Too Legit to Quit?:
Banks vs. Credit Unions after the Financial Crisis

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Preliminary and Incomplete

Abstract:

How do different organizational forms compete? We use theory from the organizations and strategy literatures to develop propositions that explore competition between U.S. banks and credit unions in the aftermath of the 2007-2008 financial crisis. We propose that as public sentiment against banks turned sharply negative, some consumers found credit unions more appealing, due to their emphasis on value creation for the community rather than profit maximization. This shift directly led to an increase in market share for credit unions. These effects are expected to be most pronounced in regions where cooperative organizations, with similar missions to credit unions, are already more prevalent. However, the extent to which banks engage in local philanthropic giving is expected to moderate the main effect, since banks may be able to co-opt some of the successful features of credit unions into their own organizations. Using depository data on banks and credit unions from 1994-2011, we find support for these propositions.
Introduction

The 2007-08 financial crisis was a pivotal event in modern economic history. The crisis, which began accelerating as early as 2007, gripped the U.S. and much of the global economy, giving way to the biggest economic downturn in the U.S. since the Great Depression. In addition to millions of jobs lost, trillions of dollars in retirement accounts, housing wealth and national economic output also vanished. In looking for culprits, the world’s leading banks, many headquartered in the U.S., were an easy target. Public trust in America’s financial system decreased markedly during and following the crisis (Greve & Kim, 2013; Guiso, Sapienza, & Zingales, 2013) and it became commonplace for politicians, consumer groups, and even other business people to condemn banks and question their outsized role in the global economy. As public outrage at banks boiled over, nationwide campaigns such as the Move Your Money Project emerged and encouraged individuals and institutions to withdraw deposits from Wall Street banks and move their assets to local financial institutions such as credit unions. However, other than bad publicity and the still-to-be-determined impact of the Dodd-Frank legislation in the U.S., it remains unclear how much damage was done to banks or their market power during this period.

In this paper, we explore the fate of banks through the lens of organizational theory and aim to better understand the conditions under which credit unions would have benefited from public disapproval of banks. We first note that while credit unions and banks are typically described as distinct organizational forms (Hannan, 2010; Hannan & Freeman, 1986; Hsu & Hannan, 2005), regulatory changes and strategic shifts have resulted in a blurring of the boundaries between the two types of organizations. Even before the financial crisis, credit unions offered many of the same financial services that banks did. However, these two organizational
forms continue to be ruled by distinct, and sometimes competing “institutional logics”, or rules and expectations that govern their activities (Ruef & Scott, 1998). As a result, across the U.S. populations of credit unions and banks compete with each other for the same consumers. While credit unions provide financial services, they abide by an institutional logic of creating value for the community, rather than solely maximizing profits. Banks, on the other hand, operate under an institutional logic of maximizing profits. We argue that in the aftermath of the financial crisis, this key distinction with banks allowed credit unions to enhance their appeal to consumers in certain regions of the U.S. (Negro, Hannan, & Rao, 2010).

In particular, we maintain that the critique of banks in the aftermath of the financial crisis was never primarily about the appropriateness of providing basic financial services, like checking and savings accounts, mortgages and credit cards. Instead, the contention was that banks were destroying social value in the course of their providing financial services, ultimately threatening their legitimacy in eyes of many consumers. We propose that the threat of legitimacy loss of banks was significant in particular geographic regions, and directly benefitted credit unions, as consumers shifted their deposits away from banks.

Focusing on these regions, we find interesting geographic variation across the U.S. in terms of the heterogeneity of organizational forms. Some areas are quite hospitable to cooperative economic organizations, like utility and dairy co-ops, while others are much less so. We expect that credit unions will gain market share disproportionately in these regions. However, we also expect banks to be proactive in response to this potential loss of legitimacy, and specifically engage in activities to persuade consumers that they are also prioritizing value
creation for the community. Where these efforts are most successful, we expect credit unions to make fewer gains at the expense of banks.

To empirically test these predictions, we collect depository data on commercial banks and credit unions at the Metropolitan Statistical Area (MSA) level from 1994-2011. Results show that the share of commercial bank deposits as a fraction of total deposits (commercial bank deposits plus credit union deposits) experienced a marked drop following the financial crisis of 2007-08. During 2007-2011, the commercial banks’ deposit market share dropped from 85.8% to 84.4%, and this drop is larger and statistically significant than that of the pre-crisis period. We find evidence in support of two additional results that accord with our theoretical predictions. First, we find evidence that this drop was more pronounced in regions where cooperative organizations were already prevalent. Second, we find that the prior level of local charitable giving by commercial banks is negatively related to the drop in commercial bank deposit share.

