Bank Ownership Structure and Performance: An Analysis of Cooperative and Mutual Savings

Banks

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Introduction

The current financial crisis has stretched from mid-2007 to the present day and is likely to continue for several more months. Originating in the U.S. housing market, the crisis spread all over the world with enormous repercussions. The U.S. unemployment rate has reached 9.5% in July 2009, a mark not seen since August 1983 (Davidson 2009). Homes in the U.S. have lost over $14.33 trillion in value since the market's peak in 2007 (Bailey and Elliot 2009). Without a doubt, the current economic crisis is extraordinary. Calls for greater financial regulation in the U.S. and elsewhere have spawned from a loss of faith in financial companies, who bear much of the blame for this disaster.

Hans Groeneveld and Bouke de Vries (2009) identify five primary causes for the collapse: historically low interest rates due to expansionary monetary policy, increased lending and the boom of sub-prime mortgages, introduction of new financial products including collateralized debt obligations, a failure of supervision from regulatory agencies and private rating companies, all while strong economic performance in the years leading up to the collapse drove up demand for real estate and expectations of future prices. Each of these causes contributed to a rapid and unsustainable increase in home prices and lending volume. Increases in interest rates by the Federal Reserve popped the bubble; mortgage defaults increased as those holding adjustable rate mortgages saw their monthly payment increase dramatically. This in turn led to falling home prices, causing more defaults, further decreases in home prices, and massive losses for investment firms. The collapses of Lehman Brothers, Bear Stearns, Fannie Mae, Freddie Mac, Merrill Lynch, and AIG all contributed to the obliteration of public confidence in the U.S. financial system.

Credit cooperatives have historically offered an interesting alternative to profit-driven banks. In Europe, these cooperatives play an large role. The Danish Rabobank enjoys extensive market penetration with nearly 50% or all Danish citizens as members (Birchall 2009). Other cooperatives account for some of the largest banks in Europe and the world; these include the Pohjola Group of Finland, Credit Agricole of France, and Raiffeisen of Germany. These cooperatives have been noted for their conservative investment practices.

Significant research has been done regarding the affects of cooperative ownership structures on firm performance and stability. However, this research is not so extensive in U.S. and Canadian cooperative banking. Even less has been done using data from recent years that reflect how firms have reacted in the stress of the recent financial crisis. In researching stability of ownership structures, using data from times of great economic distress will provide insight into how cooperatives affect the welfare of the economy as a whole. As the world strives to take measures that will help prevent a financial collapse such as this from happening again, cooperatives offer a possible change from the joint-stock bank that many blame for the crisis. The aim of this paper is to determine what effects credit cooperatives have on financial systems and whether or not they can contribute to a new era of finance.

The paper will follow with a review of the existing literature. This section will define terms and provide background information on basic ownership structures. After which there will be a section identifying hypothesis for differing behavior resulting from different ownership structures. By identifying these hypotheses, the paper establishing a framework for which explore through the remaining sections. These hypothesis will be reviewed in comparison to existing empirical literature. Then some of the hypotheses will then be tested against new

qualitative and quantitative research. In conclusion, the paper will recount its findings and relate them to issues of public policy.

Literature review

Definitions and Institutions

The International Cooperative Alliance defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise" (ICA.coop). Cooperatives have two primary characteristics, the first of which is ownership by persons with a relationship extending beyond that of an investor, most commonly as a customer or employee. The other definitive attribute is a "one member, one vote" principle whereby each member has the same voting power despite their monetary investment in the firm (Jones and Kalmi 2008). These two characteristics are distinct from those of commercial banks in which investors can be related to the bank only through their ownership; each owner receives influence proportionate to their investment. These contrasting characteristics result in dramatically different incentives for managers and behavior by firms that are discussed further in this paper.

Savings banks are banks whose business focuses on retail banking and interest-bearing activities such as savings accounts and mortgages. Some savings banks are owned by their depositors similar to the ownership structure of cooperatives; these savings banks are known as mutual savings banks. However, unlike cooperatives, mutual savings banks do not give equal voting rights to each member (CUNA). Instead, mutual savings banks have voting systems that favor large depositors. Mutual savings banks also operate for the profit of their owners, and they are unrestricted in who they may have as customers. It is because of these fundamental differences that mutual savings banks are not exempt from income taxes while credit

cooperatives are. Nevertheless, these mutually owned banks represent an intermediary ownership structure between cooperatives and commercial banks.

Up until the 1980s, mutual savings banks dominated the market for deposits and mortgages in the US (Chaddad 2003). Mutual savings and loan associations accounted for 73% of the thrift industry's assets (Chaddad 2003). However, the 1980s gave way to a wave of demutualizations, the process whereby mutually held firms convert into joint-stock firms. Between 1975 and 1989, a total of 762 mutual savings banks demutualized (Chaddad 2003). This trend was sparked in part by the Garn-St. Germain Depository Act of 1982 that made it considerably easier for mutual savings banks to demutualize. This bill and other simultaneous deregulation of the finance industry made demutualization more profitable. Chaddad argues that managers of mutually owned thrifts act in their own interest due to disperse ownership rights and caused them to demutualization (as this likely would mean substantially higher pay); these principal-agent issues will be discussed further in the following subsection. The result of these conditions is the dramatically reduced presence of mutual savings banks; joint-stock firms now hold roughly 90% of the thrift industry's total assets (Chaddad 2003).

A subset of cooperative banks exist called credit unions. For the purposes of comparing organizational structures, this paper will treat cooperative banks and credit unions as one and the same. These credit unions are by far the most popular form of cooperative bank in the United States and Canada. They are distinguished by the requisite membership (ownership) by all customers as well as a common bond between members; this is most commonly regional, occupational, or religious. In the United States, credit unions can be chartered by the federal government or by a state. Insurance is provided on the federal level by the National Credit Union Share Insurance Fund for up to at least $250,000. Table 1 shows credit union penetration into the

US market for common financial products. They have consistently had penetration of over 14%

in credit cards, and nearly 11% of used car loans (CUNA). While credit unions certainly

represent a minority in the market for financial services, their role is not without importance,

particularly with small and unsecured loans.

In the United States there exist over 10,000 credit unions with total assets of more than

$480 billion, serving over 79 million customers (NCUA). The largest credit union in the US is

the Navy Federal Credit Union with over 3 million members and nearly $39 billion in assets.

Canada has two popular forms of consumer-owned banks. While they have many credit unions,

Canadians also use caisses populaires, which are concentrated and extremely popular in Quebec;

the two are identical, the latter merely a French version of the former. Canadian cooperative

financial institutions have the highest penetration of any country. 70% of Quebec residents are

members of caisses populaires, and nearly 60% of Saskatchewan residents are members of credit

unions. On the whole, roughly one third of Canadians are members of credit cooperatives

(DFC). Figure 1 shows the market share of Canadian coop banks in basic financial product

categories; similar to the U.S., cooperatives hold a minority share of the market, but with double-

digit shares of residential mortgages and deposits, cooperatives do play a significant role. The

role of coops in Canada is more significant in providing mortgages then in the U.S. where an

emphasis is on smaller and unsecured loans. The largest cooperative in Canada is the Caisses

Populaires Desjardins, a network of caisses populaires in Quebec, with nearly $135 billion USD

in assets, making it the sixth largest financial institution in Canada (Desjardins.com).

Conceptual Framework

In this section, hypotheses of the affects of organizational structures on bank behavior will be identified. Wim Fonteyne extensively discusses the theoretical comparative advantages and disadvantages of cooperative banks. He identifies the informational advantages of cooperatives over commercial banks. Cooperatives were originally designed to ameliorate issues of information asymmetry (Fonteyne 2007). In a conventional bank in the 1800s, borrowers knew considerably more about their credit worthiness than lenders. With cooperatives, a small group of members (also borrowers) would be able to determine a borrower's credit worthiness with greater accuracy because the members would know the borrowers in the community. The reduction in information asymmetry was also met by the shifted incentives faced by the management. In a commercial bank, stockholders demand managers to make decisions that maximize profits; by contrast, the owners of credit cooperatives demand that managers maximize the welfare of consumers (who are also the owners).

In maximizing consumer welfare, cooperatives behave differently than profit-maximizing banks. Cooperatives establish "intergenerational endowments" to benefit future generations of consumers (Fonteyne 2007). They continuously accumulate capital in reserves that are outside of the ownership rights of members, whose equity only extends to the notional value of their membership shares. This results in an endowment with only future owners. Fonteyne likens cooperative managers to "custodians of this endowment."(Fonteyne 2007) In their efforts to maximize consumer welfare, managers might provide financial products at below profit-maximizing rates. Managers might also extend their services into rural areas that may be unprofitable. Additionally, cooperatives (especially credit unions in the US and Canada) may donate money and efforts to their community.

Informational advantages ought to be particularly evident in small credit unions. The common bond of a credit union provides information about consumers as well as a smaller breadth of socio-economic backgrounds to accommodate with products and rates. Similarly, consumer-owned firms have an advantage in identifying the desires of their customers. By having voting owners who are also customers, firms gain an informational advantage. It should be noted, however, that this advantage has been significantly decreased over the past decade. Credit rating services have evolved dramatically and now commercial banks and coops hold similar insight into the credit-worthiness of borrowers. To further mitigate this advantage, the distance between managers and members tends to increases over the life of the coop (Fonteyne 2007). This separation is driven by managers' desires to benefit from economies of scope and scale. As the bank collects more deposits, expands to serve a larger market, and develops more sophisticated protocols, customers exert less control over managers, and managers know less about customers. This distance increase through the life of the bank until commercial and cooperative banks are nearly indistinguishable in this respect. Sometimes this process results in the demutualization of the coop. The legal transformation from a cooperative to a joint-stock company may become a tempting as it allows the current members to acquire control of the intergenerational endowment. Demutualization also benefits managers, as they are likely to earn more at comparable joint-stock firms; however, the decision to do so neglects the negative impact on future members.

Cooperatives have a significant advantage over commercial banks in the cost of capital. While commercial banks must remunerate all of their earnings to shareholders, owner equity only extends to the total value of membership shares. Coops do not pay owners on earnings of the "intergenerational endowment." Moreover, cooperatives tend to pay-out less on equity than

commercial firms. Members usually purchase the minimum required shares acting as a membership fee; many members do not view the shares as investments, as they have very low returns. This dramatically lower cost of capital is possibly the largest advantage cooperatives have over other ownership structures. The low cost of capital makes it possible for managers to transfer this advantage to members in the form of lower lending rates and higher interest on deposits. In effect, as Fonteyne says, "[cooperatives] incorporate their profits into their products." The benefits of this lower cost of capital have been somewhat mitigated in recent years.

Another comparative advantage enjoyed by coops is a strong and loyal customer bases. In the case of credit unions, this is especially true given their clearly defined target market; this may be regional, occupational, religious, or any other common bond. Cooperative customers have a stronger connection to their bank than do commercial bank customers. Because of this, cooperatives are able to capture larger portions of their target market. Coops also have loyal employees. Employees tend to be from similar backgrounds as their customers, and thus form stronger relationships (Juvin 2005). The coop employees also have greater job security and more extensive roles in terms of decision-making (Becht et al., 2002). This loyalty is exemplified by the vast number of volunteers at credit unions in the United States (Klinedinst, n.d.). Coops also benefit from extensive branch networking, disproportionate to their size (Fonteyne, 2007). These networks aid banks by providing more skilled management in apex bodies. With this centralized management, further diversification of investments can be made; although research has shown that this diversification can be detrimental to credit unions in the US (Goddard et al., 2007). Along with their loyal customers, these branch networks help cooperatives to retain deposits

during mobilizations; commercial banks often find it quite difficult to move, as they are unable to retain many customers, forcing them to essentially start from scratch (Fonteyne 2007).

