Cross-Charter Consolidation: Evidence from Credit Union Acquisitions of Community Banks *

Panagiotis Avramidis† David Huberdeau-Reid ‡ George G. Pennacchi §

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Abstract

We study cross-charter mergers in which credit unions acquire community banks and compare them to traditional bank acquisitions of community banks. Using U.S. credit union and bank data from 2014 through 2025, we find that credit unions acquire community banks with relatively higher commercial lending exposure and weaker deposit franchise value. We then compare post-acquisition outcomes using a dynamic framework that tracks changes in lending and deposits by acquiring institutions across geographic markets.

Keywords: credit unions; community banks; mergers and acquisitions

JEL classification: G21, G34, C25

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†Alba Graduate Business School, The American College of Greece; Email: pavramidis@alba.acg.edu

‡Fogelman School of Business and Economics, The University of Memphis; Email: dhbrdrid@memphis.edu

§Gies College of Business, University of Illinois; Email: gpennacc@illinois.edu

1 Introduction

Banks in the United States have undergone continuous consolidation over the past four decades, a process widely recognized as one of the defining structural changes in the modern financial services industry (Berger et al., 1999). As shown in Figure 1, the number of independent commercial banks and savings institutions, collectively referred to as "banks," has declined from 17,963 in 1985 to 4,327 in 2025. The primary mechanism underlying this decline has been voluntary mergers and acquisitions.[1] Until recently, this consolidation occurred almost exclusively through mergers between institutions having the same charter. The emergence of credit unions as acquirers of banks represents a fundamental departure from the historical pattern, introducing a new form of cross-charter consolidation in which member-owned, non-profit institutions acquire institutions that are typically shareholder-owned, profit-making ones.

Since the early 2010s, credit unions have completed multiple acquisitions of small "community" banks. As of the end of 2025, all of these credit union-acquired banks had total assets below $1.5 billion. Figure 2 presents the annual time series of completed acquisitions of all banks. Initially, the number of banks acquired by credit unions was negligible relative to the number acquired by other banks. Since 2022, however, credit unions have accounted for more than 10 percent of these small bank acquisitions, in large part because the total number of bank acquisitions has declined while credit union acquisitions have grown modestly. Figure 3 shows a similar pattern when acquisitions are measured by the value of target assets rather than by the number of transactions. By 2025, credit unions accounted for approximately 20 percent of the assets acquired in these small community bank mergers.

This paper analyzes the motives for, and the outcomes of, credit union acquisitions of small community banks during the period of 2014 to 2025. As a benchmark for comparison, it uses bank acquisitions of similar-sized community banks. With respect to credit unions' versus banks' motives for acquiring these community banks, its findings point to two main differences. First, relative to bank acquirers, credit unions acquire community banks with higher pre-merger commercial loan exposure. Second, community banks acquired by credit unions pay more competitive pre-merger deposit interest rates compared to the rates paid by community banks acquired by other banks. Expressed differently, credit unions tend to acquire community banks with relatively

[1] FDIC Annual Data Summaries, available at https://www.fdic.gov/analysis/bank-data-statistics.

lower deposit franchise value.

With regard to merger outcomes, the paper finds several differences in the pre- versus post-merger characteristics of the combined (pro-forma) acquirer and target institutions when the acquirer is a credit union relative to when it is a bank. Post-merger commercial loan growth is not significantly different when the acquirer is a credit union versus when it is a bank. However, there is some evidence that credit union acquisitions are associated with faster growth in post-merger residential real estate lending compared to bank acquisitions. Interestingly, deposit growth is significantly lower immediately following credit union acquisitions of community banks relative to bank acquisitions of community banks. This occurs even though the paper shows that post-merger deposit interest rates rise more when the acquirer is a credit union than when it is a bank.

