healthy and troubled credit unions. Urging merging resulted in a dearth of voluntary liquidations of credit unions, which had been common before share insurance. Having troubled credit unions merge into healthier ones reduced the numbers of *ex-post* failures and thus losses to the insurance fund. To facilitate more mergers, regulators liberalized their rules about credit union membership.

In the same vein, after insurance, regulations took into account that new and small credit unions were much more likely to become seriously troubled. The tilt of these regulations made it more difficult for these credit unions to continue, or even to get started. The combination of policies that made it easier for credit unions to merge and the tilt of regulations after insurance led the numbers of mergers to soar and the numbers of new credit unions to plummet. Independently, substantial economies of scale were pushing the industry to consolidate. The changes in merger policies and in entry and other regulations added considerable impetus to having many fewer, much larger credit unions.

The next section analyzes the ownership returns and risks for members and the risks to their credit unions before federal insurance. We then describe how insurance turned members’ share accounts from equity-like to debt-like assets. This section also explains that, in doing so, insurance simultaneously introduced solvency risk to credit unions. The following section identifies regulators’ response to insolvency risk by discouraging both entry and voluntary liquidations and by encouraging mergers. The final section briefly summarizes and concludes.

### **Credit Unions Before Insurance**

Patterned after similar institutions in Germany and Canada, the first US credit union appeared in 1908 in New Hampshire. Credit unions began as lending clubs that accepted funds from members and made short-term loans to their members. Regulation soon followed innovation. New Hampshire and Massachusetts (1909), and New York, Wisconsin, and Texas (1913) were the first US states to regulate credit unions. Early credit union laws provided a cooperative, or democratic, framework to promote saving by those with modest means and to provide them loans at low interest rates (J. Carrol Moody and Gilbert C. Fite 1984). By 1920, ten states had laws specific to credit unions. By 1935, forty-one states had them. Rather than recodify the wheel, early on the credit union laws of most states were patterned after New York's 1913 law. Beginning in the 1920s, the "Uniform Credit Union Law" proposed by Roy F. Bergengren provided a template for state credit union laws (Bergengren 1935). We briefly summarize these and other major credit union laws in Appendix One.

#### *Membership and ownership*

Since it passed the Federal Credit Union (FCU) Act in 1934, the US Congress revised it occasionally, most recently in 2013. Before the FCU Act, only states chartered credit unions. The Act established a federal charter and defined a credit union as a "cooperative association organized ... for the purpose of promoting thrift among its members and creating a source of credit for provident or productive purposes" (US Congress 2013).<sup>2</sup>

Members could start, or later join, a credit union by purchasing shares at par (e.g., for \$10) (James B. Morman 1920; Arthur H. Ham and Leonard G. Robinson 1923, 15; M.R. Neifeld 1931). Credit unions largely accepted funds from and could make loans to only their members. Each credit union's charter delineated its field of membership (FOM). Members needed to be in their credit union's FOM, which reflected a "common bond," such as the employees of a company, the members of a church or

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<sup>2</sup> The FCU Act refers to United States Code (U.S.C.) Title 12, §1752-1795. The analogous national charter for banks began in 1863.

other group, or the residents of a specific geographic area, such as a neighborhood. Early on, the vast majority of credit unions' FOMs were associated with employers, members had fewer and longer job tenures, and multiple-job households were less prevalent. As a result, households were usually in a single, if any, FOM. That is not the case today. Since the early 1980s, the great liberalization of FOMs and the increase in the number of employers within each household's lifetime greatly increased the number of FOMs per household.

Credit union shares bore some similarities and differences compared with those of other corporations, such as banks. In (commercial) banks, shareholders own the institutions and have votes in elections of directors equal to the number of shares of common stock owned. In contrast, credit union members had one vote per member in elections for boards of directors, regardless of the number of shares owned. Unlike banks, credit unions are exempt from both federal and state income taxes. The competitive advantages that flowed from these tax exemptions likely play a key role in accounting for the growth of credit unions relative to banks over the decades, but they are not particularly germane here.<sup>3</sup>

### *Shares at risk*

Like bank shares and deposits, credit union shares provided funds for loans. However, credit union shares differed both from corporate (including bank) shares and from bank deposits. They also differed from any deposits that credit unions offered. Unlike corporate shares, credit union shares could normally be acquired or redeemed at the credit union at par (e.g., for \$10). Unlike bank deposits, credit union shares were not (defaultable) debt.

A template for credit union bylaws specified that "the money on one or more shares may be withdrawn ... (by a) member".<sup>4</sup> Being able to withdraw (or redeem) shares at par clearly distinguished them from shares

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<sup>3</sup> Mutual savings banks and mutual savings and loans (thrifts) were somewhat similar to credit unions. Among their differences were that those mutuals generally granted members with higher deposit balances more votes in Board of Director elections and that they lost their income tax exemptions in the latter 1900s. The biggest distinction was that only credit unions had defined FOMs.

<sup>4</sup> Florence Evelyn Parker 1927: Credit Union Bylaws, Article IX: 7.

## Credit Union Capital and Insurance

of corporate stock. While corporations and owners of their shares may sell their shares, corporations are not obligated to buy back their shares, whether at a pre-set price or even at a “market” price.

In addition to shares, some credit unions also offered deposits, which were somewhat akin to “preferred shares”, although these were less significant sources of funds. Deposits paid pre-set interest rates periodically, for example monthly or quarterly.<sup>5</sup> They were normally redeemable upon demand at par. Like shares, however, credit union deposits had limited rights to withdrawals. The Parker template for credit union bylaws, for example, stipulated that deposit “withdrawals shall be honored in the order in which the notice therefor is filed (as the funds therefor become available).”<sup>6</sup>

The features of credit union deposits highlight some of the risks borne by shares. Rather than the pre-set rates promised on credit union deposits, dividends on shares tended to be paid annually and tended to vary, for example, with credit union earnings. In addition, deposits had higher priority than shares. If withdrawals were problematic, credit unions could not pay any share dividends or allow any share withdrawals until they first paid the pre-set interest promised on deposits and allowed deposit withdrawals—at par. Having uncertain dividends and lower priority, shares were riskier. Presumably reflecting the recognition of greater risk, dividends on shares averaged slightly more than interest on credit union deposits (Lincoln Clark 1944, 61; CUNA 1975).<sup>7</sup>

In normal circumstances, members could withdraw credit union shares on demand and at par. The same was true for bank deposits. Before insurance, however, both bank deposits and credit union shares were risky: Either might repay at less than par. The important difference was that bank deposits were debt and shares were not. The important consequence was that repaying at less than par would lead to the closure of banks, but could leave credit unions open.

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<sup>5</sup> *Ibid.*, Article X: 1.

<sup>6</sup> *Ibid.*, Article X: 4.

<sup>7</sup> Credit union dividend rates averaged about five percent during the early 1930s (Lewis A. Froman 1935). Four percent was a common interest rate on credit union deposits at the time (Parker 1935, 66).



A bank that could not redeem deposits on time and at par violated the terms of that debt. Regulators would deem that bank to be insolvent and close it. If regulators did not close defaulting banks promptly, redeeming at less than par would likely incite a bank run, which would quickly exhaust its cash and similarly force the bank to close its doors—and its operations.