Our theoretical predictions and results contribute to the large literature on the legitimacy of organizational populations, and in particular the consequences of and reactions to threats to legitimacy. The legitimacy of an organizational population, defined as the extent to which the population is recognized as socially desirable, proper, or appropriate (Suchman 1995), has been at the forefront of both theoretical work (Hannan and Carroll 1992) and empirical studies in such fields as institutional theory (Pollock and Rindova 2003, Ruef and Scott 1998), organizational ecology (Carroll and Hannan 2000, Hannan, Polos and Carroll 2007), and strategic management (Oliver 1991, Deephouse 1999). This literature converges on the notion that while being a member of a taken-for-granted population increases the availability of resources (Zuckerman
1999), disruptive events may elicit negative outcomes as they cause a breach in external audiences' trust in organizations' appropriateness.

Organizations that experience threat to legitimacy often experience withdrawal by key stakeholders (Jensen 2006, Chavis and Leslie 2008), losses in shareholder value (King and Soule, 2007; Hawn, Chatterji and Mitchell 2011), and expanding scrutiny impacting other organizations in the same field (Yu, Sengul and Lester 2008). This is especially so when the source of disruptive events is believed to reside within organizations forms (Jonsson, Greve and Fujiwara-Greve 2009). Theoretically, although the legitimacy literature has elucidated how the decline of legitimacy washes away critical resources, it has given little attention to how rivalry between competing forms affects legitimacy losses. By offering substitutive goods or services, rivalry organizations reduce stakeholders' cost of defection (Klein, Smith and John 2004). Besides, rivalry may heighten the awareness of alternative arrangements by the mere presence of these other organizational forms. The cognitive acceptance of organizational forms may decrease because of rival organizations nested in the same market niche (Hannan et al. 2007). By directly observing the affected organizations as well as its inter-population rivalry in our empirical setting, our paper captures how competition shapes the processes and outcomes of the legitimacy decline. Our work illuminates the tactics employed in competition between organizational populations (Carroll & Harrison, 1994) and builds on the well-established body of research in organizational theory on financial institutions (e.g. Barron, 1998; Barron, West, & Hannan, 1994; Haveman, 1992; Haveman, 1993a, b)

Moreover, by proposing a mechanism by which organizational forms can stem the loss of legitimacy through aping characteristics from other forms (e.g. banks incorporating social value
into their business models to meet the challenge of credit unions), we add to the literature on strategic choice (Child, 1972; Oliver, 1991) that proposes how organizations can shape their institutional environments.

In the next section, we expand on our theoretical propositions and present three testable hypotheses. We then turn to a description of our data and methods and discuss our results. Finally, we explore the theoretical implications of our findings, identify areas for future research, and conclude.

**Theoretical Development**

*Banks vs. Credit unions: Different Logics, Similar Services*

In this section, we aim to identify the salient features differentiating banks from credit unions and how some of these distinctions have blurred in recent years. Credit unions, which first appeared in the U.S. in the early part of the 20th century, represent “a distinctive organizational form within the class of deposit institutions” (Barron et al., 1994: 392; Moody & Fite, 1984). Credit unions became increasingly popular between 1935, when 1% of the US population belonged to one, to 1996, when over 11,000 credit unions were in operation serving 34% of the population (Hannan, 2003). However, deposits in credit unions are much smaller than bank deposits, so the average member typically holds a small amount of money in their account (Hannan, 2003).

There are several important institutional features of credit unions that differentiate them from banks. First, these non-profit entities operate on the mechanism of “one member, one vote” (Barron et al., 1994: 392). Second, they initially offered their services to members only and
individuals can only become members if they share a “common bond” with other members, whether through employment, faith based organizations, etc. (Barron et al., 1994: 392). While banks are owned by shareholders, credit unions are owned and operated by members (Fried, Knox Lovell, & Eeckaut, 1993). While banks seek to maximize profits, credit unions can be thought of as seeking to maximize the benefits of its members (Fried et al., 1993) and the broader community.

Despite these key differences, credit unions typically now offer many of the same services as banks, including checking and savings accounts and loans (Barron et al., 1994). There is a limited amount of work in economics and finance exploring competition between banks and credit unions. These studies generally find a connection between bank deposit rates and credit union membership, suggesting that credit unions are competing with banks for customers.