What is the economic intuition behind the paper's results? An explanation for why credit unions tend to acquire banks with higher commercial loan exposure may be related to changes in credit union regulation. Proposed in 2015 and effective in 2017, the National Credit Union Administration (NCUA) revised its Member Business Loan (MBL) rule by removing several prescriptive commercial-lending limits and adopting a more flexible, principles-based approach. The revision increased credit unions' ability to expand their commercial lending, allowing them to pursue additional small business lending opportunities or to diversify their loan portfolios. Consistent with this regulatory change, credit unions may have been motivated to acquire business lending expertise by purchasing community banks that specialized in commercial lending. Acquiring a community bank's experienced loan officers and established relationships with local businesses might provide a shortcut to greater commercial lending as opposed to building these capabilities from scratch.

The tendency of credit unions to acquire banks paying relatively high deposit rates is likely due to their distinctive ownership structure. A credit union's share accounts are functionally similar to a bank's deposit accounts, except that the holders of share accounts are also the owner-members of the credit union. When a credit union acquires a bank, former bank depositors who remain with the successor credit union become members and receive dividends on their shares in place of interest on deposits. That is very different from a shareholder-owned bank where the bank's equity holders, rather than its depositors, receive dividends.

Consequently, the target bank's deposit franchise value is likely to be lost when

a credit union acquires it, in contrast to when a shareholder-owned bank acquires it. Ceteris paribus, a bank acquirer is willing to pay more for a target with a high deposit franchise value because the target's retained funding cost advantage accrues to the acquiring bank's shareholders. In turn, a credit union will tend to acquire a target with low franchise value, i.e., one that paid relatively high deposit interest rates.

Relative to community banks, credit unions have historically had a comparative advantage in originating residential mortgages versus originating small business loans. The paper's post-merger outcomes analysis suggests that credit union acquirers are more successful in transferring their mortgage lending skill to target banks compared to target banks transferring their commercial lending skill to credit union acquirers. One reason why credit union - bank acquisitions fail to have greater commercial lending growth compared to bank - bank acquisitions might be due to the difficulty in retaining the target bank's loan officers and lending relationships. But another reason may be related to the finding that credit union - bank acquisitions have significantly lower combined post-merger deposit growth compared to that of bank - bank acquisitions. Unlike residential mortgages that a credit union can fund using Government Sponsored Enterprises (GSEs), commercial loans have fewer funding alternatives, making them more dependent on deposit funding.[2] Hence, a lack of deposit growth may constrain commercial lending growth.

A likely explanation for the finding of relatively slower deposit growth following a credit union acquisition is that some of the target bank's depositors do not meet the credit union's field of membership requirements, making them ineligible to join (Winn et al. (2019)). This "common bond" membership restriction can also rationalize the paper's seemingly contrary results that credit unions' post-acquisition deposit growth is relatively slower even though its post-acquisition deposit interest rate growth is relatively higher compared to bank acquisitions: some target bank depositors may have preferred the credit union's higher interest rates but were ineligible to join due to field of membership restrictions.

This paper contributes to prior research on mergers between depository institutions. A substantial literature examines why banks merge and which institutions become acquisition targets. Wheelock and Wilson (2000) consider factors that predict a bank's failure, its acquisition, or its remaining independent and show that managerial inef-

[2] A credit union can sell conforming mortgages to Fannie Mae and Freddie Mac and also fund mortgages via Federal Home Loan Bank advances. While the Small Business Administration provides partial guarantees on small commercial loans, it does not provide funding for the loan.

ficiency, low capitalization, and small size are among the factors that increase the likelihood that a bank is acquired. Focarelli et al. (2002) find that bank combinations reflect heterogeneous objectives, with mergers often seeking operating efficiencies and acquisitions more closely associated with portfolio restructuring and changes in lending policies. Similarly, Hannan and Pilloff (2009) show that target selection depends on the characteristics of potential acquirers and provide evidence that acquisitions transfer assets from less efficient institutions to more efficient organizations.

More recent research treats merger formation as a strategic interaction between potential acquirers and targets. Akkus et al. (2016) model bank mergers as a matching problem and show that merger value depends on geographic overlap, regulatory considerations, and network synergies between the participating institutions. Uetake and Watanabe (2022) further demonstrate that acquisitions can provide a means of entering new markets when competitive or regulatory barriers make de novo expansion less attractive. These studies establish that merger activity depends not only on the individual characteristics of acquirers and targets, but also on the complementarities between them.