In contrast, credit union laws made clear that redeeming shares at less than par violated nothing. Unlike bank deposits, credit union shares were designed to absorb losses without triggering default or closure. In that regard, credit union shares had some of the attributes of bank equity capital and of bank shares. State laws and credit unions' bylaws explicitly referred to credit union shares as capital. The New York Credit Union Law of 1913 (hereafter NYCUL 1913) noted “the capital of a credit union shall consist of the payments made by members on shares, and unpaid dividends credited thereon.”<sup>8</sup>

To deal with abnormal circumstances, credit unions had two valuable redemption options that banks did not have: to delay and to discount. The Parker (1927) template for credit union bylaws allowed a credit union to restrict share withdrawals to the days in which members made interest and principal payments. Since loans made by early credit unions had very short maturities, interest and principal payments would quickly cover most withdrawal requests.<sup>9</sup> The bylaws further ordained, “withdrawals shall be paid in the order of their filing and as funds therefor become available” (Parker 1927). In addition, they allowed a credit union's board of directors to require at any time that a member give 30 days' notice before a withdrawal. Crucially, if a credit union were in dire straits, due to large

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<sup>8</sup> NYCUL 1913, §450. Throughout, we refer to the version of the NYCUL 1913, as amended in 1915, that was included in Ham and Robinson (1930).

<sup>9</sup> A sample of 176 credit unions had loan originations of \$20.1 million during 1925 and had \$13.4 million of loans outstanding at the end of 1925, suggesting that the average loan maturity was less than one year (Parker 1927). Ham and Robinson (1930, 24) recommended a maximum maturity for credit union loans of one year, while recognizing that some loans would likely be renewed at maturity.

loan losses or any other problems, the bylaws permitted it to redeem shares at less than par.<sup>10</sup>

Further cementing shares' at-risk status, New York required each credit union to put reserves in an account, referred to as the credit union's "guaranty fund," that was available to absorb losses and thereby reduce risks to the par value of its shares.<sup>11</sup> When faced with losses, credit unions could tap their guaranty funds to avoid impairments to shares (Parker 1927, 20). The NYCUL 1913 required that at least 25 percent of net earnings be contributed annually to the guaranty fund "for the protection of shareholders in the event of losses" (Bergengren 1935, 26).<sup>12</sup> In accordance with the template of the Uniform Credit Union Law, most states generally required annual transfers of at least 20 percent of net earnings (Bergengren 1935). Credit unions used the remainder of net earnings to pay year-end dividends, or as additions to their retained earnings beyond their guaranty funds.

### *"Fail safe" credit unions*

The options to delay and to discount share withdrawals essentially removed liquidity risk and solvency risk from credit unions. Delays could stifle runs and discounts could match declines in assets, so that net worth was never negative.

How effective were delay and discounts? Reports during the Great Depression asserted that there had been no runs on credit unions (Moody and Fite 1984, 109). The congressional report on the Federal Credit Union Act uncovered no involuntary liquidations of credit unions whatsoever during the halcyon years of 1929–1933 (US Senate 1934, 2).<sup>13</sup> The

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<sup>10</sup> NYCUL 1913, §459. Another remedy for members was to transfer (i.e., sell) their shares to another member of the credit union, subject to the restrictions and approval of the board of directors, including paying a transfer fee to the credit union (Parker 1927, Credit Union Bylaws, Article IX: 6).

<sup>11</sup> NYCUL 1913, §457.

<sup>12</sup> Ibid. Net earnings equaled interest and noninterest income minus noninterest expenses, interest paid on deposits, and losses on loans. Unlike today, then dividends paid were not subtracted in the calculation of net earnings.

<sup>13</sup> Of course, voluntary liquidations of credit unions could impose losses on shares.

contrast with banks is stark: runs on banks were numerous and ruinous. Many thousands, nearly 40 percent in all, of banks closed during 1929-1933 (Federal Reserve 1959). Belying crises among credit unions, as late as 1936, 94 percent of the credit unions that were in operation in 1929 were still operating (Moody and Fite 1984, 202).

A necessary condition for discounts' removing solvency risk was that credit unions had minimal amounts of liabilities (including debt). In their ordinary courses of business, credit unions incurred minor amounts of liabilities, such as accounts payable.<sup>14</sup> Their small sizes and the potential ramifications for control and ownership if they could not make payments kept credit unions away from taking loans or issuing bonds and other debt.

The option to discount shares, coupled with the near absence of liabilities, reduced the risks of a credit union's insolvency, and thus of failure, and of regulators closing institutions through "involuntary liquidations," to essentially zero. Losses might be large enough to wipe out reserves in guaranty funds and leave assets worth less than the par value of all shares. However, because they were allowed to redeem shares at less than par, credit unions were virtually precluded from insolvency.

Although uninsured credit unions could remain solvent, their losses hurt members. Lower, even negative, earnings could reduce or delay dividend payments. Large enough losses imposed delays and discounts on share withdrawals. The specter of low or no dividends might spur withdrawals (even at discounted values). Dismal prospects might lead members to vote to voluntarily liquidate their credit union and absorb losses if the liquidation of its assets did not generate enough cash to pay (the few liabilities and deposits and) shares at par.

Consider a credit union that funded \$100,000 of loans with \$90,000 from share accounts, \$5,000 from its guaranty fund (or reserves), and \$5,000 in accounts payable. Loan losses of \$10,000 would wipe out the guaranty fund, but leave \$85,000 of assets to support shares (or capital or net worth). For this credit union to become insolvent, loan losses would have to exceed the sum of (par) balances in share accounts plus the guaranty fund, i.e., on the \$100,000 of loans, losses would have to be of

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<sup>14</sup> At the end of 2017, for example, aggregate liabilities (other than shares and net worth) at federally-insured credit unions equaled four percent of their assets.

\$95,000. While possible, loan losses of that proportion are extremely unlikely. In practice, members would likely vote to voluntarily liquidate this credit union well before loan losses cut into asset values that severely, thereby avoiding an insolvency if it could not repay the \$5,000 of accounts payable.

Credit unions then were analogous to equity mutual funds now: If they do not have liabilities, they cannot become insolvent, or “fail.” When they have no fixed liabilities, the net worth of such equity mutual funds cannot be negative, regardless of the net worth of the (limited liability) corporations whose shares they owned. The obvious contrast is banks, which were funded overwhelming with defaultable debt, mostly in the form of short-term deposits.

Despite large losses, members could continue operating a credit union if they judged that it still provided valuable services, or that the values of their shares might rebound. Thus, before insurance, regulators rarely pushed credit unions into involuntary liquidation. Indeed, it was not until 1946 that the FCU Act provided a procedure for involuntary liquidation of federal credit unions (CUNA 1981, vii).

### **Safer Shares Made Credit Unions Riskier**

In this section, we trace out the introduction of federal insurance for (the par value) of share accounts in credit unions and some of the regulators’ ensuing reactions. In the next section, we show how the reactions led to significant restructuring of the credit union industry.

By protecting the par value of shares, insurance clearly made shares less risky. Insuring shares also stripped credit unions of their insurance against insolvency. Of course, deposits and other debts had always imparted insolvency risk to banks. With federal insurance having introduced insolvency risk to credit unions, regulators sought to rein it in. One way was supervision and regulation that was more rigorous. The second way to contain insolvency risk was to tighten capital requirements. From their earliest days, regulations required credit unions to set aside a fraction of their earnings as reserves. These regulations did not set minimum ratios of capital to assets that had to be achieved but, instead, stipulated flows into retained earnings. As an intermediate step to minimum capital ratios, revised regulations required credit unions to set

aside reserves--unless they achieved a specified capital ratio. By the 2000s, capital regulations for credit unions had shifted completely from flow to stock requirements. Regulators required credit unions to achieve minimum ratios of their capital to assets.