*The impact of the 2007-08 financial crisis*

In this section, we explain the financial crisis shifted particular consumers to more favorable opinions of credit unions, resulting in increased market share in certain regions of the U.S. The 2007-08 financial crisis led to a global recession and a broader critique of the role of banks in American society. Much of the scrutiny focused on the largest and most powerful global banks, many of which are headquartered in the U.S. As Greve and Kim (2013) point out, organizations scholars rarely have the opportunity to study dimensions of trust and legitimacy in this setting, since banks as an organizational form are largely taken for granted. In that way, the 2007-2008 financial crisis provides an unusual opportunity to generate theory about the decline of legitimacy, competing organizational forms, and strategic response in one of the most important sectors of the global economy.
However, since the founding of the Republic, there has been a lively public debate over the legitimacy of banks, and a consolidated financial sector in particular. The debate spawned the formation of two early political parties, with Alexander Hamilton’s Federalists more confident in the efficiency of centralized banking than Thomas Jefferson’s Democratic-Republicans, who were greatly skeptical of concentrated power among banking elites. This divide continued through the 19th century with Andrew Jackson’s invalidation of the charter of the 2nd Bank of the U.S. (Marquis & Lounsbury, 2007). Through the populist movements of the late 19th century and the public outcry over the role of bad banks in the run-up to the Great Depression, banks were frequently under scrutiny but also wielded significant political power.

Later in the 20th century, there was a broad deregulation of the American financial sector, including changes in bankruptcy law, interstate branching and the regulation of credit card interest rates. The 1999 Financial Services Modernization Act, which repealed key provisions of the famed Glass-Steagall Act, is also frequently identified by critics as a key enabler of a consolidated banking sector.

Despite these debates, the backlash against banks after the 2007-2008 financial crisis was particularly severe in the context of recent U.S. economic history. Large U.S. banks were the subject of numerous negative opinion articles, congressional scrutiny, and even legal investigations. Opinion polling data indicated a dramatic decrease in the favorability of banks and several pieces of legislation were introduced to regulate banks. Phrases like “too big to fail” and movements such as Occupy Wall Street sprung up as general critiques of the negative impact of banks on society. In addition, initiatives like the Move Your Money Project urged consumers and institutions to move their deposits to credit unions.
These efforts directly threatened the legitimacy of banks in a specific way. Legitimacy, defined as the extent to which the population is recognized as socially desirable, proper, or appropriate (Suchman 1995), depends in part on the fit between the mission of population members and prevailing institutional logic in the environment. The winds of change initiated by the financial crisis led to a misalignment between the institutional logic governing banks and the external environment, in particular on the issue of value created for the broader community.

As discussed above, credit unions were in particularly advantageous position to take advantage of the threat to legitimacy towards banks. After all, those consumers who perceived banks to be destroying social value did not question the appropriateness and legitimacy of financial services itself. Since credit unions had evolved in recent years to provide many of the same financial services as banks, while retaining their institutional logic around value creation for the community, they were especially well positioned to appeal to dissatisfied consumers. This dynamic created a battlefield for competing institutional logics that has been documented in the prior literature (e.g. Battilana & Dorado, 2010).

We propose that the most salient feature of credit union’s mission, especially after the financial crisis, was the appeal to creating community value. The “one member one vote” and common bond rules serve as reinforcements of a mission that values individuals equally, no matter how powerful they might be. The focus on shared value rather than profit maximization, despite offering the same financial services, provided a key distinction from banks. As the legitimacy of banks was threatened, we predict that consumers shifted to credit unions. Thus, we propose:
**H1:** After the 2007-08 financial crisis, American credit unions gained market share at the expense of banks.

**Regional variation in the legitimacy of alternative organizations**

Despite our prediction that credit unions will gain market share from banks in general, we expect significant regional variation. In some regions, we expect that cooperative forms of organization will be more prevalent and accepted. These dimensions should impact credit unions, which incorporate features of both consumer and producer cooperatives (Fried et al., 1993). There are several mechanisms by which the presence of existing cooperative organizations will impact credit union market share gains. First, the presence of existing cooperatives may reflect an underlying community preference for alternative modes of economic organization and distinct institutional logic governing coops. Second, existing producer and consumer cooperatives raise awareness for alternative organizational forms among local consumers and the stakeholders of existing cooperatives can also marshal support for new organizations that share a common institutional logic.

Based on these mechanisms, we expect that the wide adoption of cooperative forms of organizing in various economic sectors in a particular region should be positively related to credit union market share gains after the financial crisis. We propose:

**H2:** Credit unions will gain more market share from banks in locations where there is already a higher prevalence of cooperative organizations.