The consequences of consolidation may also extend beyond the institutions directly involved in a transaction. In particular, Jagtiani et al. (2022) find that acquisitions by non-local community bank acquirers reduce small business lending in counties previously served by the target. Their findings highlight the importance of evaluating merger outcomes within local banking markets rather than focusing exclusively on changes in the financial performance of the participating institutions.

A parallel literature examines consolidation within the credit union industry. McKillop and Wilson (2011) argue that technological innovation, product diversification, and regulatory reform have transformed the operating environment of credit unions and encouraged industry consolidation while preserving the cooperative ownership model. Goddard et al. (2009) find that smaller, less profitable, and less technologically advanced credit unions face higher acquisition hazards, suggesting that operational weakness and organizational viability are important determinants of credit union merger activity. Although mergers account for much of the decline in the number of credit unions, Goddard et al. (2014) show that the increasing concentration of credit union assets has been driven primarily by differential growth among surviving institutions.

Research examining outcomes generally find that the benefits are not distributed equally between acquiring and target credit unions. Fried et al. (1999) find that merg-

ers improve service provision for members of acquired credit unions without materially harming members of acquiring institutions. Bauer et al. (2009) similarly conclude that merger benefits accrue primarily to target members and to regulators through resolution of weaker institutions, acquiring credit unions realize comparatively modest gains. Recently, Kozlowski et al. (2024) show that post-merger credit union performance depends on the underlying motivation for consolidation, with financially motivated mergers producing stronger improvement than those undertaken primarily to expand member services.

A related literature has studied differences between credit unions and banks. For example, Smith et al. (1981) model a credit union's objective function as maximizing a weighted average of members' net gains on savings and their net gains on borrowing, showing that it leads to different deposit and loan rate setting compared to that from profit maximization which is typically considered to be the objective of a bank. Coroaton (2020) finds that credit union mortgage lending grew faster compared to banks during the Great Recession, mainly by a reduction in credit unions' profits. Similarly, Shahidinejad (2026) finds that credit unions charge lower mortgage and auto loan rates compared to banks on observably similar borrowers. He also finds that credit unions paid higher deposit rates, and the net transfer of profits to member borrowers and savers exceeded credit unions' tax advantage relative to banks.

Despite the extensive literature on bank mergers and credit union consolidation, previous research has focused almost entirely on combinations within a common organizational form: banks acquiring other banks or credit unions merging with other credit unions. Consequently, relatively little is known about mergers in which a member-owned credit union acquires a shareholder-owned bank. Studying these cross-charter acquisitions is important because, as prior literature also points out, credit unions and banks differ fundamentally in their ownership, tax treatment, regulatory constraints, governance structures, and organizational objectives. These differences may affect acquisition incentives and post-merger outcomes that potentially have significant ramifications for local borrowers and depositors.

The plan of the paper is as follows. Section 2 outlines the data used in the paper and explains how variables are constructed. Section 3 studies which factors determine credit union acquirers' and bank acquirers' choices of target community banks. Section 4 analyzes the post-merger outcomes of the combined acquirer - target institutions when acquirers are credit unions versus when they are banks. Section 5 concludes.

2 Data and Variable Construction

This study uses regulatory-filling data to identify acquisitions of banks in the United States and to construct institution-level characteristics for bank and credit union acquirers and bank targets. Transactions are identified using the Federal Reserve's National Information Center (NIC), which provides detailed records of structural changes involving depository institutions. Institution-level characteristics are constructed from quarterly financial reports filed with regulators. For commercial banks and savings institutions, we use Reports of Condition and Income (Call Reports) filed with federal banking regulators through the Federal Financial Institutions Examination Council (FFIEC). To capture banks' local market structure and branch networks, we incorporate annual data from the Federal Deposit Insurance Corporation's (FDIC) Summary of Deposits (SOD) files. For credit unions, we use quarterly Call Reports and branch location data from the National Credit Union Administration (NCUA).