To avoid distractions in our discussion of financial regulations and policies (including share insurance), we make several simplifying assumptions that seem to us to be reasonable approximations. We continue to assume that only shares and retained earnings appear on the right-hand side of the balance sheets of credit unions. The intention, essence, and effect of the insurance is to cover the overwhelming majority of shares. In practice, adjustments, exceptions, and provisions of share insurance have been quite complicated. After insurance, without importantly affecting our analysis, we assume that all shares are insured. We also assume that regulators close a credit union when its net worth falls below zero.

### *Introducing insurance*

The numbers and assets of credit unions grew rapidly through the Great Depression and the post-WW II period. Their growth rates then throttled back significantly through the 1960s. With 10 times as many credit unions and with a larger market share in 1970 than in 1934, slower growth of this maturing industry was likely. By then, the industry contended that one impediment to its attracting more members and shares was that some consumers (correctly) perceived insured bank deposits to be safer than uninsured credit union shares (Moody and Fite 1984).

In 1970, the Credit Union Share Insurance Act (CUSIA) required the new, independent, federal regulator, the National Credit Union Administration (NCUA), to establish the National Credit Union Share Insurance Fund (NCUSIF) (William B. English 1993, Stephanie O. Crofton, Luis G. Dopico, and James A. Wilcox 2010). The US Senate report that accompanied CUSIA provided reasons to support the CUSIA bill (US Senate 1970). Among them were that (1) losses to members were concentrated in the smallest credit unions, where share balances tended to be small, (2) federal insurance would attract funds for loans to underserved areas, and (3) surveys showed that five out of six members believed (*incorrectly*) that their shares were already federally insured.

## Credit Union Capital and Insurance

### *Introducing insolvency risk*

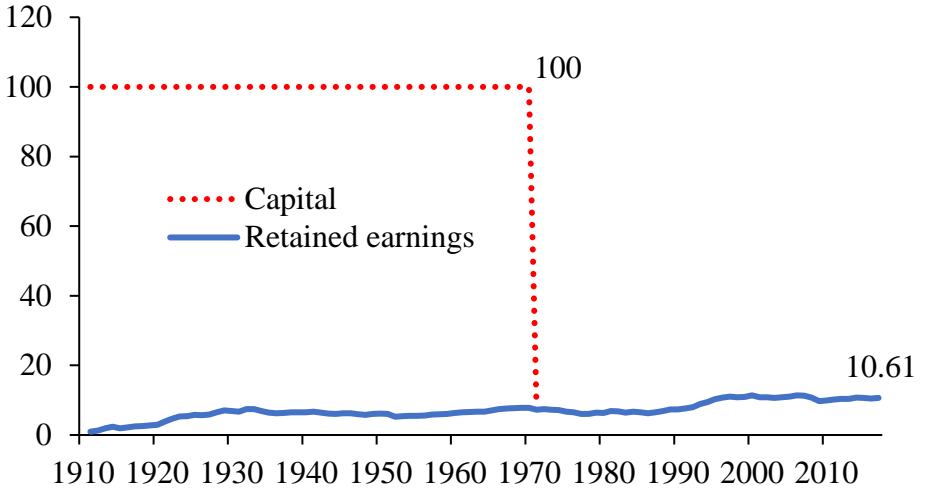
Insurance introduced insolvency and closure risks to credit unions. Federal share insurance eliminated the options to delay and to discount that assured solvency before insurance. A condition for members' shares to be insured was that credit unions redeem both insured and uninsured shares on time, and at par. Withdrawals could no longer be delayed. Shares could no longer absorb losses. Delays or discounts led rapidly to closure by regulators. Without the option to discount shares, loan losses then fell entirely on credit unions' retained earnings. If losses were larger than its retained earnings, a credit union was insolvent and then closed. The insurance fund, the NCUSIF, redeemed shares at par and bore any shortfall of asset value below the par value of shares.

Figure 1 shows the buffer available to absorb losses at credit unions annually for 1910-2017. The dotted and solid lines respectively show aggregate credit union capital and retained earnings, as percentages of total assets. Credit unions issued no common stock and had minimal liabilities before insurance began in 1971. Then, their capital, which equaled shares plus retained earnings, equaled credit union assets. Having no common stock or liabilities meant that all of that capital was available to absorb losses without triggering default or closure before 1971. By protecting shares from losses, however, insurance reduced the volume of loss-absorbing shares from all to virtually none. From then on, only retained earnings stood between credit unions and insolvency, as shown by the solid line from 1971 onward. The solid line shows that retained earnings were always less than seven percent of assets until the 1920s. They then hovered in the 5-8 percent range for decades, through the early 1990s. With the greater emphasis on capital by both credit union and bank regulators, retained earnings have been substantially higher since then, in the 9-12 percent range since 1995.

### *Regulating insolvency risk*

Shifting the risks of losses at credit unions from shares to the share insurance fund shifted regulators' attention. Regulators sought to avoid and minimize failures of credit unions and losses to their insurance fund, and to protect their reputations. Regulations did not change as deftly as risks.

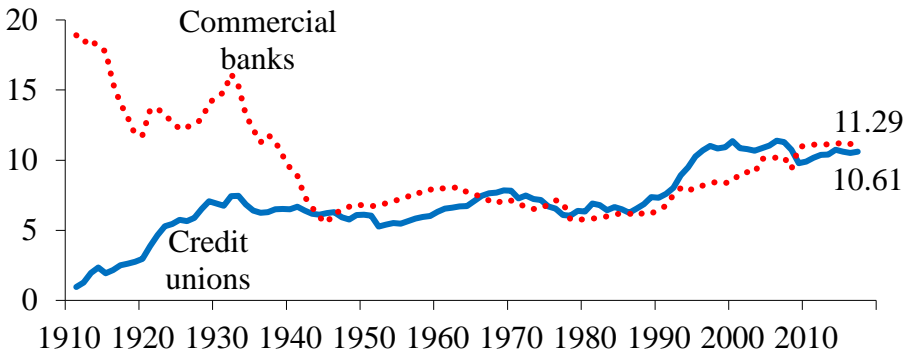
Crofton, Dopico and Wilcox



Sources: BLS (1930-1953), BFCU (1937-1969a and b), NCUA (1970-1979b; 2018c), CUNA (2018).

**Figure 1**

Credit union retained earnings and capital (percent of assets, 1910-2017)



Sources: As Figure 1, Federal Reserve (1959), FDIC (2018a).

**Figure 2**

Credit union retained earnings and commercial bank equity capital (percent of assets, 1910-2017)

## Credit Union Capital and Insurance

Regulators required credit unions to have reserves to buffer losses from the beginning. The NYCUL 1913 required credit unions to add a fixed percent of their net earnings to their guaranty funds each year. Later, the Parker template for credit unions called for 20 percent of net earnings to flow into credit unions' guaranty funds.<sup>15</sup> The solid line in Figure 2 shows credit unions' actual retained earnings (as a percent of total assets). The dotted line shows the analogous buffer at commercial banks, equity capital (which included stock issued as well as any retained earnings) annually for 1910-2017.