The early work on institutional theory did not include a significant role of organizations to respond to and shape their environment. To remedy this gap, Oliver (1991) proposed different
categories of strategic responses that organizations could adopt in the wake of institutional change. The five broad strategies are “acquiesce”, “compromise”, “avoid”, “defy”, and “manipulate”. The manipulate strategy includes tactics such co-opting, influence and control. In the aftermath of the financial crisis, banks clearly recognized the threat to their legitimacy and took specific steps to mitigate it. Our theoretical development thus far illuminates the contention that banks did not prioritize value creation for the community as part of their institutional logic. As a strategic response, we expect banks to engage in activities to influence consumers and persuade them that the prevailing logic for banks could also include value creation for the community, not simply profit maximization. To the extent these efforts are successful, we expect that banks would be more likely to preserve their market share in regions where they allocated more funds towards creating values in the community. We propose:

\[ H3: \text{Credit unions will gain less market share from banks in locations where banks allocate more funds towards creating value for the community.} \]

**Methods**

**Data**

We collect data on credit unions from the *National Credit Union Administration Call Reports* from the second quarters of each year during 1994-2011. We start in 1994 as call reports prior to 1994 are not available for online access. We calculate the institutional-level deposit amount in credit unions by summing up total number of shares and deposits that includes the deposits for both member and nonmembers. We collect data on commercial banks from the *FDIC Summary of Deposits Database* during 1994-2011. As banks are required to submit branch office annual deposit data as of June 30, the depository data of credit unions and commercial
banks are drawn from the same time period of each year. We aggregate the deposit amounts for both credit unions and commercial banks to market, defined at the metropolitan statistical area (MSA)-state level. For example, the boundary of the Philadelphia metro area crosses into two states (Pennsylvania and New Jersey) and so is divided into two mutually exclusive areas. In addition, areas in each state not part of an MSA are grouped into a statewide non-MSA area.

**Variables**

Consistent with the economic literature on the competition between credit unions and commercial banks (e.g., Pearce, 1984; Feinberg, 2001), our main dependent variable is commercial banks’ deposit market share for a given year and market, which is the share of commercial bank deposits as a fraction of total deposits measured by the commercial bank deposits plus credit union deposits. *Post Crisis* is a dummy variable, that equals one for all years after 2007 (inclusive), and zero otherwise.

We gauge the prevalence of cooperative organizations using a diversity measure that accounts for how widely adopted the cooperative form of organizing is in a given market. We collect the number of cooperatives in each state in different sectors, including commercial sales & marketing, social & public services, financial services, and utilities, and the data is sourced from the University of Wisconsin Center for Cooperatives.\(^1\) Compiled in 2006 using sampling techniques, the data is to our knowledge the most comprehensive source on the economic and social activity that is accounted for by cooperatives in the U.S. We calculate the diversity measure of how widely used the cooperative forms are in the state’s economic and social activities using the Blau index \((1 - \Sigma q^2\), where \(q\) is the sector category proportion). We split the

sample by median so that states with high Blau index are coded as with high prevalence of cooperative organizations.

We measure the banks’ community value creating funds using the philanthropic givings of the nation’s largest banks towards each market. We use philanthropic givings as it is an important means for firms to solidify the connections with local communities (Galaskiewicz 1997; Marquis, Glynn, and Davis, 2007), and firms’ level of generosity responds closely to periodical local demands (Tilcski and Marquis, 2013). We define large banks, as the U.S. banks that are owned by the holdings companies that are ranked as the top 10 commercial banks in terms of consolidated assets in 2006. As these ranking are published quarterly and vary, we code as large banks all banks that ever made to top ten in any quarter of 2006, a year preceding to the financial crisis, and end up having a list of 15 banks under this category. These banks are Bank of America, JP Morgan Chase, Citibank, Wachovia, Wells Fargo, US Bank, Suntrust Bank, State Street Corp, KeyBank, Bank of New York, PNC, National City Bank, Regions Bank, Branch Bank, Fifth Third Bank. In unreported robustness test analysis, we create two alternative lists of large U.S. banks. The first list takes the top five commercial banks by consolidated assets in 2006. The second list consists of eight U.S. banks that are designed as systematically important financial institutions by Financial Stability Board, i.e., so-called the too-big-to-fail banks. The results are robust with alternative definitions of large banks.

We collect corporate philanthropic givings data from the Foundation Directory Online (FDO) database from 2003-2006. FDO combines data from the Internal Revenue Service, and documents data on corporate cash giving to (1) foundations, which are required to provide the

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2 These five banks include Bank of America, JP Morgan Chase, Citibank, Wachovia, and Wells Fargo.

data on grant amount and receipt organizations to comply with federal regulations; as well as (2) corporate direct giving program towards charities, which are incentivized to supply the same data so that corporations receive tax deduction for its pre-tax income. We match the list of names of large banks with FDO companies to obtain the bank philanthropic donations. FDO reports the receipt organization for each donation, and we match the zipcode of the receipt organization to market and obtain the market-year level data on bank philanthropic givings.