Perhaps the most basic and important comparative advantage that consumer-owned banks have is the ability to curb opportunistic behavior by managers. These banks have the explicit intention of maximizing consumer welfare; it is not their goal to maximize profits through the exploitation of information asymmetries. This is particularly crucial in the 21st century, given the breadth and complexities of financial products; all banks hold great advantages over their clients due to a greater understanding of products. This, in addition with "lock-in" from long-term contracts, is often exploited by commercial banks (Fonteyne 2007). The consumer-owned structure of credit cooperatives does not encourage this behavior and allows for greater client-bank trust.

Fundamentally, the cooperative structure has advantages in avoiding principal-agent problems. In the joint-stock company structure, the principals (stockholders) are diversified in their investments so their investment in a given company is small; down-side losses are limited to the market value of their shares, the up-side gains are potentially unlimited. Because of this, principals of commercial banks have high risk appetites. Managers, who wish to avoid bankruptcy as it would mean losing their job and marring their resume, may have much lower risk appetites. Conversely, managers who desire dramatic and fast results may have higher risk appetites than investors. This discrepancy between principal and agent is partially remedied by compensation packages; these include stock options that encourage manager efforts to raise stock prices. There also tend to be the implicit guarantee of large severance packages that further encourages managers to take risks. However, this alignment of incentives for managers to take on risk neglects many lower employees who are neither involved in decision-making, nor benefit

from the added risk[2]. The cooperative ownership structure resolves some of the principal-agent

problems. The members (in the case of credit unions, all customers are members) are the

principals; do not wish to maximize profits and so they have much lower risk appetites. Ory and

Lemzeri (2007) discuss "agency costs" faced by French cooperatives. Managers at cooperative

firms are subject to much less disclosure regulation than joint-stock firms. Moreover, coop

managers do not face market discipline. While principals of joint-stock banks have stock prices

(influenced in part by ratings from third-party analysis) to gauge manager performance, coop

principals have a much more difficult time in monitoring managers. This difficulty is

exacerbated by the dispersed ownership of cooperatives. In joint-stock firms, large shareholders

have the financial means to travel to shareholder meanings and enough power to exert pressure

onto managers, thus benefiting the smaller shareholders who do not have the means to attend

meetings or make informed decisions about the company. Cooperatives have a democratic "one

member, one vote" setup that makes collective action difficult (Ory and Lemzeri 2007).

Members are rationally ignorant, as their one vote is unlikely to have any influence. Managers at

cooperatives can allow inefficiencies to linger without principal action being taken against them.

This lack of oversight makes cooperatives prone to managerial problems. These can be as

blatant as embezzlement, or subtler, like empire-building (Fonteyne 2007). Managers can be

tempted by the large intergenerational endowment to engage in expansion that does not serve the

cooperative's ultimate purpose of maximizing consumer welfare. In the interest of self-

promotion, managers might wish to grow their firm to the detriment of members.

　　　　This lack of managerial vigilance can also be exacerbated by a chronic issue with

cooperative banks- low profitability. Strictly in terms of financial remuneration for owners,

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2 Many companies encourage employee stock-ownership through programs such as employer-matched
investments or discounted stock options. This increases employee up-side risk exposure.

coops are generally not as profitable as commercial banks. This makes it difficult to pay

employee salaries competitive with commercial banks. Fonteyne (2007) notes that coop pay

scales are generally flatter than their competitors, making it difficult to acquire top talent. This is

especially true for managers, who command very large remuneration packages at commercial

banks. US credit unions generally have difficulty expanding their non-interest income because

their employees (some of which are volunteers) typically do not have the financial sophistication

to engage in complex investment schemes (Goddard et al., 2007). However, Juvin (2005)

suggests that talented managers can be encouraged to accept lower pay because of the "social

standing and […] elevated feeling of utility," that come with working at a cooperative.

Cooperative banks have been charged with being unable to quickly raise capital in times

of stress. Because of their strictly defined target market (some credit unions are legally bound to

their constituency), and their reliance on retail-based income, coops are unable to raise capital as

quickly as commercial banks which have much more freedom in pursuing depositors (Fonteyne

2007).

Another criticism of cooperatives is that their typically small and homogenous pool of

depositors leaves them vulnerable to volatilities in their specific market. Rather than having

their risk hedged by a heterogeneous customer population, like larger commercial banks, coops

are subject to the full force of swings in their individual market. However, these volatilities can

be limited by branch networking and financial markets through such derivative products as credit

default swaps.

Policy Issues

Credit Unions in the United States are classified as not-for-profit institutions. Not-for-

profits may earn profits; however, this is secondary to their primary objective (in the case of

credit unions, to maximize consumer welfare). This status exempts credit unions from paying any income tax. Many argue, especially those from commercial banks that this is unwarranted and gives credit unions an unfair advantage. Given the enormous and growing debt held by the federal government, taxation of credit unions exists as an appealing source of funds[3]. This debate hinges upon one essential question: Do credit unions provide a positive externality to the United States sufficient to warrant such tax exemptions?

Arguments in the favor of tax exemption are largely based upon the assumption that they are more responsible and more stable firms. If this is true, then encouragement in the form of tax exemptions would be appropriate to achieve greater stability in the financial system. With more credit unions, the contagion affect would be limited and banks in general would be safer. This extends to the need for FDIC insurance.

Many involved with credit unions have cited the recent bailout of large commercial banks in the TARP and AARP bills as unjustly prejudiced against credit unions. Credit unions did not receive any assistance from these colossal injections of capital. Some argue that the large commercial banks were wantonly reckless in their investment practices and therefore do not deserve federal aid. Still, this argument neglects the severe repercussions of a collapse of the banks that received aid, all of which are much larger than most U.S. credit unions. Additionally, former Secretary of the Treasury Henry Paulson forced many of these banks such as Bank of America into accepting aid. The accusation of unfair treatment for credit unions is further discredited by the fact that Congress temporarily increased the insurance of credit union deposits from $100,000 to $250,000 for 2009.

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3 As of 8/4/09, the total public debt of the US is $11,659,644,290,011.89 (treasurydirect.gov).

Previous Empirical Research

This section will review empirical research concerning previously presented hypotheses as well as identify gaps in research that I hope to fill with new empirical research. The question of whether or not financial cooperatives help or hurt the financial stability of an economy is addressed in a 2007 paper by Heiko Hesse and Martin Cihak. It may be the case that in a given economy, cooperatives are themselves less likely to face insolvency than commercial banks, yet negatively impact the stability of the financial system as a whole. Hesse and Cihak cite the potential problem of cooperatives neglecting profits as a cause for instability, as a bank's balance sheet could grow while capitalization lags behind. Another possible cause of instability in the financial system could come from coops using their low cost of capital to extend below-market rates on products and weaken competing commercial banks' profitability (Hesse and Cihak 2007). In their empirical analysis of cooperative banks throughout the world using Bankscope data covering the years from 1994 to 2004, a z-score was used as a measure of distance from insolvency. This z-score parameter has become popular, also used in a 2009 Beck et al., paper on German bank stability. The z-score is calculated as the negative of the sum of the return on assets (net income divided by total assets, ROA) and capital to asset ratios (CAR) divided by the standard deviation of the return on assets. Assuming that profits follow a normal distribution, the z-score is the number of standard deviations that a given bank's return on assets can fall below its expected value before the bank is insolvent. A higher z-score is more desirable. They found that the average z-score of cooperative banks were considerably higher than commercial banks; however, cooperatives profitability (ROA) and capitalization (CAR) were generally lower than for commercial banks[4]. What made the cooperatives more stable was their small standard deviation of returns on assets. Hesse and Cihak credit this low volatility to the use of customer surplus as a buffer for volatile returns. Because coops embed their profits

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4 Beck identifies several limitations of the z-score as a measure of the risk of insolvency. Neglecting the possibility of a series of losses (as is often the case for banks in recessions), the z-score only measures risk at a single point in time. The z-score is also dependent on accounting data, which may be of varied quality between banks; this also means that the z-score does to account for volatility within profitability and capitalization during an accounting period, only the end data is used.

into their products, they are able to bring rates closer to market-price during rough economic climates. In regards to the wider financial system, commercial banks with already low z-scores where weakened further by a strong presence of cooperative banks. On the whole, coops have a positive and significant impact on the overall stability of most banking systems. Still, the results were inconclusive in some areas, particularly in the United States, upon which data was scarce.

Every bank is part of a greater financial system, and credit cooperatives are no exceptions. So long as a bank borrows and lends in the inter-bank network, purchases or sells assets, or even offers products in a market already served by another bank, it has an effect on other banks. This is the source of the contagion affect among banks. While it is uncommon for banks to experience outright failure, when it does happen, it tends to happen in groups (Poghasyan and Cihak 2009). There are several possible reasons for one bank failure leading to another. A failing bank, in efforts to raise capital and avoid insolvency, will sell off assets. Other banks holding similar assets will see the value of their assets decrease as the market is flooded by the failing bank's assets. Another reason may be that investors will flee from the types of banks in which failure has been seen. Herding may occur because useful information can be difficult to acquire and interpret, so inexperienced investors might follow those who they believe are more informed. These contagion effects are stronger among more similar banks. In their 2009 paper, Poghosyan and Cihak found that a contagion dummy reveals statistically significant correlations with bank failure at the 99 percent confidence level.

In a study of French cooperatives, Ory and Lemzeri (200?) refute the hypothesis that credit cooperatives face difficulties raising capital in times of stress due to their constrained customer pool. They cite adequate equity to total assets ratios as being crucial to the stability of French cooperatives. Ample reserves provide a buffer for cooperatives during times of economic stress. The ability to sell membership shares is also a unique source of revenue that acts as an advantage over "public limited company" banks in France. The paper also addresses several other hypotheses, including the lower profitability of cooperatives. In their econometric analysis of French banks and cooperatives from 1995 to 2004, the return on average assets ratio for cooperatives was higher than those of PLC banks.

Furthermore, cooperatives generated higher operating incomes than their PLC peers when controlling for total assets. This greater profitability is credited in part to higher capitalization of cooperatives. It should be kept in mind that the social and legal conditions of France are considerably different from those of the United States and could limit the relevance of this study to issues of US cooperatives.

In a 2007 paper, Goddard, McKillop, and Wilson research the affects of revenue diversification on the performance of credit unions in the US. They address the hypothesis that credit cooperatives are overly cautious, failing to invest enough capital to truly maximize their members' welfare. They found that in US credit unions between the years 1993 and 2004, the loan to asset ratio is 62.38%. This ratio is a measure of lending specialization. The authors found this to be somewhat low, citing the WOCCU's recommendation of a loan to asset ratio of between 70% and 80%. They also find that larger credit unions have been able to diversify their revenue streams by offering new products such stock and bond brokerage and financial planning by embracing technological advances. However, smaller credit unions have lagged behind their larger counter-parts. Credit unions with assets under $2 million have a ratio of non-interest revenue to total revenue of only one third that of credit unions with over $100 million in assets. This is credited in part to the lack of experience of managers and employees of these smaller cooperatives. For larger credit unions, non-interest revenue has higher volatility than revenue from interest-bearing activities, the overall revenue portfolio is not negatively affected due to the stabilizing effect of revenue diversification. Contrastingly, in the case of smaller credit unions, the destabilizing effect of non-interest revenue outweighs the stabilizing effect of revenue diversification.