As the decades passed, regulations changed to adjust required flows in light of the stock of accumulated reserves. Starting in 1949, for example, federal regulators required no transfers into reserves if regular reserves exceeded 10 percent of shares.<sup>16</sup> Despite that and other adjustments through the years that generally permitted fewer reserves, retained earnings (as a percent of assets) rose from 5.26 percent in 1952 to 7.85 percent in 1969.

These requirements were much more binding on some credit unions than on others. In general, they especially constrained larger and faster-growing credit unions. To accommodate the more successful credit unions, the US Congress (US Senate 1970, 5) then lowered credit unions' required transfers into regular reserves again (Harold Black and Robert H. Dugger 1981). Later, the Depository Institutions Act of 1977 again lowered required transfers into regular reserves.

From the 1980s onward, regulators shifted their focus more and more toward the amounts of banks' and credit unions' capital buffers and away from gross flows into those reserves. The US Congress and bank regulators spelled out capital to assets ratio requirements for banks during

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<sup>15</sup> Over time, credit unions' terminology has evolved. Today's "net worth" (or "retained earnings") were earlier subdivided into "guaranty funds" and "undivided profits" and later into "regular reserves" and "other reserves." Earlier credit unions did not differentiate between guaranty funds (to protect credit unions against unforeseen loan losses) versus allowances for loan losses (to protect credit unions against foreseeable loan losses). Later, credit unions set up separate "allowances for loan losses."

<sup>16</sup> Public Law 81-376, titled "An Act to Amend the Federal Credit Union Act."



the 1980s and early 1990s. Over the same years, regulators required credit unions to increase their capital to assets ratios as much as banks. Rather than through changes in law or regulation, credit union regulators relied then on less-quantified, supervisory pressures.

In 1998, the US Congress enacted the Credit Union Membership Access Act (CUMAA). CUMAA completed the shift of reserve requirements from flows to stocks.<sup>17</sup> Credit unions that were “well capitalized” were subject to lighter regulation. Being “well capitalized” generally required that the ratio of a credit union’s net worth (largely retained earnings) to assets was at least seven percent. Credit unions with net worth ratios less than six percent were categorized as not “adequately capitalized,” which prohibited them from acquiring more assets.<sup>18</sup>

*Regulatory responses to banking crises and to credit union quiescence*

The environments that preceded many of the major regulatory actions for credit unions differed strikingly and intriguingly from those for banks. Major banking legislation very often followed economic and especially banking problems. Pairs of banking policies and problems include: The Banking Acts during the US Civil War, the Federal Reserve Act following the Panic of 1907, the Banking Act of 1933 (including the Glass-Steagall provisions) and the Banking Act of 1935 Act during the Great Depression, the string of laws and regulations that loosened and then tightened public policies from the late 1970s through the early 1990s due to high inflation and interest rates and banking and thrift crises and, most recently, the Dodd-Frank Act on the heels of the global financial crisis that started in 2007.

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<sup>17</sup> Several studies analyzed regulations and rationales for how much and what kind of credit union capital was, or should be, required or allowed by regulations. See, for example, Crofton et al. (2012), Wilcox (2002, 2003, 2011), National Association of State Credit Union Supervisors (2005), CUNA (2010), NCUA (2010).

<sup>18</sup> Before CUMAA, credit unions could stop making transfers into their regular reserves if their accumulated reserves were at least six percent of risk assets. For a typical credit union, that corresponded to about four percent of total assets. Credit unions were not required to ever achieve the six percent target. Credit unions were required to keep transferring five percent of gross income annually into their reserves if they were below the target.

## Credit Union Capital and Insurance

In contrast, it is harder to tie major changes in laws and regulations about credit unions to economy-wide problems. Its relatively small size meant that the credit union industry was unlikely to be either the cause of or solution to economy-wide problems. Major changes more often followed quiescence than crisis in the credit union industry. While banking's "reactionary" regulation responded to, rather than prevented, problems in the industry, problems less often preceded policies in the credit union industry.

Establishing the federal charter for credit unions in 1934 was a crisis response—but it was a response primarily to the crises in the banking industry during 1929-1933. Despite its appearance, the new federal charter was not really a major reform, in that it differed little from most state charters. Nor did other provisions of the enabling law substantially change regulation of (pre-existing) state-chartered credit unions.

The transformative Credit Union Share Insurance Act (CUSIA) of 1970 followed no major upheavals in the economy or in credit unions. Unlike the Banking Act of 1933's creation of the Federal Deposit Insurance Corporation (FDIC) in response to the banking crises of the early 1930s, in 1971 the NCUSIF arose during quiescent conditions in the healthy and growing credit union industry. Throughout the 1960s, there were marked declines in rates of (1) liquidations with losses per FCUs, (2) shares in FCUs liquidating with losses per all shares in FCUs, and (3) losses on shares in FCUs liquidating with losses per all shares in FCUs (BFCU 1960-1969a, NCUA 1970a). Credit unions were also healthy when CUMAA was enacted in 1998. Retained earnings relative to assets had been rising for several years and losses imposed on the share insurance fund were low and declining (NCUA 2018c; Wilcox 2005). Nonetheless, at that time, CUMAA imposed new and much higher capital requirements.

Just as striking are the regulatory dogs that did not bark. When high interest rates and unemployment produced a wave of credit union failures during the 1980s, major regulatory responses were not directed at the clearly-troubled credit union industry. Similarly, when the US Congress started calling for banking regulators to impose new, higher requirements for bank capital in the latter 1980s, it could have used the same rationale to apply them to credit unions, but it did not. Part of the explanation for

that omission likely can be found in credit unions' having weathered the late 1980s and early 1990s far better than banks and thrifts did.<sup>19</sup>

### **Entry, Exit, and Mergers After Insurance**

Before insurance, credit unions were typically small, volunteer-driven, and somewhat informal. Large numbers of new credit unions formed and large numbers voluntarily liquidated, usually without losses imposed on members.

Insurance changed the relationship of credit unions with their regulator. Regulators still preferred that the industry expand and prosper. But, now, regulators also sought to minimize failures and losses to the insurance fund, and thus to their reputations.

In this section, we delve into the incentives that insurance brought to federal regulators of credit unions, their responses, and to thoroughgoing effects on the structure of the credit union industry. After insurance, the risks and rewards, not to credit union members, but to regulators, help explain the dramatic declines in entries and voluntary exits of credit unions. Similarly, regulators' risks and rewards help explain the unprecedented surge of credit union mergers after 1971.

#### *Data difficulties*

This section begins by presenting our newly-constructed data for credit unions for the era before federal insurance. One consequence of the introduction of share insurance and the regulatory responses to it was that more and different data were collected and were relevant. Table 1 presents the most relevant and comparable data that are available. We recognize that differences in what the data measured before and after insurance makes interpretation more difficult.

Importantly, liquidations with losses are not the same as failures. For one thing, before insurance, members could and often did continue to operate credit unions that could not redeem shares on time and at par.

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<sup>19</sup> Credit unions' annual provisions for loan losses (and net loan charge offs) per assets were far lower than banks' during 1980-1991 (0.34 percent versus 0.66 percent) and reached far lower peaks (0.48 percent versus 1.25 percent) (NCUA 2018c; FDIC 2018a).