2.1 Transaction Identification

The Federal Reserve's NIC data records mergers, asset transfers, and other structural changes among depository institutions. Our sample period spans 2014–2025, beginning in the year when the first credit union–bank transaction appears in the transformations data. Each transformation is classified by a code reflecting the nature of the transaction and the proportion of assets transferred. In doing so, our approach is most closely aligned with definitions that emphasize both the transfer of control and the integration or absorption of the target institution (Focarelli et al., 2002; Wheelock and Wilson, 2000).[3]

The initial universe includes transactions involving commercial banks, savings banks, savings and loan associations, cooperative banks, industrial banks, and credit unions. In practice, the observed transactions are concentrated among commercial and savings banks on the target side and credit unions or commercial or savings banks on the acquirer side. We exclude institutions located in U.S. territories (e.g., Puerto Rico, Guam, and the U.S. Virgin Islands) to maintain geographic comparability. We further

[3]Prior studies define bank mergers using a range of criteria, including ownership thresholds, regulatory approval filings, and whether the transaction results in the absorption or disappearance of the target institution. For example, Hannan and Pilloff (2009) emphasize the acquisition of a controlling ownership interest, whereas Wheelock and Wilson (2000) focus on transactions in which the target institution is absorbed or ceases to operate independently. Adams (2012) provides a summary of the alternative criteria used in the literature to identify and select bank mergers.

exclude transactions involving bankers' banks, non-depository financial firms (such as credit companies and mortgage companies), failed-bank resolutions, and transactions in which the acquirer and target operate under the same bank holding company (BHC). This data screen ensures that our sample captures voluntary market-based, depository institution acquisitions, rather than regulatory interventions or internal reorganizations.

2.2 Target Institution-Level Variables

Target characteristics are measured using values from the pre-transaction period to reflect conditions prior to acquisition. For quarterly reported data, the pre-transaction period is defined as quarters $q-5$ through $q-2$ where date q denotes the acquisition quarter and the calculated measures are averages over this period. For annually reported data, the pre-transaction period is defined as $t-1$ where t denotes the acquisition year.

We begin by constructing a set of key institution-level variables that capture differences in lending, funding, and organizational form across target banks. One measure is *Commercial Lending*, defined as the ratio of the sum of commercial real estate and business-related loans (including construction and land development loans, multifamily loans, nonresidential loans and commercial and industrial loans) divided by total assets, averaged over the pre-transaction period. This ratio reflects differences in business model, distinguishing institutions that are more oriented toward commercial lending from those focused on residential real estate or consumer lending.

Another key variable captures deposit funding costs relative to competitive-market Treasury yields. In particular, each institution's *RateSpread* equals the difference between a maturity-matched Treasury yield and the institution's implicit deposit interest rate. The implicit deposit rate of institution j in quarter q, denoted r_{jq}^{dep}, is calculated as its total interest expense on deposits divided by its total amount of deposits. The maturity-matched Treasury yield, denoted r_{jq}^{Treas}, is calculated as:

$$r_{jq}^{Treas} = \sum_{m=1}^{5} w_{jmq}\, y_{mq},$$

where y_{mq} denotes the Treasury yield of maturity m, where m is one of five maturity buckets (3 months, 6 months, 2 years, and 5 years), and w_{jmq} is the share of institution

j's deposits held in maturity bucket m in quarter q.[4] Then, the rate spread is defined as the difference:

$$RateSpread_{jq} = r_{jq}^{Treas} - r_{jq}^{dep},$$

so that a greater rate spread indicates relatively lower deposit rates and, equivalently, a greater deposit franchise value.