Another study of US credit unions by Mark Klinedinst compares their worker productivity with those of other banks. He finds that while commercial banks have higher ratios of assets to employees, this is due to economies of scale in the larger commercial banks. When controlling for the total assets, credit unions actually have higher assets to employee ratios than other banks. On average, "each credit union employee handles about $22,934 more a year in assets" in his study of banks in the twelve southern counties of Mississippi and New Orleans post hurricane Katrina (Klinedinst, n.d.). This refutes the hypothesis that credit cooperatives have less productive employees due to their inability to attract talented

and experienced personnel due to lower remuneration. Klinedinst offers two explanations for this increase efficiency. First, credit unions may benefit from greater use of electronic services; this could be due to the average member being more technologically savvy as well feeling more secure than customers of larger banks. Second, managers may not need to supervise employees as closely in credit unions due to employees' "stronger identification with the goals of the firm" compared to those of commercial banks (Klinedinst, n.d.).

In the specific context of credit crunches, Giovanni Ferri (n.d.) claims that cooperative banks help to limit their dangerous symptoms. Citing the Asian crisis of 1997 and 1998, he outlines three primary ways in which coops help during times of dramatically reduced credit availability. First, "credit cooperatives exhibit less credit rationing" (Ferri, n.d.). Second, "[they] practice lower increases in loan rates at times of stress;" and finally, "[they] are more stable during financial stress" (Ferri, n.d.). These claims were based on evidence from quickly developing Asian countries and may very well not hold true for the economically established United States and Canada.

In the 2009 paper "European co-operative banks: First lessons of the subprime crisis," Hans Groeneveld and Bouke de Vries address similar questions to those of this paper with the primary difference that they look as European banks. They find that in a small sample of European banks from 2002 to 2007, cooperatives had significantly better capitalization than commercial banks and comparable cost to income ratios and return on equity. This means that cooperatives were in a better position to sustain losses prior to the global financial crisis than commercial banks. The credit default swap spread, which indicates the probability of a bank defaulting on its loans, remained in lock-step for a small sample of commercial and cooperative banks in Europe through 2008. The authors assert that at the time of publication (July 2009), it was too early to determine with certainty the health of cooperatives as a whole relative to commercial banks. Both cooperatives and commercial banks have suffered losses, especially in areas of non-interest revenue. However, the authors do claim that due to strong performance and capitalization prior to the collapse, as well as a lower emphasis on unconventional financial products

(mortgage backed securities, collateralized debt obligations, etc.), cooperatives look to be able to survive the financial crisis at least as well as their commercial counterparts.

Johnston Birchall and Lou Hammond Ketilson offer a qualitative assessment of cooperatives in the current crisis in the 2009 paper: "Resilience of Cooperative Business Model in Times of Crisis." They claim that credit cooperatives are fairing extremely well, gaining members from commercial banks that have lost credibility in the eyes of consumers. Assets and deposits for cooperatives have actually grown in since the start of the financial crisis; the Credit Union National Association predicts deposits in US credit unions to grow by 10% in 2009. Birchall also points out the increased lending of US credit unions in 2008 as a signal that cooperatives are remaining strong in the financial crisis as well as helping to ease the credit crunch.

On the whole, existing empirical research does confirm many of the hypotheses presented earlier. It appears that cooperatives do tend to behave more cautiously than commercial banks. It has been shown that in some countries cooperatives are better capitalized and are able to tap into reserves during times of stress (Hesse & Cihak, 2007). It is inconclusive whether or not cooperatives suffer from inefficiencies due to principal-agent problems. Additionally, it remains unclear whether or not coops are truly less profitable than profit-focused institutions. Large gaps remain in the literature surrounding the questions of this paper. There is limited evidence from the current financial crisis, much less so of rigorous econometric quality. Moreover, research of the US banking system has largely neglected cooperatives, leaving most research on credit cooperatives to concern only those in Europe. This paper aims to fill these research gaps in two ways, the first of which is an overview of the most recent qualitative evidence of US credit union performance. This is in large part an update of Birchall and Ketilson's work. The second route will be a fresh econometric analysis of organizational structures prior to and during the start of the financial crisis will be offered using the financial data from US commercial banks, savings banks, and cooperatives from 2002 to 2008.

Stability Measurement

One of the greatest difficulties in determining the effect of a financial crisis on a bank, and the effect of a bank on the greater financial system is measuring the stability of a bank. Stability can be broadly defined as the ability for a bank to withstand an unfavorable economic climate. Among the traits that would be allow for a greater degree of stability would be strong capitalization, low earnings volatility, and high profitability. However, quantifying this ability is quite difficult. Three methods of stability measurement are presented here. Each one is slightly different, all rely on financial ratios, and all suffer from similar limitations.

As a measure of bank stability, the United States Federal Reserve Bank and National Credit Union Association use a CAMEL rating system. This is an objective criterion for all banks. CAMEL stands for the five areas in which a bank is graded: capital adequacy, asset quality, management competence, earnings strength, and liquidity risk exposure. A variation on this system is CAMELS, and includes a criterion for market risk sensitivity. A CAMEL score is given on a scale of 1 to 5 (where 1 is the best and 5 is the worst). Any score below two is considered unsatisfactory and grounds for closer inspection. The score is given based largely on financial ratios. This system is mirrored by the PEARLS rubric used by the World Council of Credit Unions. PEARLS stands for protection, effective financial structure, asset quality, rates of return and costs, liquidity, and signs of growth. While the PEARLS monitor is aimed at smaller credit unions in less developed countries, particularly those engaged in microfinance, the similarities between it and CAMEL are obvious.

Wendell Fountain notes this similarity, adding that PEARLS is aimed at removing the subjective measurements in the CAMEL rating, which requires an on-site inspection to determine the competency of management. Aside from issues of inconsistency, the subjective rating system is costly time-consuming, precluding frequent inspections. In the United States, banks are inspected every 12 months, with exceptions given the small and well-capitalized banks, which need only be inspected every 18 months. Fountain offers his own assessment system of key financial ratios for credit unions. For each of the 8 ratios, a "zone of acceptance" is given that signifies the optimal range for the financial ratios. Table 2 summarizes these ratios, their zones of acceptance, and the relevance to the performance of the credit

union. Table 3 summarizes the PEARLS ratios and their optimal levels. It appears that PEARLS is a disaggregated form of the "zones of acceptance." Instead of the 6 ratios used by PEARLS to examine "Protection," Fountain uses net capital/assets. For "Effective Financial Structure," Fountain uses gross spread and loans/shares; for "Asset Quality," loan delinquency ratio and net charge-offs/average loans; for "Rates of Return and Cost," operating expenses/operating income and net return on average assets; for "Liquidity," net capital to assets; for "Signs of Growth," number of members per employee.

The CAMEL system is often simplified into an entirely quantitative method of determining bank health. While this simplification does not attempt to retain all the characteristics of the original system, it values the same aspects of a bank's financial records as important to the overall health of the firm. One of these simplifications includes only 6 ratios: total equity/assets, loan loss provisions/total loans, cost/income, profit before taxes/total equity, and liquid assets/total assets (Poghosyan and Cihak 2009). Table 4 summarizes these CAMEL ratios. Worth noting is the similarity with the other methods of stability measurement. A valid criticism of these methods is that they fail to fully capture the true risk of failure. Bank collapses, such as those of the current crisis, often spawn out of extraordinary circumstances. Off-book contracts, most notably credit derivatives, would be unaccounted for by any of these measurements. Additionally, measurements of liquidity only show trouble directly before a collapse. When a firm faces cash flow issues, it is often only a matter of months or weeks before insolvency; the financial ratios used by these three methodologies are lagged and therefore cannot provide due warning of troubles within a company. A qualitative search of banks also suffers from similar issues of lagged financial data. However, whereas a comprehensive database such as BankScope might only offer data taken from annual reports, qualitative research benefits from the availability of quarterly reports and press releases.

Empirical Research

Qualitative Evidence

In this section, fresh empirical evidence will be presented regarding the performance of credit cooperatives in the financial crisis. An Internet search for articles on credit unions reveals several telling indicators of their performance. One of the most apparent trends in these articles is the volatility in earnings caused by homogeneous depositor populations. This supports the previously identified hypothesis that the narrowly defined target markets for cooperatives leaves them susceptible to bear the full effects of volatility in that market's earnings. Credit unions associated with labor unions or specific industries are suffering along with their members. When the members of an electrical workers union, served by IBEW Local Union 80 Credit Union, were unable to find work, loans went unpaid. The credit union's non-performing assets rose to 10% in the first quarter of 2009 from 4.9% of one year ago (Schwartz 2009).

Cooperatives do appear to be extending credit despite high rates of default. In March 2008, the credit union auto lending market share sat at 12.9%; this number grew to a high of 22.7% in January 2009, remaining high into May when the last report showed a market share of 20.7% (Connors 2009). Having nearly doubled in the course of a year, the credit union lending market share appears to suggest that while other banks are restricting their credit, cooperatives are taking this opportunity to establish themselves in small loans, already a strong suit for US credit unions. California, facing insolvency, issued IOUs to pay its debtors starting in July 2009 (Luhby 2009). Within 10 days of the state issuing these IOUs, many large commercial banks refused to accept them; these banks include Wells Fargo, JPMorgan Chase, and Bank of America. Despite this, over 60 credit unions in the state continue to accept the IOUs, essentially extending credit to their members at no cost.

It appears that suffering the most are those credit unions whose business practices were most similar to commercial banks. The large corporate credit unions in the US do not engage in retail, instead, they service smaller credit unions. Most of these institutions held the mortgage back securities and other securities that have caused so much trouble for commercial banks. In March 2009, the NCUA seized two of these corporate credit unions (Kane 2009). With $57 billion in combined assets, U.S. Central Credit Union and Western Corp. Federal Credit Union represented two of the largest credit unions in the country. As commercial banks holding devalued mortgage backed securities were aided by the Troubled Assets Relief Program, credit unions were unable to benefit.[5]

An analysis of bank ratings appears to confirm the hypothesis that cooperatives are less likely to fail. Bankrate.com has a proprietary rating system for banks, thrifts and credit unions (bankrate.com). Their system is based upon four measures: capital adequacy, asset quality, profitability, and liquidity. This is not dissimilar from the CAMEL(S) or PEARLS systems. Ratings are defined as follows: 1 indicates "lowest rated;" 2, "below peer group;" 3, "performing;" 4, "sound," and 5, "superior." Institutions are broken into either credit unions or banks and thrifts. Distributions of the most recent ratings (as of July 22, 2009) show that while a higher proportion of banks/thrifts are awarded the "superior" rating, they also have a higher proportion of 1s. Compared to the banks/thrifts, credit unions have a more normal distribution. These distributions indicate that credit unions are more likely "sound" or "performing" than banks/thrifts. A possible explanation for this is that while greater capital reserves prevent many

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5 While TARP funds were initially intended to be used to purchase "toxic" assets such as MBSs from banks, the US Treasury controversially changed their strategy to buying preferred stock. Because credit unions do not offer preferred stock, they were unable to benefit from the massive injections of capital that commercial banks were.

credit unions from being rated as "lowest rated," low or mediocre earnings prevent them from earning a "superior" rating.