## Credit Union Capital and Insurance

**Table 1**

Credit union entries, exits, and losses before and after federal share insurance

Before Share Insurance (1934-1970)		After Share Insurance (1971-2017)	
2,450 → 23,687	Change in total number of credit unions	23,267 → 5,800	
Annual average rates of entry			
8.17	New FCUs (% of FCUs)	New CUs (% of CUs)	0.83 2000-17: 0.06)
Annual average rates of exit			
1.98	Liquidations without losses (% of FCUs)	Voluntary liquidations (% of CUs)	0.37 2010-17: 0.10)
0.49	Liquidations with losses (% of FCUs)	Failures (% of FICUs)	0.49
0.03	Liquidations with losses (% of FCUs, weighted by shares)	Failures (% of FICUs, weighted by shares)	0.10*
0.07	Mergers (% of FCUs)	Mergers (% of CUs)	2.48
Annual average rates of loss on shares and to the NCUSIF			
17.4	Losses on FCU shares (% of shares in FCUs with losses)	Losses on uninsured shares and imposed on NCUSIF (% of shares in failed FICUs)	15.6*
0.003	Losses on FCU shares (% of shares in all FCUs)	Losses on uninsured shares and imposed on NCUSIF (% of shares in all FICUs)	0.021

*Sources:* CUNA (2018), BFCU (1937-1969a and b), NCUA (1970-2018a; 2018d), and authors' calculations.

*Notes:* CU denotes all credit unions, FCU federally-chartered credit unions, and FICU federally insured credit unions. By the middle of the 1980s, about 90 percent were federally insured; by the early 1990s, about 98 percent were federally insured.

\*Data availability restricted the calculation period to 1985-2017 for failures as a percent of FICUs (weighted by shares) and for losses imposed on uninsured shares and the NCUSIF as a percent of shares in failed FICUs.

After insurance, however, regulators were expected to close such credit unions and record them as failures. Regulators could also “fail” credit unions that were headed for insolvency. On the other hand, after insurance, regulators sometimes averted closures of troubled, even insolvent, credit unions by coaxing them to merge with stronger ones, in part by guaranteeing their troubled loans. Thus, neither before nor after insurance did liquidations or failures match up perfectly with insolvencies. Nonetheless, the data are informative and the differences often are large enough to make reasonable inferences about the direction of changes.

*Entries and exits*

Table 1 shows credit union entries, exits, and losses before (1934-1970) and after (1971-2017) share accounts were covered by federal insurance.<sup>20</sup> Entries are newly-formed credit unions. Exits included voluntary or involuntary liquidations, and mergers. Table 1 also shows both losses on members’ account balances and losses borne by the share insurance fund, NCUSIF. The two middle columns pair the names for the most-comparable, available measures before and after insurance.<sup>21</sup>

*Entries*

Before share insurance, credit unions entered and exited the industry frequently: More than 20,000 federally-chartered credit unions were formed and nearly 6,000 liquidated.<sup>22</sup> The second row in Table 1 shows

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<sup>20</sup> We eschewed difference-in-difference calculations with data for credit unions and banks because the industries had dramatic differences before and after 1971 in regulation, as well as in insurance.

<sup>21</sup> Data for individual credit unions were only available for years since 1979, long after insurance began. For years before 1979, aggregate data for credit unions were available from regulators’ annual reports for a small number of variables for federally-chartered credit unions and for far fewer variables for state-chartered credit unions.

<sup>22</sup> For the years before share insurance, we concentrated on federal credit unions (FCUs), because annual data on the formation and the liquidation of state-chartered credit unions were less consistently available. The unweighted average annual rate of new FCU formations was 41.1 percent during 1934-1970. That rate was misleading. During the infancy of the FCU charter, the number of FCUs was, of course, trivially low, which made for extraordinary percentage growth rates. There were 78 FCUs in 1934 and 906 in 1935, implying an entry rate of over

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that, before insurance, the number of new credit unions formed each year averaged over eight percent of the existing credit unions. The same row shows that the rate fell dramatically after insurance, at only 0.83 percent, and lower yet, at 0.06 percent, since 2000.

Insurance changed regulatory policy from encouraging to discouraging new credit unions. Before share insurance, credit union regulators had goals of boosting the numbers of credit unions and of members and boosting the volume of industry assets. It is tempting to consider them industry boosters. As one of the more explicit incentives for newly-formed credit unions, for example, regulatory personnel could be rewarded for the number of credit unions that they helped form.<sup>23</sup>

Figure 3 shows the large, sudden and continuing decline of new entries to the credit union industry after 1970. Smaller and younger credit unions have long liquidated more often (John T. Croteau 1952; BFCU 1937-1969a). In recognition of those dangers, after insurance, regulators began to demand that FCU charter applicants have more credentials and present more-professional applications. The more rigorous chartering process effectively stopped formation of new, less-formal, volunteer-driven credit unions. The annual numbers of new credit unions formed fell sharply, from about 1,000 during the 1960s (a 4.64 percent annual rate), to about 500 (2.28 percent) during the 1970s, and then to about 100 (0.45 percent) during the 1980s. Not shown in Figure 3 is the continuing decline in annual formations after 1990, to about 10 (0.09 percent) during the 1990s, seven (0.07 percent) during the 2000s, and three (0.04 percent) during 2010-2017 (Dopico 2014 and NCUA 2018c).

In contrast to credit unions, formation of new banks continued apace. After about 160 banks started up annually during the 1960s, about 180 started up annually during the 1970s and 1980s. Unlike sharply lower entry rates for credit unions, commercial banks' entry rates did not collapse until the global financial crisis. Banks' annual entry rates averaged 1.97 percent in the 1980s, 1.28 percent in the 1990s, and 1.62

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1,000 percent. Therefore, we show an annual rate that was weighted by the numbers of FCUs in operation each year.

<sup>23</sup> During 2013, the authors interviewed David Dollar, then a retired Chair of the National Credit Union Administration. The interview focused on the changing landscape of new credit union formation before and after share insurance.

percent in the 2000s. Banks' entry rates then sank after the 2000s. In 2010-2017, the annual rate averaged 0.04 percent. This contrast suggests that the dramatic decline in new credit unions more likely stemmed from regulatory shifts than from overall economic and financial conditions.

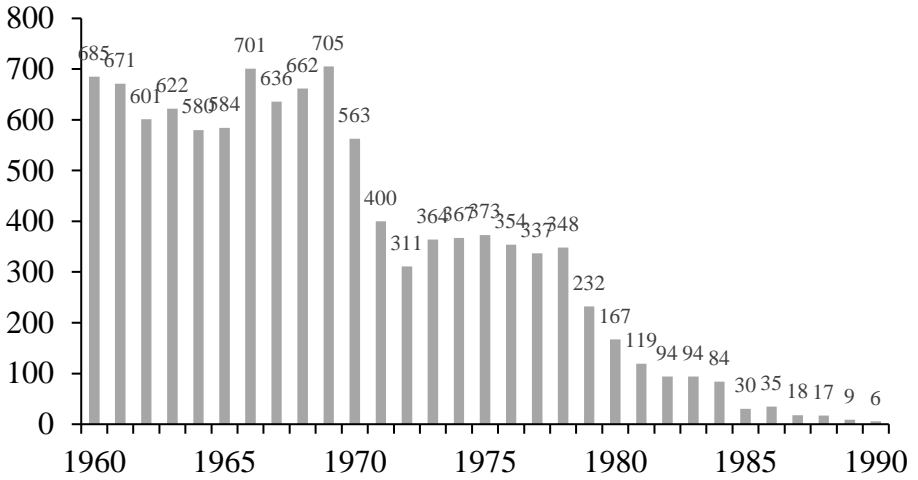
Many of the important changes after 1971 in economic and financial conditions, in technology, in demographics, and in some regulations would have had broadly similar effects on banks as they had on credit unions. Nonetheless, as Figure 4 shows, the rise and fall of credit unions was not mirrored in the path of banks. The number of credit unions climbed steadily while they were uninsured, and then declined steadily, starting suspiciously soon after shares became insured. In contrast, the number of banks held quite steady, between 14,000 and 15,000, for more than three decades before and more than one decade after 1971. Nor does Figure 4 shows any upsurge or downturn in the number of banks in operation for any year near 1971. Starting in the 1980s, the numbers of each sank, as geographic restrictions on banks and FOM restrictions on credit unions eased, thereby permitting more of them to merge (Dopico 2000).