It is well known that differences between competitive market interest rates and deposit rates are systematically larger when market rates are high due to "stickiness" in deposit rates.[5] Therefore to make a fair comparison of the relative cost of deposits across different institutions that merged at different points in time, we measure each institution's $RateSpread_j$ as the average $RateSpread_{jt}$ over the pre-sample period spanning 2003–2013.[6] During that period, market rates were significantly above zero allowing banks to earn rents as deposit rates adjusted less than one-for-one with market rates. In contrast, during the more recent near-zero rate periods, deposit spreads were mechanically compressed, limiting their ability to distinguish banks with strong versus weak deposit franchises (Kwan and Martinez, 2024). In other words, applying a rolling average as we did with other variables would increasingly replace high-rate informative observations with low-rate observations that contain less cross-sectional identifying variation.

A third key variable captures differences in tax status. Specifically, we define an indicator variable, *Subchapter S-Corporation*, equal to one if a bank's tax designation is Subchapter S corporation and zero otherwise. Subchapter S institutions are pass-through entities for tax purposes, meaning that income is not taxed at the corporate level but instead flows directly to shareholders and is taxed under personal income tax rates. In contrast, C-corporations are subject to corporate income taxation, potentially leading to double taxation of earnings. This classification reflects differences in tax treatment that may influence acquisition incentives, as well as the after-tax value of transaction amounts paid to sellers (Wilary Winn, 2018; Winn et al., 2019).

Furthermore, we include a set of other institution-level control variables, including *Size*, measured as the natural logarithm of total assets, *Efficiency*, proxied by the ratio

[4]Treasury yields of 3 months, 6 months, 2 years and 5 years are assumed to be representative of the deposit maturity buckets specified in Call Reports of 3 months or less, over 3 months through 12 months, over 1 year through 3 years, and over three years, respectively.

[5]Recent studies by Drechsler et al. (2017) reinforce earlier findings showing deposit rates adjusting slowly and asymmetrically to market interest rate fluctuations (Neumark and Sharpe, 1992).

[6]The pre-sample window ends in 2013, before the acquisition sample begins.

of the the sum of net interest income and noninterest income divided by noninterest expense, and the nonperforming loan ratio, *NPL Ratio*, defined as nonaccrual loans plus loans 90 days past due divided by total loans, which is a measure of loan quality.

Finally, we control for the competitive structure of the local markets where target banks operate. Specifically, we construct the Herfindahl-Hirschman Index using the branch-level data available from FDIC's Summary of Deposits. First, we aggregate deposits to the bank–county–year level and compute each bank's share of deposits within each county-year. For each county-year, we then calculate a county-level concentrations as the sum of squared bank deposit shares, with shares expressed in percentage terms so that the index ranges from 0 to 10,000. Then, we calculate the target j's concentration exposure HHI_j, by taking a deposit-weighted average of the county-level concentrations across all counties in which the bank operates. The weights are given by the share of the bank's total deposits held in each county. For consistency, the target bank's concentration measure, $HHI_{j,t-1}$, uses annual branch-level data from the pre-transaction year $t-1$.

To mitigate the influence of extreme observations, we winsorize certain variables at the 1st and 99th percentiles, including *NPL Ratio*, *Efficiency*, and *Rate Spread*.

In addition to the target-bank characteristics, we construct two transaction-level (matched-pair) measures. The first is the *Deal Value* which captures the economic value of each acquisition. The vast majority of transactions involve private banks, making it difficult to estimate value creation using changes in stock market value around acquisition. Thus, we approximate it using balance sheet information for the target and buyer institutions. Specifically, we define deal value as:

$$\begin{aligned} DealValue = BookEquity^{\text{Target}} + PreferredStock^{\text{Target}} \\ - Intangibles^{\text{Target}} + \Delta Intangibles^{\text{Post}} \end{aligned} \tag{1}$$

where $BookEquity^{\text{Target}}$, $PreferredStock^{\text{Target}}$, and $Intangibles^{\text{Target}}$ denote the amounts of book equity, preferred stock, and intangible assets reported by the target institution at quarter q-3. $\Delta Intangibles^{\text{Post}}$ captures the change in intangible assets reported by the acquiring institution following the acquisition from quarter q to quarter $q+1$. This formulation adjusts for differences in the accounting treatment of intangible assets across transactions, including fair value adjustments and the recognition of goodwill under purchase accounting, ensuring a consistent measure of the economic value trans-

ferred in each deal.[7]