The are also indicators that US credit unions are experiencing issues with managerial behavior, perhaps due to lack of principal oversight. In July 2009, Bernie D. Metz, the former CEO of the failed Center Valley Federal Credit Union was charged with embezzling over $1 million (Huber 2009). Court documents report that Metz had stolen funds over a 5-year-period from the credit union. This case indicates that there might be considerable issues with supervision of cooperative management. Nevertheless, compared to commercial banks, cases of fraud in cooperatives are rare. It is possible that for the same reasons coop managers may be more likely to commit fraud, they are also more likely to do so without being caught.

A review of the 100 largest US credit unions (by assets) shows very strong performance in the first quarter of 2009. On average, loans grew 7.48% from the year before in the 100 largest credit unions, again indicating that credit unions are actually helping to ease the credit crunch (Filson 2009). Success is not universal though; while loans grew 70.64% at California Coast from the year before, loans retracted 16.46% at Texans. Delinquency ratios averaged 1.49% yet ranged from 11.26% to 0.14%; this average is still considered high by the standards provided by Wendell Fountain. Nevertheless, considering the state of the economy, this ratio is not terrible. Combined with the considerable growth in loans, the delinquency ratios show that credit unions are providing much needed credit without being reckless. Furthermore, these 100 credit unions actually increased their employment by 2,000 since March 2008. These numbers are important to monitor over the course of the crisis, but the data thus far is promising and supports Ferri's assertion that cooperatives are helpful in limiting the severity of credit crunches.

Quantitative Evidence

This section intends to test several hypotheses using a database of 10,511 banks in the United States compiled by Bankscope. This database includes similar financial performance data as those used by previously mentions stability indicators such as operating income, net charge offs, and total loans. Also included are basic firm data such as employment, and the state containing the firm's headquarters. The data is reported annually and spans from 2002 to 2008. Each bank in the dataset was assigned one of four ownership structure classifications: commercial, non-mutual savings, mutual savings, and cooperative. Several dummy variables were compiled from different sources in order to distinguish the four ownership structures. The variable "mutualFDIC" was created using a list of mutual savings banks provided by the FDIC; the FDIC classifies these as banks with a focus on deposits and loans that do not issue stock. The variable "mutualSTOCK" was created using an Internet list of mutual savings banks compiled for investing purposes and advertised as being a "complete nationwide directory"(depositors in mutuals stand to profit from demutualizations); while most of the banks on this list were also on the FDIC's list, there were roughly 200 banks on the FDIC's list that were not on this list (marketplacelists.com). The variable "coop" was created from classifications provided by Bankscope as well as Internet searches of all banks with "credit union" or "mutual" in their name. Bankscope classified the banks in the dataset as being a "commercial bank," "savings bank," or "cooperative." It is unclear how Bankscope classified the ownership structure of the banks in its database, it is perhaps most likely that this was done through self-reporting by the banks.

Of the 10,511 banks in the data set, 507 are mutual savings banks as defined by the FDIC, 315 are mutual savings banks as defined by Marketplacelists.com, and 23 are cooperatives (most of which are credit unions). The mean employment for mutual savings banks in the FDIC list is

about 56 with total assets of about $249,339,000; the mean employment of mutual savings banks in the investor's list is about 43 with mean total assets of $195,666,000. The mean employment of cooperatives is about 349 and mean total assets of $8,905,640,000.[6] The mean employment of banks that do not fall into any of the previous 3 classifications is about 250 with mean total assets of about $1,357,084,000. With these ownership classifications, two groups of hypotheses are tested: general hypotheses regarding the affect of ownership structures on performance, and hypotheses specific to the current financial crisis.

The mutual savings banks are not owned by outside investors as commercial banks and non-mutual savings banks are. Being mutually owned, they are owned by their depositors. The primary difference between cooperatives and mutual savings banks is that the former has equally voting rights for each member whereas the latter has voting rights proportional to the amount of business a customers does with the bank. Mutual savings banks provide an intermediate structure between cooperative and joint stock ownership. Using mutually owned savings banks as representative of a similar ownership structure can ameliorate the problem of the lack of cooperatives in the dataset (only 23 compared to the 507 mutual savings banks).

The first of the general hypotheses is that cooperative banks have greater capitalization than non-cooperative banks. This hypothesis has been proposed by many people, including Fonteyne. However, it has been refuted by findings from Hesse and Cihak (2007), who had expected to find better capitalization in European cooperatives.[7] Looking at the capital to assets ratio (CAR) we find that mutual savings banks as defined by the FDIC have considerably better

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6 The small sample of credit unions in this dataset is not a representative population in terms of firm size; the mean total assets of $8,905,640,000 is much larger than the national mean for credit unions of about $104,000,000 (CUNA). This is largely due to the inclusion of CoBank, ACB whose 2008 total assets were $61,200,000,000.

7 While Hesse and Cihak do not provide capitalization data on firms, they do mention that capitalization of cooperative banks was slightly worse than that of commercial banks.

capitalization than other firms. These mutuals show higher CARs than other firms for every year from 2002 to 2008. In 2002, the mean CAR for mutuals is .1261 compared to .1190 for other firms. In 2005, the mean mutual CAR is .1381 compared to .1275 for other firms. The mean CAR for cooperatives is dramatically lower for all years, never higher than the 2005 ratio of .0774 whereas all other firms showed a mean CAR of .1281 in the same year. These mean cooperative CARs are below Wendell Fountain's Zone of Acceptance for CARs, which he sets at between 8% and 10%. However, this finding is not a fair representation of cooperatives as observations for each year were only between 2 and 4. We would consider the data of mutuals to be more exemplary of the effects of constomer-ownership.

The second general hypothesis is that cooperatives tend to pay lower wages than other banks; both Fonteyne and Klinedinst present this hypothesis. Real wages are determined by dividing total personnel expenses by total employment and adjusting for inflation. Contrary to expectations, mutual savings banks in the BankScope dataset had the highest mean real wage, reaching $58,502 in 2005. In the same year, all other banks had a mean real wage of $51,125. In each year from 2002 to 2008, mutual savings banks had a mean real wage of at least $3,630 more than other banks. Unfortunately, large gaps in the dataset result in there only being 1 or 2 observations in a given year for cooperative banks. These mean real wages ranged from $46,621 to $55,616. This refutation of the presented hypothesis could be due to mutuals retaining employees for longer and thus benefit from the increase human capital of their more experienced employees. Another possible explanation is that due to the smaller size of mutuals, the average worker is responsible for greater decision-making and in a more integral part of the firm than in the case of employees for larger firms.

Claims have been made that cooperatives are less efficient than their commercial peers. This claim has been made in a 1983 paper by Eugene Fama and Michael Jensen titled "Agency Problems and Residual Claims;" their primary reasoning is that managers do not bear considerable wealth effects of their decisions. The most common measure of efficiency is the ratio of cost to income (CIR). Comparing the ability of firms to minimize costs is essential because all firms, regardless of profit-orientation, should seak to be as efficient as possible, anything less should be considered a failure of the ownership structure. Mean CIRs for mutual savings banks are similar to those of other firms. In the beginning of the period, the mean CIRs are lower for mutual savings banks than for the rest of banks (66.446 compared to 69.601 in 2002). However, this reversed over the 7-year period concluding with mutual savings banks having a mean CIR of 83.912 compared to 81.529 for the rest of banks in 2008. When controlling for total assets, regression analysis shows that in 2002 mutual savings banks had CIRs an average of 3.240156 below those of other banks at the 90% confidence level. Yet in 2007 the mutual savings structure provided for a CIR on average 5.845106 higher than the rest of the dataset at the 98% confidence level. Regressions for later years fail to show significant result, suggesting that the gap between mutual savings banks and other banks has narrowed and possibly reversed. In the case of cooperatives, excluding 2008, each year has between 13 and 18 observations. While this sample is small, it does provide some indication as to whether or not cooperatives and more or less efficient than other banks. In each year from 2002 to 2007, the mean CIR of cooperatives is considerably lower than the rest of the dataset. In 2002, the mean cooperative CIR was 55.684 compared to 69.449 for the rest of banks. Hesse and Cihak (2007) found that in Europe, cooperatives had mean CIRs higher than commercial banks or savings banks (their study used BankScope data from 1994 to 2004)[8]. They calculated that cooperatives

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8 In their study, Hesse and Cihak did not discriminate between mutual and non-mutual savings banks.

in the Eurozone has a mean CIR of 71.99, compared to 70.10 for commercial banks and 67.09

for savings banks. Clearly, these findings do not match those of this study. Perhaps the

discrepancy is due to institutional differences between the US and Europe, or even differences in

the financial climate for the different periods of the studies. It could be the case that throughout

the world, savings banks had lower CIRs in the 1990s, however, factors in play during the 21st

century caused these CIRs to rise.

Another charge against cooperatives is that they are less profitable than other banks, this

is supported by findings from Beck et al.(2009) as well as Hesse and Cihak (2007). Of course,

because cooperatives are not profit-focused firms, they can achieve their goal of maximizing

member welfare while still having lower profitability than other banks. However, considerably

lower profitability would be a sign that a cooperative bank is failing to make prudent investment

decisions at the expense of member welfare. The mean ratio of operating income to total assets

(OITA) for mutual savings banks is lower than the rest of the banks in the dataset in each year[9].

In 2006 the mean mutual savings OITA was .66457% while the rest of the banks had a mean of

1.52224%. Regression analysis shows that mutual savings banks have OITAs lower than other

banks from the year 2004 to 2007 at the 95% confidence level. In 2007, mutual savings banks

had an OITA of on average .007945 less than other banks. Again, there are only between 13 and

19 observations for cooperative banks for each year from 2002 to 2007 (and only 3 for 2008).

The mean OITAs for cooperatives are noticeably lower than for the rest of the dataset, only about

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9 The most popular measure of profitability is return on assets (ROA). Beck et al., (2009) uses a variant
of this measure, RORWA or return on risk weighted assets. The difference between the two measures is
that RORWA adjusts the total assets for risk. Because these adjustments is provided by the bank and is
rather arbitrary, this paper does not adjust for risk. Unfortunately, data on net income data, which is the
net revenue minus all costs and expenses, was not available. Instead, this paper uses operating income/
total assets; operating income is the profit gained from business operations excluding operating expenses
and depreciation. This measure of earnings is before taxes, so a true comparison can be made between
ownership structures despite cooperatives not being subject to income taxes.

half that of other banks in some years. In 2005, the mean OITA for coops was .068657% while other banks had a mean of 1.4745%. This is strong evidence in support of the hypothesis; still, managers on cooperative firms are concerned with consumer welfare, which is difficult to quantify.