### *Exits*

While discouraging new credit unions from entering, since the early 1980s regulators have pushed for new credit union members and for industry growth by expanding permissible FOMs. Broader FOMs increase the pool of those eligible to be members and simultaneously provide greater geographic and borrower diversification. As the number of new credit unions dwindled and regulators and conditions pushed smaller credit unions into mergers (Dopico and Wilcox 2009), the rate of voluntary liquidations also plummeted.

The third row in Table 1 shows that, before insurance, it was quite common for credit unions to disband without imposing losses on shares: each year on average, nearly two percent did. Of the nearly 6,000 liquidations, only about 1,000 of them imposed any losses on members' share accounts. Liquidations without losses typically took place due to shrinking memberships or an inability to retain paid or volunteer officials. However, far from imposing losses on members, those liquidations

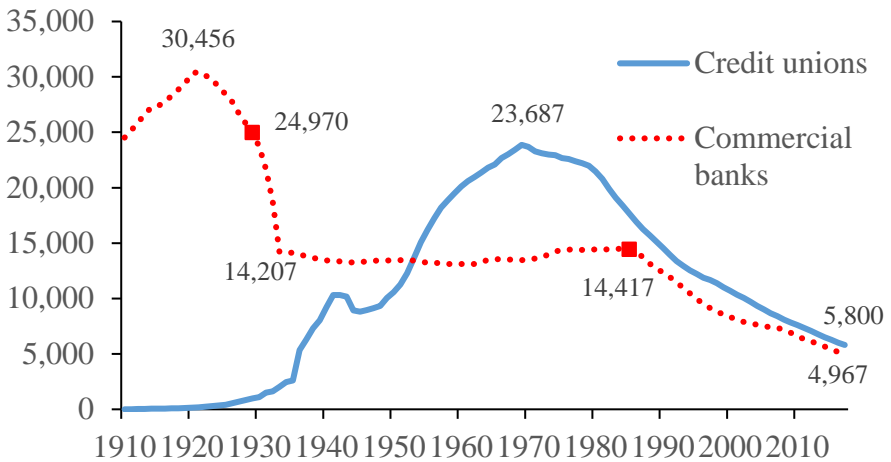
## Credit Union Capital and Insurance



Sources: BFCU (1961-1969a and b), NCUA (2018d).

**Figure 3**

Numbers of new credit unions formed (1960-1990)



Sources: BLS (1930 and 1940), Federal Reserve (1959), FDIC (2018a), CUNA (2018).

**Figure 4**

Numbers of credit unions and of commercial banks (1910-2017)



actually paid liquidating dividends that averaged eight percent of shares (Croteau 1952, 200; BFCU 1937-1969a, NCUA 1970a).

After 1971, the comparable rate for voluntary liquidations was far lower: only 0.37 percent annually (see also Figure 5). With regulators making mergers feasible and members benefiting from larger economies of scale, and often as well from becoming part of financially stronger credit unions, mergers became common.

While the comparisons are imperfect, the numbers of credit unions liquidating with losses to members before insurance and of failures (with losses to the insurer) since insurance have been remarkably similar. Table 1 shows both averaged 0.49 percent during, respectively, 1934-1970 and 1971-2017. Weighting liquidations and failures by the amounts of shares affected better reflects their import to members and potentially taxpayers at, respectively, a measly 0.03 percent before insurance and 0.10 percent after insurance.

Comparing (1) losses to members before insurance with (2) the sum of losses to the share insurer plus losses to uninsured shares (hereinafter: total losses) requires care. Before insurance, the total dollar amount of losses to members in FCUs was very small. Because nearly all of the credit unions that liquidated with losses to members had small amounts of shares, aggregate losses were also very small, averaging only 0.003 percent of aggregate FCU shares before share insurance (BFCU 1937-1969a, NCUA 1970a). At the same time, the percentage losses at the relatively few FCUs that imposed losses on their members were often large. As Table 1 shows, before insurance, losses per shares in those FCUs that liquidated with losses averaged 17.4 percent.

Loss rates were not much different after insurance. Total losses per shares in failed credit unions declined somewhat to 15.6 percent during 1985-2017.<sup>24</sup> At the same time, however, the percent of shares in failed credit unions during 1971-2017 was 0.10 percent. That exceeded the 0.03 percent of shares that were in credit unions that liquidated with losses

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<sup>24</sup> Data about insurance losses and assets at individual credit unions before 1985 are either unavailable or unreliable. Since the insurer and uninsured shares shared losses pro rata, the loss rates were the same for (1) insurer losses per insured shares, as for (2) losses to uninsured shares per uninsured shares, and as for (3) the sum of insurer losses and losses to uninsured shares per total shares.

## Credit Union Capital and Insurance

before insurance. And, as the bottom row of Table 1 shows, annual total losses averaged 0.021 percent of shares in all credit unions after insurance, up from 0.003 percent before insurance, an increase of only two basis points. This relatively modest increase hints that credit unions may not have taken much more risk after insurance than they had before insurance.<sup>25</sup>

While banks imposed similarly low losses on the FDIC before credit union share insurance, they imposed noticeably higher losses on the FDIC after share insurance. Annual FDIC insurance losses per insured deposits averaged 0.003 percent during 1934-1970, but rose to 0.069 percent during 1971-2017 (FDIC 2018b). The increase of seven basis points in the rate of losses imposed by banks was considerably larger than the corresponding credit union increase of two basis points.

### *Many more mergers*

Share insurance and regulators' responses to it transformed the structure of the credit union industry. Perhaps the most significant regulatory response was the easing of FOM and merger restrictions. Mergers were rare before insurance; they became numerous afterwards.

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<sup>25</sup> Wilcox (2005) explores NCUSIF's funding structure and its costs to credit unions. During 1971-1984, NCUSIF charged credit unions annual premiums of at least 1/12 of 1 percent of insured shares (0.083 percent) and at most twice that. Premiums were at the minimum (0.083 percent) during 1971-1984, except in 1982 and 1983, when they were 0.139 and 0.167 percent respectively. Since 1985, credit unions have been required to maintain a "capital deposit" at NCUSIF equal to 1 percent of their insured shares. NCUSIF uses capital deposits and their earnings to cover its operational costs and its insurance payouts. If NCUSIF's equity ratio (the capital deposit plus its other reserves) falls below 1.20 percent of insured shares, it may impose higher premiums on credit unions, as it did during 1991-1992 and 2009-2013 (including those for its sister fund, the Temporary Corporate Credit Union Stabilization Fund). When the equity ratio had exceeded its "normal" level (typically 1.30 percent of insured shares), NCUSIF has paid dividends to credit unions, as it did during 1985 and 1995-2000. Over 1985-2017, annual premiums and dividends averaged 0.027 and 0.008 percent respectively of insured shares, implying an average net premium of 0.019 percent. An approximation to credit unions' net direct cost of share insurance can be calculated as their net direct premiums plus the opportunity cost of their capital deposits minus any extra amounts that would be paid on shares due to the absence of insurance.