The second pair-level variable measures the degree to which an acquirer's branch network (credit union or bank) overlaps geographically with that of a target bank prior to acquisition. We construct geographic overlap, GO, using branch-location data for acquirers and targets from the year prior to the transaction. We first compute acquirer a's geographic footprint in county c as the share s_{ac} of its branches located the county. Similarly, we compute target j's branch share s_{jc} in county c. Then for each acquirer-target pair, geographic overlap GO_{aj} between acquirer a and target j is:

$$GO_{aj} = \sum_{c} \min\{s_{ac}, s_{jc}\}.$$

Pairs with no common counties are assigned an overlap value of zero. The resulting measure ranges from 0 to 1, where 0 indicates no overlap in branch presence and 1 indicates identical county-level branch distributions.

2.3 Lending and Deposit Outcomes

To examine post-acquisition outcomes, we construct institution-level measures of lending activity and deposit composition. These measures capture changes in lending portfolios and funding structures following the acquisition.

Our lending measures distinguish between commercial and residential mortgage lending. Commercial lending includes commercial and industrial loans, multi-family residential, commercial construction and land development loans, and loans secured by nonfarm nonresidential real estate. Residential mortgage lending includes loans secured by one- to four-family residential properties, one- to four-family residential construction loans. Together, these measures capture changes in the composition of institutional lending following the acquisition.

Our deposit measures distinguish between insured and uninsured funding. Insured deposits are deposits covered by Federal Deposit Insurance Corporation (FDIC) or National Credit Union Administration (NCUA) insurance, subject to the statutory insurance limit of $250,000 per depositor, per insured institution, and per ownership category. Uninsured deposits represent the portion of deposits that exceeds these insurance limits. We also examine the uninsured deposit share, defined as uninsured

[7]Missing values of preferred stock and intangibles are set to zero and negative changes in intangibles are set to zero.

deposits divided by total deposits, to measure changes in the composition of institutional funding.

3 Determinants of Acquirers' Choice of Target Banks

3.1 Sample

The selection criteria outlined in Section 2.1 results in 2,450 acquisitions of target banks during the 2014 to 2025 period. Note that credit union acquirers tend to be relatively small and acquire relatively small, local community banks.[8] Thus, to consider bank-bank transactions that were comparable to observed credit union-bank transactions, we exclude transactions in which the target bank has more than $1.5 billion in total assets, the acquiring institution has more than $15 billion in total assets, or the distance between the headquarters of the acquiring and target institutions exceeds 1,500 miles. These restrictions exclude 316 unique acquisitions, including 241 transactions involving large bank targets, 169 transactions involving large bank acquirers, and 20 transactions involving geographically distant buyer–target pairs.[9] None of these restrictions excludes a transaction involving a credit union acquirer. Thus, our final sample contains a total of 2,126 completed bank acquisitions that took place between 2014 and 2025.

In this sample of acquisitions, banks constitute the majority of buyers, carrying out a total of 2,037 acquisitions while credit unions were buyers for the remaining 89 bank acquisitions, which is less than 5% of the total deals. Yet as the Figures 2 and Figure 3 reveal, the number of credit union acquisitions has recently moved upward while the number of bank acquisitions has fallen. Hence, it recent years credit union acquirers account for more than 10% of the number of deals and 20% of the total assets of acquired target banks.

Table 1 presents descriptive statistics of this sample. A direct comparison of target characteristics between the two types of buyers reveals both similarities and differences. Since targets acquired by banks were restricted to those with total assets below $1.5 billion, the average size of bank targets acquired by credit unions ($272.8 million assets)

[8] From 2014 to 2025, the largest community bank acquired by a credit union had total assets of $1.45 billion.