Another measure of performance is loan loss provisions. This is the amount that a bank sets aside for non-performing loans. It indicates how risky a bank's loan portfolio is. Birchall (2009) claims that cooperative banks were more conservative than other banks prior to the financial crisis and thus are better able to withstand the crisis. This paper tests the proportional change in real loan loss provisions while controlling for real total revenue and the state in which a bank is headquartered. The most statistically significant regression (p-value of 0.128) for the mutual savings banks dummy came in 2004 in which, from the previous year, loan loss provisions increased by 62.43% relative to the rest of banks. In the same year, cooperatives saw loan loss provisions decrease by 1167.34% more than other banks (with a p-value of 0.000). 2004 was the only year to provide regressions significant at the 50% confidence level. These regressions suggest that there is not a strong correlation between ownership structure and the risk of loan portfolios- in spite of Birchall's claims.

Birchall (2009) also says that cooperatives have been increasing loans during the crisis, easing effects of the credit crunch, following Ferri (n.d.). A regression of the proportional change in loans controls for real total revenue and state. At the beginning of the business cycle, from 2002 to 2003, real loans per worker decreased by 22.11% more in mutual savings banks than in other banks (p-value= 0.119). From 2006 to 2007, real loans per worker decreased by 25.48% in mutual savings banks relative to other banks (p-value=0.296). For cooperatives, regression of the proportional change in real loans per worker did not some significant results.

Similarly, regressions of the proportional change in real loans while controlling for real total assets and state failed to show strong results. This suggests that if cooperatives or mutual savings banks have seen lending increases in the last business cycle, they have not been large.

Employment is a strong indicator of a firm's performance. Regression analysis of the proportional change in employment shows that mutual savings banks have not been as successful as other banks (when controlling for real total assets and state). From 2003 to 2004, mutuals generated 5.06% less employment than other banks in the dataset (p-value=0.005). Although some years do not show highly significant coefficients, in each year over the period of the business cycle, the mutual savings bank dummy shows negative coefficients. This suggests that the mutual savings banks ownership structure allows for slower growth. This could be the lower profitability that limits their ability to raise capital. This could also be due to the tendency of mutual savings banks to remain small due to ideological goals (they may wish to remain small and continue to offer highly personalized service). While the same regression failed to return any highly significant results for cooperative banks, one would expect similar behavior due to similarities in profitability and ideological goals for cooperatives and mutuals.

Conclusion and Topics for Further Research

For the most part, the findings of this paper have supported the previous empirical research and theoretical literature on credit cooperatives. It appears that credit cooperatives in the United States are smaller and more retail-orientated than commercial banks. Capitalization in mutual savings banks was stronger than in the omitted base for the BankScope database, it was also strong in the qualitative research of US credit unions. This strong capitalization suggests that cooperative banks are fairing well in the global financial crisis. Another positive

indicator is that prior to the crisis, mutual had unexpectedly low cost to income ratios, suggesting that customer-owned banks do not suffer inefficiencies from lack of principal oversight of managers. These low CIRs are very encouraging because they refute hypothesis of a general lack of tact on the behalf of small non-commercial banks.

The findings of this paper are in line with the previous evidence of lower profitability for cooperative banks. Mutual savings banks and cooperatives show lower operating income to total assets than their competitors, but this is not a cause for great criticism. It is important to remember that cooperatives offer products at below profit-maximizing rates in order to increase customer surplus. Lower profitability is to be expected. What was not expected were the high average wages for mutual savings banks. In spite of their lower profitability, mutuals pay their employees higher wages. This is encouraging, however, they must be careful not to pay too high of wages as to retract from the welfare of their customers.

Several performance measures remain unclear. While the BankScope data shows mutual savings banks and cooperatives lagging behind other banks in employment creation, a survey of the 100 largest US credit unions shows that cooperatives have actually increased their employment in 2009. A similar discrepancy exists in loan creation. While the analysis of BankScope data fails to provide evidence that US cooperative banks have increased lending in the credit crunch, the 100 largest credit unions have increased their total loans in 2009. The research of this paper is unable to substantiate claims by Fonteyne and Birchall that cooperatives are more conservative in their lending. Further research on delinquency rates and loan loss provisions would be helpful in determining the success of lending practices in cooperative banks.

On the whole, it appears that cooperatives were performing strongly prior to the financial collapse and, as evident by current bank ratings, are fairing well through the crisis. As this performance pertains to issues of public policy, cooperatives offer a stable and lucrative option for consumers. However, due to shortcomings of available data, this paper is unable to offer sufficient evidence of cooperatives affect on the national financial system. Currently, cooperative banks are exempt from income taxes, but savings banks (even if mutually owned) as well as commercial banks are subject to the substantial income tax. The successful performance of cooperatives in the US does suggest that the hypothetical positive externalities presented by several researchers may exist. Nevertheless, further research should be conducted to substantiate claims that cooperative banks have a significant positive externality on the country.Table 1.

Penetration

	Mar 09	2008	2007	2006	2005
Credit cards	14.3%	14.2%	14.3%	14.1%	14.3%
Other unsecured loans	10.9%	11.3%	11.4%	11.1%	11.0%
New automobile	6.2%	6.3%	6.5%	6.5%	6.1%
Used automobile	10.9%	10.8%	10.6%	10.8%	11.0%
First mortgage	1.8%	1.8%	1.7%	1.7%	1.6%
HEL & 2nd Mtg	3.0%	3.1%	3.1%	3.1%	2.9%
Member business loans	0.2%	0.2%	0.2%	0.2%	0.1%
Share drafts	45.9%	45.9%	45.2%	42.9%	44.5%
Certificates	14.0%	13.9%	13.9%	13.0%	10.7%
IRAs	5.9%	5.7%	5.6%	5.6%	5.3%
Money market shares	7.5%	7.4%	6.7%	6.2%	5.8%

Source: Credit Union National Association May 2009 US Credit Union Profile

Chart 3
Market share, credit unions/caisses populaires and chartered banks, 2001

per cent
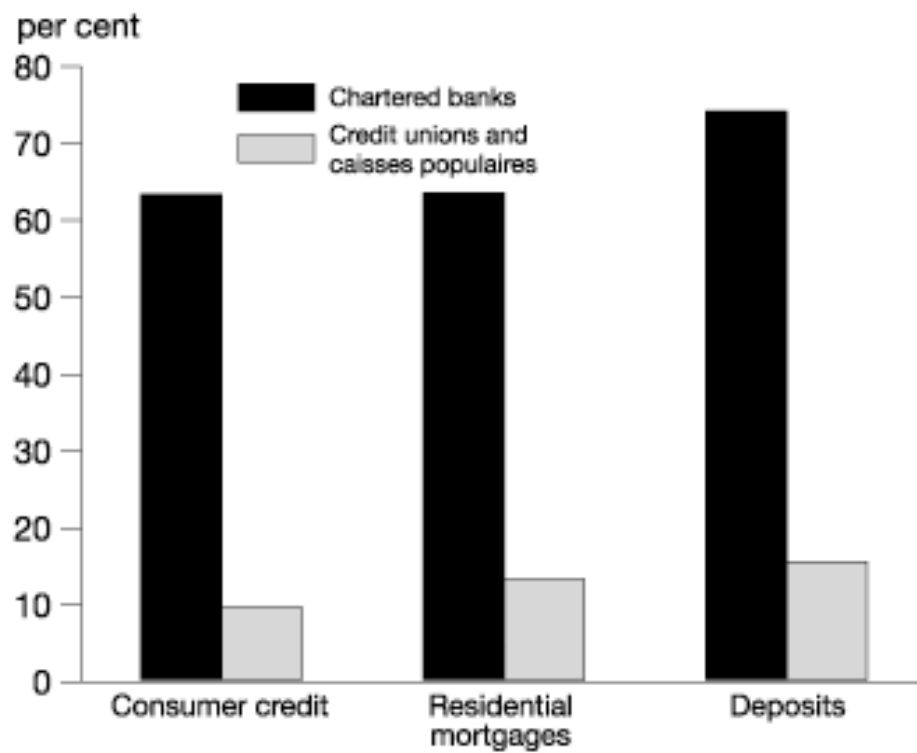
Source: *Bank of Canada Review.*

Table 2. Zones of Acceptance for Key Financial Ratios in Credit Union Management

Taken from *The Credit Union World* by Wendell Fountain, elaborated upon by the author.

Number of employees per member	450-600	Keeping this ratio in check allows for the proper distribution of personnel especially during times of rapid growth. Too low a number, and the credit union may not be providing adequate service to their members. Too high, and the credit union may be inefficient, allowing personnel expenses to cut into the profits that should be incorporated into the bank's products.
Operating expenses to operating income	30-35%	This ratio must allow the bank to serve members fully while also keeping costs low as to maximize consumer surplus.
Net capital to assets	8-10%	This is a measure of the financial strength of the credit union. Strong capitalization protects a firm from damaging financial turbulence; however, too much capital is a waste, as it does not provide any benefit to the members.
Loan delinquency ratio	1% or less	A ratio much lower than 1% may mean that the lending practices are too stringent, not extending credit to those who joined the credit union because they could not secure credit elsewhere. Much higher than 1% and the bank may be too lenient in its lending, causing unnecessary losses.
Net charge-offs to average loans	.5% or less	This reflects similar information as the above ratio. It should reflect diligent efforts to collect on loans before writing them off, this may include the use of a third party collection agency.
Gross Spread (in basis points)	300-450	This is the spread between savings deposits and average lending rates. The gross spread exposes the balance between investing in the growth of the credit union in order to better serve its members in the future and the benefits that members receive today. An optimal balance ought to be achieved to best serve the members.
Net return on average assets (ROAA)	1-2%	This reflects the profitability of the firm. Non-earning assets (buildings, etc.) ought to be minimized in relation to earning assets (loans, etc.). It reflects how efficiently management operates the firm. However, this ratio can be deceptive when comparing credit unions and commercial banks. While commercial banks aim to maximize this ratio, exclusive of almost everything else, cooperative firms seek to maximize this ratio only so much as increased profits help them to increase the consumer welfare.
Loans to shares ratio	65-75%	This ratio reflects how active a cooperative bank is in extending credit to its members. As with all of the other ratios, there is a delicate balance in providing the optimal services for members.