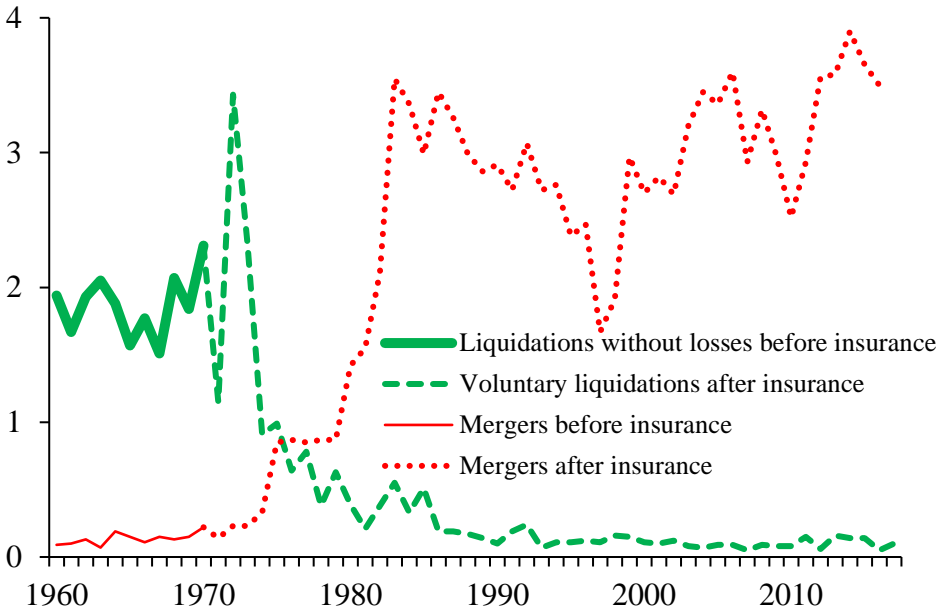
The sixth row in Table 1 shows that there were almost no credit union mergers before insurance: less than one-tenth of one percent of credit unions merged annually. This row also shows the explosion of mergers after insurance: well over two percent of credit unions merged each year. More precisely, the sixth row shows that only 0.07 percent of federally-chartered credit unions merged annually before insurance; after insurance, the merger rate soared to 2.48 percent (NCUA 1970-2018a). The annual trickle of about two dozen mergers became a tidal wave of hundreds of mergers.

Figure 5 shows liquidation (without losses and voluntary) and merger rates before and after share insurance was introduced. After being rather steady during the 1960s, starting about the middle of the 1970s and lasting for about a decade, the voluntary liquidation rate trended sharply down and the merger rate trended sharply up. Then, for about three decades from the middle of the 1980s onward, both plateaued: the liquidation rate fell to nearly zero and stayed there; the merger rate soared to around three percent. Below we make the case that this strong negative correlation was causation—from more mergers to fewer liquidations. More of a stretch, perhaps, would be the argument that the negative correlation between the merger rate and rate of forming new credit unions was also causation.

The merger rate was rapid because regulators were able and members were willing to merge credit unions. Although both regulators and members may have preferred mergers to liquidations long before insurance, only after insurance did regulators enable and encourage mergers. Both regulators and members saw plenty of advantages in mergers. Some advantages were particularly strong for weaker credit unions; some advantages would accrue to almost any credit union.

Mergers provided more economies of scale to the members of both the target and the surviving credit unions. The benefits of the large economies of scale in credit unions led regulators and members to support mergers (Dopico and Wilcox 2009). Mergers also allowed members of credit unions that might otherwise have voluntarily liquidated to remain members. Mergers also let weaker and even nearly-failed credit unions become part of larger, stronger credit unions. This latter group of mergers reduced the actual and expected costs to the share insurance fund.

## Credit Union Capital and Insurance



Sources: BFCU (1961-1969a and b), NCUA (2018d), CUNA (2018).

**Figure 5**

Credit union liquidations without losses and mergers  
(percentage of total credit union numbers, 1960-2017)

A merger typically required enlarging a credit union's FOM. Regulators were quite willing to liberalize fields as much as the law permitted, and beyond. From the early 1980s, the NCUA had judged that FOMs were too restrictive and, likely, prevented sufficient diversification of credit risks. That was one reason that the NCUA gave for permitting FOM expansions. One example of liberalizing FOMs was that the NCUA permitted a credit union to include the employees of several small companies, instead of requiring a tiny, separate credit union for employees of each company (NCUA 1982-1984a). Of course, the better diversification via liberalized FOMs could have been argued for nearly all credit unions, however strong or large.

Without judging the economic merits of NCUA's actions, the US Supreme Court ruled that FOM expansions exceeded the authority

delegated to the NCUA by the US Congress (NCUA 1999a; CUNA 1999; Wilcox 2011). Faced with the possibility of evicting vast numbers of members from their credit unions and being pressed by banks, the US Congress passed CUMAA as a compromise. While CUMAA grandfathered previous FOM expansions, it also acceded to long-running requests by banks to restrict credit unions. Specifically, CUMAA (1) capped most credit unions' business lending at 12.25 percent of assets, (2) eased the conversions of (tax-exempt) credit unions into (income-taxable) mutual thrifts, and (3) set in statute a far-stricter set of capital requirements.

Neither the US Supreme Court nor CUMAA stripped the NCUA completely of its FOM authority. The NCUA continued, albeit less boldly, to favor FOM expansions and mergers. Its continuing authority still allowed NCUA to preside over a vigorous outflow of credit unions, but not members, via mergers.

### **Summary and Implications**

Before federal insurance, credit union members' shares served effectively as loss-absorbing capital. Funded almost entirely by uninsured shares, whose payments could be delayed and discounted, credit unions could avoid the ruinous runs and absorb the losses that caused bank failures. As a result, even during the Great Depression and until shares were insured in 1971, credit unions did not become insolvent.

We uncovered very different patterns in regulatory changes for credit unions than for banks. Major bank regulations almost always, and only, happened following banking crises. Major credit union regulations, on the other hand, rarely followed crises. Indeed, they usually followed periods of prosperity for the credit union industry. In contrast to deposit insurance's springing from the banking crises of the early 1930s, share insurance came to a healthy industry and prosperous economy. Starting in the 1980s, capital regulations followed the same pattern.

By requiring that shares be redeemable on time and at par, insurance introduced insolvency risk to credit unions. Regulators responded with more regulation of credit unions' activities and capital. They also responded by enabling and encouraging mergers, and simultaneously discouraging new credit unions from forming. They encouraged mergers

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both of weak and of strong credit unions. Having restrained entries by new credit unions and having stimulated exits via mergers, regulators spurred consolidation of the credit union industry into many fewer, much larger credit unions. In future work, we plan to explore how much (or little) and why this restructuring changed risk taking in the credit union industry.

### Acknowledgements

The authors would like to thank participants at the 2015 EBHS conference where an earlier version of this paper was presented, anonymous referees, and the journal's editors for their valuable comments, suggestions, and guidance.