We split the sample by median so that markets with high levels of philanthropic givings are coded as with high abundance of banks’ community value creating funds. We use donation data in 2003, 2004, 2005, and 2006 respectively to conduct the split sample analysis. Table 1 reports the descriptive statistics of these variables.

***Insert Table 1 Here***

**Analysis**

We hypothesize that there is a threat to legitimacy towards large banks incurred by the financial crisis, which affects depositor’s choice of institutions to bank with. Our prediction is that following the financial crisis, the share of commercial bank deposits in total deposits decreases and that the effect was especially pronounced in markets with high level of acceptance of the institutional logic of cooperatives measured by the prevalent of other types of co-op establishments. We also predict that the effect was mitigated in markets where banks display more of a community orientation, measured by the abundance of bank philanthropic givings. To test our hypotheses, the main specification is

\[ y_{i,m,t} = \alpha + \beta_1 Crisis_t + \delta m + Trend * \delta m + X_{i,m,t} \beta + \epsilon_{i,m,t}, \]
where $y_{i,m,t}$ is the deposit share of commercial banks of market $i$ of state $m$ in year $t$. $\text{Crisis}_t$ is set equal to 1 during 2007-2011 after the crisis strikes. We include state fixed effects $\delta_m$ to control for the differences in geographic characteristics, local business law codes on cooperative statutes, as well as demographic factors that matter for choices of financial institutions that vary across states. $\text{Trend}$ counts years since 1994, and we include $\text{Trend} \times \delta_m$ to account for state specific trends. $X_{i,m,t}\beta$ is a vector of market characteristics. Throughout all of our specifications the error terms are clustered at the state level to allow for correlation between multiple markets within a state. We are particularly interested in the coefficients $\beta_1$, which is hypothesized to be negative in H1. We are also interested in the comparison of coefficients $\beta_1$ across various split sample analyses.

**Results**

The left panel of Figure 1 plots the total deposit amounts across markets for credit unions as well as commercial banks during 1994-2011. Both forms of financial institutions experience deposit increases throughout the years, and the climb appears to be steeper on average for credit unions than for commercial banks. The right panel of Figure 1 plots the commercial banks’ deposit market share during the same time period. In particular, due to deregulations and credit unions’ aggressive expansion on their product and services lines (Goddard and Wilson, 2005), banks have progressively lost share of depository market between late 1990s and early 2000s. Starting from 2002, the decline of commercial banks’ market share stagnated and bounced back a little. Once the financial crisis stuck in the mid of 2007, commercial banks’ depository market share dropped from 85.8% in 2007 to 85.1% in 2009, and the downward trajectory continued into a 2011 level of 84.4%.
We explore graphically whether the theoretical predictions on regional variations hold. First, for H1, we spilt the markets into two, one with high and one with low levels of prevalence of other cooperative organizations. Figure 2 shows how the commercial banks’ deposit share changes differ in these two sets of markets along the lines of the theoretical predictions. The commercial banks have a lower market share in high co-op prevalence markets, and have experienced a steeper slide post crisis than that of the low prevalence markets. Second, we explore the results for bank philanthropic givings in H2. We spilt the markets in two, one with high and one with low amounts of bank philanthropic givings. Figure 3 shows how the commercial banks’ deposit share differ in these two sets of markets along the lines of our hypothesis, using bank giving data from 2003, 2004, 2005 and 2006 respectively. The markets with high bank philanthropic givings experienced a flatter drop of deposit share than that of low givings markets, and the pattern appears to be consistent across different basis of sample splitting.

The gain of credit unions deposit market share might have been driven by factors other than the legitimacy battle with commercial banks on the grounds of organizational forms. To examine whether the results hold up against alternative geographic, regulatory, as well as demographic factors that matter for choices of financial institutions that vary across states, we run a linear regression of logged proportion of deposit share on a crisis dummy, while including state fixed effects. Table 2 reports the effect of the crisis on bank deposit share, using the dependent variable $y_{i,m,t}$, the log of deposit share ratio of commercial banks in a market in each
year. Model 1 indicates that post crisis the bank deposit ratio is significantly lower than that of 1994-2006. Model 2 shows that the result is robust to controlling for state-specific time trend using state-year dummies variables, supporting Hypothesis 1. The estimated coefficient indicates that in 2007-11, the bank deposit ratio is 1.80% proportionally lower than that of 1994-2006. Model 3 split the post-crisis era into two time periods of 2007-8, and 2009-2011. The results indicate that the impacts of the financial crisis on bank deposits deepened over time: during 2007-8, the commercial banks’ deposit ratio was 1.1% proportionally lower than that of 1994-2006; and in 2009-11, the ratio drop doubled to 2.3%.