Table 3. PEARLS Financial Ratios Guidelines
Adapted from the WOCCU website

Protection	Loan Losses Allowances/ Delinq. >12 Months	100%
	Net Loan Loss Allowances/ WOCCU allowance Required for Delinq. 1-12 Months	35%
	Complete Loan Charge-off of Delinq. > 12 Mo.	Yes
	Annual Loan Charge-offs / Average Loan Portfolio	Minimized
	Accum. Charge-offs Recovered / Accum. Charge-offs	> 75%
	Solvency (Net Value of Assets/Total Shares & Deposits)	$\geq$ 111%
Effective Financial Structure	Net Loans / Total Assets	70-80%
	Liquid Investments / Total Assets	$\leq$ 16%
	Financial Investments / Total Assets	$\leq$ 2%
	Non-financial Investments / Total Assets	0%
	Savings Deposits / Total Assets	70-80%
	External Credit / Total Assets	0-5%
	Member Share Capital / Total Assets	$\leq$ 20%
	Institutional Capital / Total Assets	$\geq$ 10%
	Net Institutional Capital / Total Assets	$\geq$ 10%
Asset Quality	Total Loan Delinquency / Gross Loan Portfolio	$\leq$ 5%
	Non-earning Assets / Total Assets	$\leq$ 5%
	Net Zero Cost Funds / Non-earning Assets	$\geq$ 200%
Rates of Return and Cost	Net Loan Income / Average Net Loan Portfolio	Entrepreneurial Rate
	Liquid Inv. Income / Avg. Liquid Investments	Market Rates
	Fin. Investment Income / Avg. Fin. Investments	Market Rates
	Non-fin. Inv. Income / Avg. Non-fin. Investments	$\geq$ R1
	Fin. Costs: Savings Deposits / Avg. Savings Deposits	Market Rates > Inflation
	Fin. Costs: External Credit / Avg. External Credit	Market Rates
	Fin. Costs: Member Shares / Avg. Member Shares	Market Rates, > R5
	Gross Margin / Average Assets	^E9=10%
	Operating Expenses / Average Assets	$\leq$ 5%
	Provisions for Risk Assets / Average Assets	^P1=100%, ^P2=35%
	Other Income or Expense / Average Assets	Minimized
	Net Income / Average Assets (ROA)	^E9=10%
Liquidity	Liquid Assets - ST Payables / Total Deposits	15-20%
	Liquidity Reserves / Total Savings Deposits	10%
	Non-earning Liquid Assets / Total Assets	< 1%
Signs of Growth (Annualized Rates)	Net Loans	^E1=70-80%
	Liquid Investments	^E2 $\leq$ 16%
	Financial Investments	^E3 $\leq$ 2%
	Non-financial Investments	^E4=0%
	Savings Deposits	^E5=70-80%
	External Credit	^E6=0-5%
	Member Shares	^E7 $\leq$ 20%
	Institutional Capital	^E8 $\geq$ 10%
	Net Institutional Capital	^E9 $\geq$ 10%
	Membership	$\geq$ 15%
	Total Assets	> Inflation + 10%

*Amount Needed

Table 4. CAMEL Determinants of Bank Health*

Taken from *Distress in European Banks* by Poghasyan and Cihak 2009 and elaborated upon by the author.

Capitalization	(total equity)/(total assets)	A lower ratio means higher leverage, making the bank more sensitive to shocks in the financial market.
Asset Quality	(loan loss provisions)/(total loans)	Loan loss provisions are expenses allotted to expected future losses from bad loans. This ratio shows how aggressive a bank is in its lending practices.
Managerial Quality	(total costs)/(total income)	A lower number is desirable, as it suggests high managerial quality in keeping costs low. Managerial quality is difficult to quantify, this ratio does not expose many of the aspects than make a managerial team successful.
Earnings	(profit before taxes)/(total equity)	This is a standard measure of profitability; it shows how successful management is in investing shareholder equity.
Liquidity	(liquid assets)/(total assets)	This is a standard measure of liquidity, or how easily a firm can internally raise capital.

*CAMEL is sometimes appended to be CAMELS, where the "S" stands for market risk sensitivity. This is left out because it is difficult to quantify, and unnecessary given this application.