### WORKS CITED

- Bergengren, Roy F. 1935. *CUNA Emerges*. Madison, WI: Credit Union National Association.
- Black, Harold and Robert H. Dugger. 1981. "Credit Union Structure, Growth, and Regulatory Problems." *The Journal of Finance* 36 (2): 529-538.
- Bureau of Federal Credit Unions. 1937-1969a. *Report on Operations* (and similar titles).
- Bureau of Federal Credit Unions. 1965-1969b. *State-Chartered Credit Unions*.
- Bureau of Labor Statistics. 1930-1953. "Credit Union Movement in the United States" (and similar titles). *Monthly Labor Review*.
- Clark, Lincoln. 1944. "The Credit-Union Legal Framework. II" *The Journal of Business of the University of Chicago* 17 (1): 51-66.
- Crofton, Stephanie O., Luis G. Dopico, and James A. Wilcox. 2010. "American Share Insurance: the Sole Surviving Private Deposit Insurer in the United States." *Essays in Economic and Business History* 28: 27-40.
- Crofton, Stephanie O., Luis G. Dopico, and James A. Wilcox. 2012. "Conversions and Capital of Mutual Thrifts: Connections, Problems, and Proposals for Credit Unions." *Essays in Economic and Business History* 30: 31-38.
- Croteau, John T. 1952. "Federal Credit Union Liquidations, 1935-1951." *The Journal of Business of the University of Chicago* 25 (3): 187-203.
- Credit Union National Association. 1975. *Comparative Digest of Credit Union Acts*. Madison, WI.

- Credit Union National Association. 1981. *Legislative History of the Federal Credit Union Act*. Madison, WI.
- Credit Union National Association. 1999. *Field of Membership Litigation Summary*. Madison, WI.
- Credit Union National Association. 2010. *Capital Reform for Credit Unions*. Madison, WI.
- Credit Union National Association. 2018. *Long Run Trends (1939 - Present)*. Madison, WI.
- Dopico, Luis G. 2000. *Financial Integration, Banking Performance and Economic Growth: An Analysis of the Effects of Intrastate Branching and Interstate Banking*. Doctoral Dissertation, Auburn University, AL.
- Dopico, Luis G. 2014. *Estimating the Impacts of the Activities of the Office of Small Credit Union Initiatives (OSCUI) on Small, New, Low-income, Rural, and Minority Credit Unions*. NCUA Impact Analysis Study. Alexandria, VA.
- Dopico, Luis G. and James A. Wilcox. 2009. *Characteristics of Credit Union Mergers: 1984-2008*. Madison, WI: Filene Research Institute.
- English, William B. 1993. "The Decline of Private Deposit Insurance in the United States," *Carnegie-Rochester Conference Series on Public Policy* 38: 57-128;
- Federal Deposit Insurance Corporation. 2018a. *Historical Statistics on Banking*. [www2.fdic.gov/hsob/index.asp](http://www2.fdic.gov/hsob/index.asp).
- Federal Deposit Insurance Corporation. 2018b. *Annual Report*. [www.fdic.gov/about/strategic/report/2017annualreport/2017AR\\_Financial.pdf](http://www.fdic.gov/about/strategic/report/2017annualreport/2017AR_Financial.pdf).
- Federal Reserve. 1959. *All-Bank Statistics US 1896-1955*.
- Froman, Lewis A. 1935. "Credit Unions." *The Journal of Business at the University of Chicago* 8 (3): 284-296.
- Ham, Arthur H. and Leonard G. Robinson. 1923. *A Credit Union Primer*. New York: Russell Sage Foundation.
- Ham, Arthur H. and Leonard G. Robinson. 1930. *A Credit Union Primer*. New York: Russell Sage Foundation.
- Moody, J. Carrol and Gilbert C. Fite. 1984. *The Credit Union Movement: Origins and Development 1850 to 1980*, 2<sup>nd</sup> Ed. Dubuque, IA: Kendall/Hunt.
- Morman, James B. 1920. "Cooperative Credit Institutions in the United States." *Annals of the American Academy of Political and Social Science* 87: 172-182.
- National Association of State Credit Union Supervisors. 2005. *Alternative Capital for Credit Unions ... Why Not?* Washington, DC.

## Credit Union Capital and Insurance

- National Credit Union Administration. 1970-2018a. *Annual Report* (and similar titles). Alexandria, VA.
- National Credit Union Administration. 1970-1979b. *State-Chartered Credit Unions*. Alexandria, VA.
- National Credit Union Administration. 2010. *Supplemental Capital White Paper*. Alexandria, VA.
- National Credit Union Administration. 2018c. *5300 Call Report Quarterly Data*. Alexandria, VA.  
[www.ncua.gov/DataApps/QCallRptData/Pages/CallRptData.aspx](http://www.ncua.gov/DataApps/QCallRptData/Pages/CallRptData.aspx).
- National Credit Union Administration. 2018d. Databases on Credit Union Failures, Insurance Losses, Voluntary Liquidations, New Credit Unions, and Mergers. Alexandria, VA.
- Neifeld, M. R. 1931. "Credit Unions in the United States." *The Journal of Business of the University of Chicago* 4 (4): 320-345.
- Parker, Florence Evelyn. 1927. *Cooperative Movement in the United States in 1925 (other than Agricultural)*. US Bureau of Labor Statistics.
- Parker, Florence Evelyn. 1935. *Consumers' Credit and Productive Cooperation in 1933*. US Bureau of Labor Statistics.
- US Congress. 2013. *Federal Credit Union Act*.  
[www.ncua.gov/Legal/Documents/fcu\\_act.pdf](http://www.ncua.gov/Legal/Documents/fcu_act.pdf).
- US Senate. 1934. *Federal Credit Union System*. Report No. 555.
- US Senate. 1970. *Federal Share Insurance for Credit Unions*. Report No. 91-1128.
- Wilcox, James A. 2002. *Subordinated Debt for Credit Unions*. Madison, WI: Filene Research Institute.
- Wilcox, James A. 2003. *Capital Instruments for Credit Unions: Precedents, Issuance, and Implementation*. Madison, WI: Filene Research Institute.
- Wilcox, James A. 2005. *Failures and Insurance Losses of Federally-Insured Credit Unions: 1971-2004*. Madison, WI: Filene Research Institute.
- Wilcox, James A. 2011. *Reforming Credit Union Capital Requirements*. Washington, DC: K&L Gates.



**Appendix One: Key Legislation Regarding Credit Union Capital**

Legislation name	Year	Brief description
New York Credit Union Law (NYCUL)	1913	One of the earliest state credit union laws and a template for the later laws of many states  Required flows of net earnings into reserve (capital) accounts
Uniform Credit Union Law	1920s	Template developed by the Credit Union National Extension Bureau, the forerunner of the Credit Union National Association, as a basis from which states could draft their own laws
Federal Credit Union Act (FCUA)	1934	Created the federal credit union charter
An Act to Amend the FCU Act	1949	Lowered credit union reserve (capital) requirements
Credit Union Share Insurance Act (CUSIA)	1970	Provided federal insurance for credit union shares, turning them from equity-like to debt-like.  Lowered credit union reserve (capital) requirements
Depository Institutions Act	1977	Lowered credit union reserve (capital) requirements
Credit Union Membership Access Act (CUMAA)	1998	Increased credit union capital requirements, first setting minimum capital to asset ratios