In model 4 (A) and (B), we ran split sample analysis based on the prevalence of cooperatives as forms of organizing in the local economic and social activities. Although the results indicate that only the high-prevalence market experienced a statistically significant drop in commercial banks’ deposit ratio, tests of coefficient differences across the models suggest that we can reject coefficient equality at the 10% level of confidence. Hypothesis 2 is therefore supported.

***Insert Tables 2 Here***

Table 3 continues to report the effect of the crisis on bank deposit share, using the dependent variable $y_{i,m,t}$, the log of deposit share ratio of commercial banks in a market in each year. To test how bank philanthropic gives mitigate the negative effect of legitimacy threat on banks, we run split sample analysis, divided by markets that received low and high levels of philanthropic givings from the nation’s fifteen largest commercial banks in 2003 (M5), 2004 (M6), 2005 (M7), and 2006 (M8). We find consistently that the markets with high givings experienced a smaller post-crisis drop in bank deposit market share. For example, in M8, the commercial banks’ deposit ratio during 2007-2011 was 0.7% proportionally lower than that of
1994-2006 in high givings markets, and 2.9% in low givings markets. Tests of coefficient differences across the models suggest that we can reject coefficient equality at the 1% level of confidence in M5, 5% level of confidence in M8, and 15% level of confidence in M6 and 7. Overall, Hypothesis 3 is supported.

***Insert Tables 3 Here***

In Table 4, we run robustness tests to rule out alternative explanations. One such explanation is that in markets with richer residents whose deposit accounts have a balance higher than the FDIC insurance threshold of $250,000, the depositors may have a heightened post-crisis concern about the safety of their money in the commercial banks and thus have higher (economic rather than social) incentives to move money to credit unions. In M9, we test this possibility by running a split sample analysis on markets with high and low levels of per capita income, and find no significant difference in results between regions with high and low incomes. The second alternative explanation is that depositors are attracted to credit unions not because of legitimacy concerns, but due to competitive measures such as a higher interest rates on deposits in credit unions. From the SNL Financials database, we collect interest rate data for three-month checking accounts for both credit union and banks in 2007 and aggregate to obtain the state-level rate differential between the two types of banking institutions. On average, credit unions do offer better rates than commercial banks. However, the difference is minimal with a mean of 0.31%. In model 10, we run another split sample analysis over markets with high and low differences in interest rates, and find no significant differences in the results between high and low markets.

***Insert Table 4 Here***
Conclusion

The 2007-8 financial crisis had severe impacts on a wide range of economic and social outcomes, and our paper examines one of those, namely the threat to legitimacy of the commercial banks and in particular its profit-maximizing institutional logics. Drawing on the organizational theory literature on the competition between organizational forms, we examine whether and the conditions under which the credit unions, that offer similar service as banks but abide by an alternative institutional logics of creating values for the community, benefitted from the banks’ legitimacy decline in the form of market share.

We find broad evidence that support our propositions. During 2007-2011, the commercial banks’ deposit market share, as a fraction of the total deposit in both commercial banks and credit unions, dropped from 85.8% to 84.4%, and this drop is larger and statistically significant than that of the pre-crisis period.

We also find regional variations in the decline of banks’ market power that is consistent with our theoretical predictions. The drop of the commercial banks’ deposit market share is more pronounced, in the markets where the cooperative forms of organizing economic and social activities is more acceptable, evidenced by the existence of co-op establishments in diverse categories of economic and social activities. In addition, the drop of the commercial banks’ deposit market share is mitigated, in markets where the nation’s largest commercial banks had higher levels of pre-crisis philanthropic givings. These results are robust to the considerations of alternative explanations on people’s concern of the safety for their deposits in the commercial banks, as well as the competitive rate offerings from the credit unions.
References [Preliminary and Incomplete]


Table 1. Summary Statistics

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Note: N=5544.
Figure 1. Deposit Amounts (of Commercial Banks and Credit Unions) and Deposit Market Share (of Commercial Banks), 1994-2011