Source: www.bankrate.com, current as of July 22, 2009

Top 100 Credit Union Performance | Data as of March 31, 2009

09 Rk	08 Rk	Name of Credit Union	St	Total Assets	Total Loans	12-mo Loan Growth	Total Shares	12-mo Share Growth	Net Interest Margin	Opex / Avg. Assets	Delinquency Ratio	Net Worth Ratio	ROA Pre-Assessment	ROA Post-Assessment
1	1	Navy	VA	$38,739,788,015	$31,344,794,527	11.59%	$27,349,947,049	10.38%	3.53%	2.81%	1.29%	8.58%	0.53%	-0.04%
2	2	State Employees'	NC	$18,058,543,316	$12,160,094,714	11.65%	$16,652,384,665	14.58%	2.04%	2.09%	0.80%	6.63%	1.30%	1.18%
3	3	Pentagon	VA	$13,377,612,153	$12,478,879,855	14.99%	$10,861,320,845	8.47%	2.01%	0.93%	0.57%	8.12%	0.87%	0.66%
4	4	BECU	WA	$8,733,928,699	$7,139,999,870	7.28%	$8,057,811,574	4.85%	3.33%	2.32%	1.56%	6.90%	-0.85%	-1.39%
5	5	SchoolsFirst	CA	$8,073,471,855	$4,943,345,035	-6.07%	$6,978,096,122	6.09%	2.52%	1.62%	1.58%	8.79%	-0.48%	-0.48%
6	6	The Golden 1	CA	$7,525,247,244	$4,290,660,928	-5.58%	$6,212,491,634	4.24%	2.66%	2.26%	1.51%	8.19%	-2.55%	-2.67%
7	8	Alliant	IL	$6,313,857,290	$3,151,066,438	16.08%	$5,021,773,279	22.80%	1.68%	0.80%	0.78%	9.66%	0.33%	-0.29%
8	7	Suncoast Schools	FL	$5,822,844,791	$4,609,105,050	-1.96%	$5,177,365,874	-4.77%	2.61%	1.89%	3.88%	6.05%	-1.57%	-2.09%
9	9	American Airlines	TX	$5,436,742,570	$2,409,757,827	4.29%	$4,842,341,832	11.81%	2.32%	1.20%	0.91%	7.75%	1.45%	0.72%
10	10	Security Service	TX	$5,222,280,599	$4,540,421,849	10.85%	$4,282,373,353	15.38%	2.37%	2.45%	1.41%	7.56%	0.04%	0.04%
11	12	America First	UT	$4,808,478,774	$4,005,962,662	9.93%	$4,309,787,208	12.47%	3.51%	3.68%	2.48%	8.88%	-0.53%	-0.76%
12	13	San Diego County	CA	$4,717,481,804	$3,881,674,709	15.33%	$4,183,519,856	13.72%	3.04%	1.56%	1.96%	10.08%	0.78%	0.78%
13	17	Star One	CA	$4,606,549,338	$1,810,597,449	49.70%	$3,389,167,244	11.63%	1.96%	0.80%	0.14%	9.70%	-0.75%	-1.30%
14	14	Patelco	CA	$4,268,515,154	$2,706,657,300	-1.16%	$3,824,149,061	4.44%	2.78%	1.86%	2.80%	8.45%	-0.67%	-0.67%
15	15	Digital	MA	$4,234,810,647	$3,778,157,463	3.81%	$3,588,637,255	7.00%	3.01%	2.09%	1.51%	6.03%	0.32%	-0.16%
16	19	Citizens Equity First	IL	$4,131,380,860	$3,001,483,906	17.30%	$3,687,785,962	14.46%	2.91%	2.04%	1.14%	8.90%	0.62%	0.55%
17	11	Kinecta	CA	$4,071,012,589	$3,504,367,243	-4.61%	$3,046,631,123	-8.02%	2.49%	2.75%	2.66%	6.30%	-2.08%	-2.81%
18	18	Alaska USA	AK	$3,900,390,892	$2,735,665,701	15.35%	$3,353,843,173	12.18%	4.52%	4.69%	1.37%	7.86%	-0.68%	-0.68%
19	20	Vystar	FL	$3,813,255,700	$2,534,981,638	8.93%	$3,106,966,788	4.55%	2.70%	2.99%	1.78%	8.33%	0.03%	0.03%
20	21	ESL	NY	$3,699,530,391	$2,002,587,955	4.07%	$2,157,686,408	6.13%	3.15%	2.19%	0.91%	11.23%	1.71%	1.20%
21	25	Bethpage	NY	$3,446,811,262	$1,915,392,529	3.25%	$3,029,533,010	15.50%	2.31%	1.93%	0.61%	6.77%	0.99%	0.99%
22	23	Pennsylvania State Employees	PA	$3,430,723,397	$2,220,996,151	18.32%	$3,166,978,179	11.25%	2.53%	2.46%	0.58%	7.33%	-0.82%	-1.64%
23	24	Randolph-Brooks	TX	$3,350,496,861	$2,028,952,806	18.02%	$2,765,231,554	16.20%	2.88%	2.98%	0.36%	11.36%	2.37%	1.53%
24	26	State Farm	IL	$3,309,403,839	$797,671,860	1.25%	$2,968,187,864	14.20%	0.82%	0.09%	0.41%	9.14%	0.65%	-0.11%
25	22	Desert Schools	AZ	$3,308,641,568	$2,489,386,009	5.10%	$2,721,674,017	6.06%	3.40%	3.86%	2.24%	8.85%	-1.45%	-1.45%
26	16	Wescom Central	CA	$3,221,661,596	$2,595,046,253	-15.62%	$2,385,219,109	-9.24%	3.44%	4.29%	4.16%	5.45%	-2.65%	-3.27%
27	28	Delta Community	GA	$3,152,035,253	$1,920,057,644	16.40%	$2,627,621,834	17.78%	3.07%	2.84%	1.13%	12.49%	0.08%	0.08%
28	27	Police And Fire	PA	$3,089,521,289	$1,534,186,682	12.41%	$2,647,566,447	12.58%	2.98%	1.35%	0.32%	10.67%	2.26%	1.61%
29	34	Teachers	NY	$3,022,243,691	$1,267,003,148	13.42%	$2,707,130,195	25.67%	2.68%	2.01%	0.63%	10.27%	0.82%	0.81%
30	30	United Nations	NY	$2,881,524,403	$1,273,769,858	8.67%	$2,559,342,663	8.71%	3.15%	2.85%	0.82%	8.94%	0.52%	0.13%
31	32	Mountain America	UT	$2,879,611,060	$2,371,060,503	22.78%	$2,680,973,904	19.10%	2.78%	3.95%	2.92%	6.17%	0.22%	0.22%
32	29	Lockheed	CA	$2,859,603,259	$2,452,387,496	4.22%	$2,404,029,445	6.21%	3.21%	1.95%	1.20%	14.26%	0.44%	0.44%
33	38	Ent	CO	$2,799,769,927	$1,833,035,055	9.38%	$2,323,292,151	13.04%	2.88%	2.34%	0.55%	9.71%	1.15%	1.15%
34	33	San Antonio	TX	$2,767,303,881	$2,540,460,268	13.64%	$1,839,944,210	10.19%	3.37%	2.91%	2.09%	7.98%	0.97%	0.56%
35	31	Onpoint Community	OR	$2,667,116,063	$2,211,917,423	2.77%	$2,321,865,874	0.80%	2.82%	2.23%	1.22%	8.75%	0.52%	0.52%
36	35	Bank-Fund Staff	DC	$2,651,598,200	$1,665,598,155	2.26%	$2,278,040,159	10.24%	2.80%	2.01%	0.78%	13.10%	1.07%	0.55%
37	36	Hudson Valley	NY	$2,574,843,836	$1,709,249,272	0.36%	$2,323,678,063	7.54%	3.20%	2.82%	0.81%	8.75%	0.37%	-0.37%
38	37	Redstone	AL	$2,531,034,712	$1,158,926,844	11.21%	$2,189,320,510	8.74%	3.11%	3.82%	0.79%	9.89%	0.55%	0.55%
39	44	DFCU Financial	MI	$2,485,006,880	$1,184,340,067	18.29%	$2,028,428,867	29.52%	5.46%	2.08%	0.90%	10.63%	1.60%	1.00%
40	41	Addison Avenue	CA	$2,331,801,857	$1,756,918,890	1.80%	$1,931,623,865	7.07%	2.60%	3.74%	1.01%	9.31%	0.04%	0.04%
41	40	Visions	NY	$2,233,340,929	$1,399,619,462	18.97%	$1,964,775,987	7.99%	2.56%	1.61%	0.37%	11.94%	1.16%	0.94%
42	43	Coastal	NC	$2,219,118,611	$1,821,500,287	17.94%	$1,821,777,248	12.33%	2.91%	2.97%	2.33%	8.26%	-2.22%	-2.89%
43	42	Eastman	TN	$2,149,621,442	$1,528,606,669	2.97%	$1,825,103,362	6.45%	3.06%	1.96%	0.89%	9.62%	0.70%	0.06%
44	47	Wings Financial	MN	$2,133,902,888	$879,614,989	-3.96%	$1,764,229,285	15.03%	2.33%	1.95%	1.10%	9.94%	0.21%	-0.26%
45	48	First Technology	OR	$2,072,559,889	$1,148,597,326	-0.88%	$1,625,067,261	13.36%	3.01%	2.89%	0.88%	7.96%	1.05%	0.84%
46	51	Bellco	CO	$2,070,698,288	$1,827,091,604	16.39%	$1,641,751,783	14.43%	3.61%	2.79%	1.27%	7.99%	-1.21%	-1.34%
47	77	Western	CA	$2,042,583,339	$1,155,555,315	2.69%	$1,880,488,958	46.44%	2.36%	2.82%	1.66%	6.77%	0.08%	-0.59%
48	52	State Employees Credit Union	MD	$2,012,682,541	$1,426,910,359	6.22%	$1,768,710,367	12.37%	3.39%	3.70%	1.40%	9.26%	0.08%	0.08%
49	55	Tower	MD	$1,996,630,252	$1,429,005,982	8.71%	$1,591,401,644	9.66%	2.49%	2.61%	0.27%	10.78%	0.97%	0.97%
50	60	Affinity	NJ	$1,981,499,663	$1,498,510,141	0.49%	$1,565,702,106	12.37%	2.61%	2.92%	1.13%	7.17%	0.53%	0.53%
51	49	Mission	CA	$1,972,256,715	$1,304,515,274	1.07%	$1,689,954,523	4.74%	3.48%	3.01%	1.25%	8.47%	-0.88%	-0.88%
52	39	GTE	FL	$1,948,125,977	$1,514,510,642	-15.12%	$1,648,753,873	-16.63%	3.54%	3.79%	2.49%	6.61%	-1.41%	-2.15%
53	69	Atlanta Postal	GA	$1,911,172,028	$825,562,684	8.76%	$1,481,025,199	9.17%	1.83%	1.38%	0.99%	11.46%	0.10%	-0.55%
54	58	Teachers	IN	$1,895,220,722	$1,644,942,611	6.25%	$1,517,431,359	7.09%	3.46%	3.32%	0.46%	7.48%	1.04%	1.04%
55	63	Tinker	OK	$1,887,843,348	$1,190,847,914	23.61%	$1,669,566,706	15.19%	3.47%	3.45%	1.10%	10.06%	0.87%	0.85%
56	146	California Coast	CA	$1,847,265,032	$1,255,471,000	70.64%	$1,458,669,808	87.70%	3.34%	2.51%	2.19%	6.69%	-1.14%	-1.14%
57	61	Educational Employees	CA	$1,816,560,661	$915,544,557	1.11%	$1,648,209,240	6.12%	2.94%	2.35%	1.31%	8.00%	0.50%	0.50%
58	66	Virginia Credit Union	VA	$1,811,774,563	$1,214,131,600	8.24%	$1,620,939,024	11.56%	3.26%	3.48%	1.62%	8.83%	0.31%	0.31%
59	54	Redwood	CA	$1,807,379,243	$1,467,583,989	-0.75%	$1,619,180,817	0.22%	3.42%	2.44%	2.39%	7.24%	-0.20%	-0.75%
60	64	Keesler	MS	$1,774,034,310	$1,006,219,084	9.33%	$1,526,084,939	9.46%	2.52%	2.37%	0.84%	9.54%	0.81%	0.81%
61	56	Kern Schools	CA	$1,769,897,685	$1,247,784,953	-10.37%	$1,634,767,209	5.48%	2.97%	3.81%	2.52%	5.45%	-2.50%	-3.38%
62	72	SEFCU	NY	$1,764,316,403	$999,352,229	6.55%	$1,606,618,909	16.05%	3.25%	3.92%	0.61%	7.23%	0.58%	0.58%
63	73	HarborOne	MA	$1,760,032,865	$1,370,655,844	8.19%	$1,202,722,897	12.47%	1.97%	2.25%	1.05%	7.49%	0.17%	0.15%
64	65	Texans	TX	$1,755,448,733	$1,231,465,859	-16.46%	$1,493,529,335	-6.01%	2.98%	5.14%	11.26%	6.74%	-1.31%	-2.01%
65	67	APCO Employees	AL	$1,743,980,691	$406,058,270	4.09%	$1,570,382,830	9.15%	1.11%	0.45%	0.73%	9.88%	0.80%	0.80%
66	53	Grow Financial	FL	$1,721,730,968	$1,326,548,260	3.18%	$1,553,491,996	-3.52%	3.14%	3.25%	2.07%	9.05%	-1.14%	-1.97%
67	71	Northwest	VA	$1,721,706,116	$1,321,631,932	0.55%	$1,508,378,841	10.92%	2.99%	2.86%	0.78%	9.04%	0.80%	0.10%
68	62	CommunityAmerica	KS	$1,714,372,121	$1,391,788,769	2.87%	$1,235,007,586	1.55%	3.23%	3.86%	0.71%	11.08%	-0.04%	-0.44%
69	70	Space Coast	FL	$1,670,246,312	$1,386,864,782	4.87%	$1,411,805,104	5.58%	3.50%	2.73%	3.26%	11.24%	-0.79%	-1.31%
70	74	Michigan State University	MI	$1,667,567,084	$1,164,085,863	9.53%	$1,387,618,347	12.60%	3.25%	2.94%	1.50%	11.25%	0.61%	0.48%
71	76	Members 1st	PA	$1,659,510,750	$1,219,280,463	14.25%	$1,522,323,371	12.26%	3.03%	3.60%	1.26%	7.39%	0.46%	0.09%
72	84	Lake Michigan	MI	$1,654,070,831	$1,240,369,369	34.00%	$1,344,239,369	16.60%	2.57%	2.88%	0.93%	7.97%	1.11%	1.11%
73	46	Arizona	AZ	$1,651,838,368	$1,208,028,929	-15.88%	$1,552,130,379	-2.31%	4.27%	4.32%	3.56%	1.96%	-8.15%	-8.95%
74	68	Provident	CA	$1,641,385,412	$1,267,427,930	-1.43%	$1,214,553,965	6.92%	2.30%	2.52%	0.67%	11.07%	-0.07%	-0.07%
75	50	Eastern Financial Florida	FL	$1,623,575,224	$1,266,013,614	-15.56%	$1,527,023,184	-5.85%	3.17%	3.91%	9.83%	2.00%	-1.08%	-1.08%
76	57	Fairwinds	FL	$1,612,044,047	$1,069,914,386	-6.92%	$1,363,853,890	-10.70%	3.60%	3.26%	2.76%	8.02%	0.24%	0.24%
77	65	Travis	CA	$1,608,410,636	$1,120,146,662	1.07%	$1,389,791,343	-2.52%	4.19%	3.27%	1.32%	8.47%	-4.08%	-4.82%
78	95	Texas Dow Employees	TX	$1,569,506,845	$1,206,567,967	7.08%	$1,090,687,026	12.81%	3.56%	3.66%	0.57%	7.18%	0.40%	0.40%
79	85	Wright-Patt	OH	$1,562,120,002	$951,224,136	20.35%	$1,333,559,823	12.46%	3.14%	3.61%	1.07%	10.92%	1.55%	0.81%
80	86	Veridian	IA	$1,554,208,053	$1,121,114,856	19.96%	$1,357,689,831	11.84%	3.33%	3.29%	0.81%	8.42%	1.12%	0.90%
81	59	North Island Financial	CA	$1,540,042,589	$1,019,888,803	-10.10%	$1,229,603,365	3.77%	2.70%	3.77%	2.88%	2.68%	-12.51%	-13.22%
82	96	Langley	VA	$1,517,167,578	$631,494,659	11.56%	$1,162,659,696	11.87%	2.82%	3.05%	1.19%	11.81%	0.87%	0.87%
83	79	Premier America	CA	$1,500,330,140	$1,165,020,057	-2.33%	$1,085,733,671	-2.36%	2.73%	1.80%	1.03%	7.02%	0.57%	-0.05%
84	75	Founders	SC	$1,498,364,810	$1,161,148,035	0.63%	$1,271,420,365	0.52%	4.24%	3.63%	1.24%	11.38%	-1.79%	-2.00%
85	121	American Eagle	CT	$1,489,930,754	$745,946,008	13.15%	$1,033,286,068	9.31%	2.23%	2.49%	0.88%	6.91%	0.25%	-0.46%
86	80	GECU	TX	$1,480,609,738	$1,261,465,438	7.17%	$1,353,638,213	9.41%	3.93%	4.65%	1.46%	7.98%	0.15%	0.15%
87	88	Safe	CA	$1,477,711,759	$942,680,590	-2.25%	$1,159,140,935	-1.28%	3.51%	2.98%	1.87%	8.56%	0.27%	0.27%
88	83	Municipal	NY	$1,465,923,079	$1,114,165,126	6.05%	$1,282,761,643	8.08%	5.20%	6.17%	0.98%	10.87%	0.55%	-0.26%
89	78	South Carolina	SC	$1,465,158,726	$1,182,953,196	0.67%	$1,107,605,813	1.25%	3.23%	4.32%	1.85%	8.65%	-0.79%	-1.46%
90	81	Washington State Employees	WA	$1,457,220,582	$1,018,336,305	6.41%	$1,307,785,437	5.44%	3.56%	4.20%	1.16%	8.69%	-0.60%	-1.44%
91	87	California	CA	$1,455,637,950	$975,661,394	2.87%	$1,107,999,810	3.63%	2.78%	3.65%	2.12%	8.65%	-4.34%	-5.05%
92	91	First Community	MO	$1,429,382,680	$882,627,993	17.13%	$1,289,757,645	12.07%	2.03%	2.58%	0.41%	8.40%	-0.20%	-0.44%
93	112	Connecticut State Employees	CT	$1,393,280,571	$258,691,514	6.17%	$1,291,700,053	22.40%	1.42%	0.55%	0.23%	7.12%	0.93%	0.17%
94	103	Schools Financial	CA	$1,390,133,232	$715,074,621	1.48%	$1,179,080,435	14.19%	2.72%	3.10%	0.90%	7.30%	-1.33%	-2.05%
95	82	BCU	IL	$1,384,590,999	$1,168,056,482	4.55%	$1,209,904,296	2.14%	3.38%	4.33%	1.29%	6.91%	0.21%	0.21%
96	99	Georgia's Own	GA	$1,372,575,996	$717,966,986	15.97%	$1,194,713,494	15.21%	2.51%	2.91%	1.02%	12.54%	0.44%	0.40%
97	97	Service	NH	$1,369,067,951	$947,043,382	20.17%	$1,004,836,614	9.77%	3.14%	4.45%	0.23%	11.88%	0.15%	-0.25%
98	90	Affinity Plus	MN	$1,368,149,888	$1,175,071,314	11.37%	$1,185,943,556	4.26%	2.15%	3.20%	1.67%	6.87%	0.63%	-0.07%
99	93	MidFlorida	FL	$1,360,583,400	$832,196,830	9.30%	$1,108,275,974	2.96%	3.24%	3.52%	0.57%	8.44%	0.93%	0.93%
100	107	Arizona State	AZ	$1,343,038,520	$904,303,526	8.68%	$1,216,138,324	17.18%	3.22%	3.28%	1.20%	6.89%	1.03%	1.03%
		Totals for Top 100 CUs		$320,085,614,024	$222,547,057,853	7.48%	$265,374,744,356	9.54%	2.89%	2.56%	1.49%	8.46%	0.02%	-0.32%

		2002	2003	2004	2005	2006	2007	2008
MutualFDIC	coefficient	-3.240156	-1.812748	-0.7892072	0.2205838	5.321054	5.845106	2.33058
	standard error	1.924253	2.198572	2.24515	2.344276	2.014479	2.465412	2.527958
	p-Value	0.092	0.41	0.725	0.925	0.008	0.018	0.357
CoopFDIC	coefficient	-13.40339	-8.235977	-5.885413	-4.722985	-4.3451	-13.78218	-39.02334
	standard error	11.59139	11.27942	11.19362	11.66017	11.27883	14.78853	27.26956
	p-Value	0.248	0.465	0.599	0.685	0.7	0.351	0.152
Total assets (constant)	coefficient	-8.30E-08	-8.77E-08	-5.72E-08	-4.88E-08	-3.97E-08	-2.85E-08	-2.39E-08
	standard error	3.54E-08	3.71E-08	3.39E-08	2.72E-08	2.00E-08	2.14E-08	1.99E-08
	p-Value	0.019	0.018	0.092	0.073	0.047	0.183	0.231
Constant	coefficient	69.70424	71.78098	72.0604	72.09726	73.21345	77.32654	81.58839
	standard error	0.4499402	0.5149087	0.5314334	0.5579631	0.4841835	0.5976756	0.6227299
	p-Value	0	0	0	0	0	0	0

Regression Table: Cost to Income

Regression Table: Operating Income/ Total Assets

		2002	2003	2004	2005	2006	2007	2008
MutualFDIC	coefficient	-0.0024008	-0.0036685	0.0050003	-0.0056064	0.0085859	-0.007945	-0.0072194
	standard error	0.0024823	0.0045202	0.001864	0.0021805	0.003039	0.0034208	0.0173979
	p-Value	0.333	0.417	0.007	0.01	0.005	0.02	0.678
CoopFDIC	coefficient	-0.0042389	-0.0068201	0.0048785	-0.0085027	0.0089493	-0.0079216	-0.0015276
	standard error	0.0149544	0.023193	0.0092942	0.0108464	0.0170158	0.020521	0.1876979
	p-Value	0.777	0.769	0.6	0.433	0.599	0.699	0.994
Total assets (constant)	coefficient	2.71E-11	2.89E-11	1.38E-11	9.23E-12	5.77E-12	-3.25E-12	-1.57E-11
	standard error	4.56E-11	7.62E-11	2.82E-11	2.53E-11	3.02E-11	2.97E-11	1.33E-10
	p-Value	0.553	0.704	0.623	0.715	0.848	0.913	0.906
Constant	coefficient	0.0138155	0.0142878	0.014588	0.0152999	0.0152301	0.0128977	0.0099145
	standard error	0.0005795	0.0010564	0.0004406	0.0005185	0.0007297	0.0008283	0.0042763
	p-Value	0	0	0	0	0	0	0.02

Regression Table: Proportional Change in Employment

		2003	2004	2005	2006	2007	2008
MutualFDIC	coefficient	-0.0462931	-0.0505633	-0.0672786	-0.0507736	-0.0553851	-0.0933079
	standard error	0.0244076	0.0178003	0.0561247	0.0242079	0.0963366	0.1982693
	p-Value	0.058	0.005	0.231	0.036	0.565	0.638
CoopFDIC	coefficient	-0.1278573	-0.0485488	-0.057362	-0.0506158	0.2832401	dropped
	standard error	0.500882	0.3628329	0.8372482	0.3597969	1.422528	dropped
	p-Value	0.799	0.894	0.945	0.888	0.842	dropped
Real total assets (constant)	coefficient	-9.56E-11	4.61E-10	1.76E-09	1.99E-10	5.07E-10	4.67E-11
	standard error	4.02E-10	2.70E-10	8.25E-10	2.53E-10	9.15E-10	1.66E-09
	p-Value	0.812	0.088	0.032	0.432	0.58	0.978
Constant	coefficient	0.0673176	0.0062323	0.1496107	-0.0752945	0.106633	0.0838188
	standard error	0.3535048	0.2560512	0.4470722	0.1851355	1.369181	2.809908
	p-Value	0.849	0.981	0.738	0.684	0.938	0.976

*The state in which a bank is headquartered is also controlled, as a whole, these dummy variables were statistically significant.

Regression Table: Proportional Change in Loan Loss Provisions

		2003	2004	2005	2006	2007	2008
MutualFDIC	coefficient	-0.1651329	0.6243293	-0.1836305	-0.6275957	-0.0085916	2.249515
	standard error	0.4384142	0.4101855	2.828708	1.13231	0.8116718	6.775606
	p-Value	0.706	0.128	0.948	0.579	0.992	0.74
CoopFDIC	coefficient	-0.3542528	-11.67369	-1.454863	-1.665466	-0.2716111	-3.229741
	standard error	3.503404	2.916341	18.68321	8.875329	6.254773	81.14845
	p-Value	0.919	0	0.938	0.851	0.965	0.968
Real total revenue (control)	coefficient	-4.48E-08	-9.58E-09	-6.24E-08	-5.98E-08	-7.51E-08	-1.77E-07
	standard error	9.79E-08	9.27E-08	5.28E-07	1.45E-07	9.65E-08	8.94E-07
	p-Value	0.647	0.918	0.906	0.681	0.437	0.843
Constant	coefficient	1.491733	-0.5218607	-0.7188101	0.6200106	1.894426	0.5752921
	standard error	3.188548	4.111638	28.16691	13.81279	5.610839	57.08084
	p-Value	0.64	0.899	0.98	0.964	0.736	0.992

*The state in which a bank is headquartered is also controlled, as a whole, these dummy variables were statistically significant.

Regression Table: Proportional Change in Loans per Worker

		2003	2004	2005	2006	2007	2008
MutualFDIC	coefficient	-0.2211199	-0.1036066	-0.1017334	-3.253144	-0.2548287	-0.1366427
	standard error	0.1419484	0.1213581	0.4770955	4.142709	0.2438168	0.8940566
	p-Value	0.119	0.393	0.831	0.432	0.296	0.879
CoopFDIC	coefficient	0.0102345	0.0868285	-0.0838006	-1.024179	-0.8558182	dropped
	standard error	2.902212	2.464825	7.092405	61.34546	3.586773	dropped
	p-Value	0.997	0.972	0.991	0.987	0.811	dropped
Real total revenue (control)	coefficient	-2.22E-09	3.71E-08	-3.21E-08	-8.58E-08	-6.12E-09	-7.26E-09
	standard error	3.64E-08	3.20E-08	1.05E-07	6.21E-07	3.42E-08	1.39E-07
	p-Value	0.951	0.246	0.759	0.89	0.858	0.958
Constant	coefficient	-0.0112562	-0.080657	0.0091352	-0.0200121	0.030673	0.0138301
	standard error	1.182533	1.739342	6.826726	59.04583	1.99353	12.6199
	p-Value	0.992	0.963	0.999	1	0.988	0.999

*The state in which a bank is headquartered is also controlled, as a whole, these dummy variables were statistically significant.

Regression Table: Proportional Change in Loans

		2003	2004	2005	2006	2007	2008
MutualFDIC	coefficient	-0.648914	-0.1693242	-0.1808819	-5.478279	-1.424912	-0.2235588
	standard error	4.091279	0.1414638	0.7726507	5.682659	9.867284	0.9008034
	p-Value	0.874	0.231	0.815	0.335	0.885	0.804
CoopFDIC	coefficient	1.50172	0.409733	1.248753	-1.348433	-0.5025165	-0.2850169
	standard error	26.50181	0.7439565	4.071232	32.07581	60.14689	10.42444
	p-Value	0.955	0.582	0.759	0.966	0.993	0.978
Total assets (constant)	coefficient	2.82E-08	1.29E-10	-2.68E-09	-4.92E-09	-2.01E-09	-4.52E-10
	standard error	6.68E-08	2.13E-09	1.13E-08	5.92E-08	9.31E-08	7.48E-09
	p-Value	0.673	0.952	0.812	0.934	0.983	0.952
Constant	coefficient	0.1228363	0.0718138	0.0483091	0.8064237	0.2511578	-0.0060852
	standard error	31.5737	1.084661	5.914272	43.33134	80.69305	8.99154
	p-Value	0.997	0.947	0.993	0.985	0.998	0.999

*The state in which a bank is headquartered is also controlled, as a whole, these dummy variables were statistically significant.

Mean Operating Income/ Total Assets

	mutual=0	mutual=1	coop=0	coop=1
2002	0.0138364	0.0114206	0.0137112	0.009778
2003	0.0143053	0.0106259	0.0141185	0.0076548
2004	0.0145928	0.009591	0.0143249	0.0098007
2005	0.0152931	0.0096957	0.0149961	0.0068657
2006	0.0152224	0.0066457	0.014745	0.006333
2007	0.0128794	0.0049518	0.0124284	0.0049365
2008	0.0098859	0.0026907	0.0094534	0.0078917

Mean Capital/Total Assets

	mutual=0	mutual=1	coop=0	coop=1
2002	0.1189699	0.1261398	0.1193691	0.0734417
2003	0.1219756	0.1302385	0.1224408	0.0744027
2004	0.1238559	0.1342769	0.1244595	0.0724312
2005	0.127486	0.1381426	0.1281101	0.0773848
2006	0.1317108	0.1412332	0.1322793	0.0726847
2007	0.1227076	0.1415231	0.1332505	0.0571686
2008	0.1235034	0.1353676	0.1242185	-----

Mean Real Wage (in thousands)

	mutual=0	mutual=1	coop=0	coop=1
2002	48.54509	54.72961	48.88173	50.86207
2003	50.85637	56.35429	51.15707	46.62077
2004	51.87857	57.51345	52.19281	55.61555
2005	51.12462	58.50168	51.54164	55.06465
2006	54.54833	58.18515	54.75853	54.65537
2007	52.01564	57.45189	52.33457	54.31599
2008	54.13766	58.37819	54.39414	-----

Mean Cost/ Income

	mutual=0	mutual=1	coop=0	coop=1
2002	69.60057	66.44584	69.44886	55.68354
2003	71.66763	69.94801	71.59092	62.97811
2004	71.98199	71.25754	71.95473	65.79826
2005	72.01989	72.30574	72.04682	67.01174
2006	73.14583	78.52435	73.46345	68.51073
2007	77.25755	83.16398	77.62514	63.19746
2008	81.52934	83.9122	81.693	41.81*

*only 4 observations

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