Note: (Left) figure plots the commercial banks’ and credit unions’ total deposit amounts during 1994-2011. Depository data on the credit unions is drawn from the National Credit Union Administration Call Reports. Depository data on the commercial banks is drawn from the FDIC Summary of Deposits Database. (Right) figure plots the commercial banks’ deposit market share during 1994-2011. The commercial banks’ deposit market share of a given year is calculated as a fraction of the commercial bank deposits over the total deposits at commercial banks and credit unions.
Figure 2. The Commercial Banks’ Deposit Market Share by the Prevalence of Cooperative Organizations

Note: Figure plots the commercial banks’ deposit market share during 1994-2011, divided by markets that have low/high levels of prevalence of cooperative organizations. The prevalence measure examines how narrowly/widely adopted the cooperative form is in a given market by median splitting the Blau index of diversity of cooperative activities, including commercial sales & marketing, social & public services, financial services, and utilities. Depository data on the credit unions is drawn from the National Credit Union Administration Call Reports, 1994-2011. Depository data on the commercial banks is drawn from the FDIC Summary of Deposits Database, 1994-2011. The commercial banks’ deposit market share of a given year is calculated as a fraction of the commercial bank deposits over the total deposits at commercial banks and credit unions. Data on the count and types of activity of cooperative organizations is drawn from the Center for Cooperative at University of Wisconsin-Madison.
Figure 3. The Commercial Banks’ Deposit Market Share by Banks’ Philanthropic Giving

Note: Figure plots the commercial banks’ deposit market share during 1994-2011, divided by markets that receive high/low level of philanthropic givings from the nation’s fifteen largest commercial banks in 2003, 2004, 2005, 2006 respectively. Depository data on the credit unions is drawn from the National Credit Union Administration Call Reports, 1994-2011. Depository data on the commercial banks is drawn from the FDIC Summary of Deposits Database, 1994-2011. The commercial banks’ deposit market share of a given year is calculated as a fraction of the commercial bank deposits over the total deposits at commercial banks and credit unions. Data on banks’ philanthropic givings is drawn from the Foundation Directory Online, 2003-2006.
Table 2. Effects of Financial Crisis on the Commercial Banks’ Deposit Market Share

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Full Sample</td>
<td>Full Sample</td>
<td>Full Sample</td>
<td>Low Prevalence of Coops</td>
<td>High Prevalence of Coops</td>
</tr>
<tr>
<td>Post Crisis</td>
<td>-0.0180***</td>
<td>-0.0180***</td>
<td>-0.0104</td>
<td>-0.0278***</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0050)</td>
<td>(0.0050)</td>
<td>(0.0065)</td>
<td>(0.0073)</td>
<td></td>
</tr>
<tr>
<td>Year 2007-2008</td>
<td>-0.0110**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0039)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2009-2011</td>
<td>-0.0227***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0058)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-0.1550***</td>
<td>-0.1078***</td>
<td>-0.1078***</td>
<td>-0.1108***</td>
<td>-0.1039***</td>
</tr>
<tr>
<td></td>
<td>(0.0014)</td>
<td>(0.0014)</td>
<td>(0.0014)</td>
<td>(0.0018)</td>
<td>(0.0020)</td>
</tr>
<tr>
<td>Chi-Square Test of Difference Across Subsamples</td>
<td></td>
<td></td>
<td></td>
<td>3.28 +</td>
<td></td>
</tr>
</tbody>
</table>

State Fixed Effects: Y
State-specific Time Trend: N, Y
R2: 0.2419, 0.2641, 0.2645, 0.2531, 0.2751
Observations: 5544, 5544, 5544, 2430, 3114

Notes: Dependent Variable: logged fraction of the commercial bank deposits over the total deposits at commercial banks and credit unions, at a given market in a given year. Coefficients of OLS regressions. Post Crisis is a dummy variable, that equals one for all years after 2007 (inclusive), and zero otherwise. Models 1-3 includes the full sample, and Model 4 conducts the split sample analysis, divided by markets that have low/high levels of prevalence of cooperative organizations. Chi-Square test values are reported. Robust standard errors, clustered at the state level, are included in brackets. Significance Level: + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
### Table 3. Effects of Financial Crisis on the Commercial Banks’ Deposit Market Share

<table>
<thead>
<tr>
<th></th>
<th>M5 Subsample (A)</th>
<th>M5 Subsample (B)</th>
<th>M6 Subsample (A)</th>
<th>M6 Subsample (B)</th>
<th>M7 Subsample (A)</th>
<th>M7 Subsample (B)</th>
<th>M8 Subsample (A)</th>
<th>M8 Subsample (B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low Givings</td>
<td>High Givings</td>
<td>Low Givings</td>
<td>High Givings</td>
<td>Low Givings</td>
<td>High Givings</td>
<td>Low Givings</td>
<td>High Givings</td>
</tr>
<tr>
<td>Post Crisis</td>
<td>-0.0266***</td>
<td>-0.0039</td>
<td>-0.0227**</td>
<td>-0.0112*</td>
<td>-0.0251**</td>
<td>-0.0111*</td>
<td>-0.0289**</td>
<td>-0.0072+</td>
</tr>
<tr>
<td></td>
<td>(0.0071)</td>
<td>(0.0050)</td>
<td>(0.0068)</td>
<td>(0.0047)</td>
<td>(0.0080)</td>
<td>(0.0048)</td>
<td>(0.0082)</td>
<td>(0.0041)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.1737***</td>
<td>-0.1097***</td>
<td>-0.1960***</td>
<td>-0.1124***</td>
<td>-0.1676***</td>
<td>-0.1270***</td>
<td>-0.1681***</td>
<td>-0.1371***</td>
</tr>
<tr>
<td></td>
<td>(0.0020)</td>
<td>(0.0014)</td>
<td>(0.0019)</td>
<td>(0.0013)</td>
<td>(0.0022)</td>
<td>(0.0013)</td>
<td>(0.0023)</td>
<td>(0.0011)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chi-Square Test of Difference Across Subsamples</th>
<th>7.18** (P value: 0.0074)</th>
<th>2.64 (P value: 0.1043)</th>
<th>2.56 (P value: 0.1094)</th>
<th>6.26* (P value: 0.0123)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Fixed Effects</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>State-specific Time Trend</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>R2</td>
<td>0.4078</td>
<td>0.3060</td>
<td>0.4263</td>
<td>0.2656</td>
</tr>
<tr>
<td>Observations</td>
<td>3456</td>
<td>2088</td>
<td>3294</td>
<td>2250</td>
</tr>
</tbody>
</table>

*Notes:* Dependent Variable: logged fraction of the commercial bank deposits over the total deposits at commercial banks and credit unions, at a given market in a given year. Coefficients of OLS regressions. Post Crisis is a dummy variable, that equals one for all years after 2007 (inclusive), and zero otherwise. Models conduct split sample analysis, divided by markets that received low/high levels of philanthropic givings from the nation’s fifteen largest commercial banks in 2003 (M5), 2004 (M6), 2005 (M7), 2006 (M8) respectively. Chi-Square test values are reported. Robust standard errors, clustered at the state level, are included in brackets. *Significance Level:* + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.
Table 4. Robustness Checks - Effects of Financial Crisis on the Commercial Banks’ Deposit Market Share By Per Capita Income and Interest Rates

<table>
<thead>
<tr>
<th></th>
<th>M9. Per Capita Income</th>
<th>M10. Interest Rate Differential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>Post Crisis</td>
<td>-0.0246***</td>
<td>-0.0126*</td>
</tr>
<tr>
<td></td>
<td>(0.0065)</td>
<td>(0.0067)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.1185***</td>
<td>-0.0763***</td>
</tr>
<tr>
<td></td>
<td>(0.0018)</td>
<td>(0.0019)</td>
</tr>
</tbody>
</table>

Chi-Square test of Difference Across Subsamples

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square test of</td>
<td>2.46</td>
<td>0.45</td>
</tr>
<tr>
<td>Difference Across</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subsamples</td>
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<td></td>
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</tbody>
</table>

State Fixed Effects

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>State Fixed Effects</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

State-specific Time Trend

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>State-specific Time Trend</td>
<td>Y</td>
<td>Y</td>
</tr>
</tbody>
</table>

Observations

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Observations</td>
<td>2538</td>
<td>3006</td>
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<tr>
<td></td>
<td>2394</td>
<td>3132</td>
</tr>
</tbody>
</table>

R2

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>R2</td>
<td>0.4968</td>
<td>0.2707</td>
</tr>
<tr>
<td></td>
<td>0.1131</td>
<td>0.3462</td>
</tr>
</tbody>
</table>

Notes: Dependent Variable: logged fraction of the commercial bank deposits over the total deposits at commercial banks and credit unions, at a given market in a given year. Coefficients of OLS regressions. Post Crisis is a dummy variable, that equals one for all years after 2007 (inclusive), and zero otherwise. Models conduct split sample analysis, divided by markets that have low/high levels of per capital income (M9), and low/high levels of difference of interest rates on checking accounts between credit unions and commercial banks (M10). Models 10 lose 18 observations due to missing data on interest rates. Chi-Square test values are reported. Robust standard errors, clustered at the state level, are included in brackets. Significance Level: + p<0.10; * p<0.05; ** p<0.01; *** p<0.001.