[9] Because some transactions satisfy more than one restriction, the individual exclusion counts do not sum to the total number of excluded acquisitions.

was almost identical to the average size of bank targets acquired by banks ($273.2 million assets). There were also no statistically significant differences in targets' average efficiency, market concentration, or frequency of Subchapter S-corporation status across credit union and bank acquirers.

However, Table 1 does show that credit unions targeted banks with significantly lower NPL ratios (0.8% versus 1.3%) and significantly higher commercial lending ratios (36.3% versus 32.0%) relative to bank acquirers. Credit union acquirers also tended to buy targets with lower deposit rate spreads (99 basis points) compared to the rate spreads of targets acquired by banks (115 basis points).

3.2 Empirical Methodology

We employ two complementary identification strategies that exploit cross-sectional variation in observed acquirer-target matches within acquisition years. Our first model is a discrete-choice, conditional logit model, in which each acquirer chooses annually among the set of targets available in that year. The second model is a variation of the revealed-preference matching framework of Akkus et al. (2016).

The two methods serve distinct but complementary purposes. The conditional logit provides a reduced-form characterization of target selection within a given year. The revealed-preference matching approach, by contrast, is a structural estimation model accounting explicitly for the endogenous matching process by which acquirers match with targets. It also allows for counterfactuals, which are difficult using reduced form methods. Next, we offer more details about the two methods.

3.2.1 Conditional Logit Model

Our first approach models merger outcomes as a discrete-choice problem on the acquirer side. Let a denote an acquirer and let $\mathcal{J}_a$ denote the set of candidate targets available to that acquirer.[10] For each acquirer a, the realized target is modeled as a choice among the alternatives $j \in \mathcal{J}_a$.

Let $Y_{aj} = 1$ if acquirer a is matched to target j, and $Y_{aj} = 0$ otherwise. If the latent value of target j to acquirer a is U_{aj}, then the corresponding conditional logit choice probability is

$$\Pr(Y_{aj} = 1 \mid \mathcal{J}_a) = \frac{\exp(U_{aj})}{\sum_{k \in \mathcal{J}_a} \exp(U_{ak})}. \tag{2}$$

[10] If a buyer completes more than one acquisition in a given year, it is modeled multiple times.

Let X_j denote a vector of target characteristics and GO_{aj} denote the vector of pair-specific geographic overlap measure. We assume that the latent value U_{aj} is a function of these characteristics, ie., $U_{aj} = f(X_j, GO_{aj})$. Initially we estimate the model on the subsample of credit union acquirers only. The latent value of target j to acquirer a is then:

$$U_{aj}^{CU} = f_a + X_j'\beta^{CU} + GO_{aj}'\theta^{CU} + \varepsilon_{aj}, \tag{3}$$

where f_a is an acquirer fixed effect and ε_{aj} is an idiosyncratic error term.

This first specification isolates target selection within the set of credit union acquisitions and identifies which target and pair characteristics are associated with the targets chosen by credit unions, conditional on the choice menu of feasible targets. Identification comes from comparing the targets available to the same credit union acquirer.

We then estimate a pooled specification that combines credit union and bank acquirers. Let CU_a be an indicator equal to one if acquirer a is a credit union and zero if it is a bank. For this case the latent value of target j to acquirer a is

$$U_{aj} = f_a + X_j'\beta + GO_{aj}'\theta + (\text{CU}_a \times X_j)'\gamma + (\text{CU}_a \times GO_{aj})'\kappa + \varepsilon_{aj}, \tag{4}$$

with the conditional logit choice probability defined as in equation (2). In the pooled specification, the coefficients β and θ describe how bank acquirers, the reference category, evaluate target and match characteristics while interaction terms, γ and κ, capture how those evaluations differ for credit unions relative to banks. This second specification therefore allows a direct comparative test of difference of targets between credit union and bank acquirers, conditional on the choice menu of feasible targets.

3.2.2 Revealed-Preference Matching Model

Our second approach follows the "with-transfer" (WT1) version of the revealed-preference matching framework of Akkus et al. (2016) and treats the observed set of mergers as the outcome of a matching market. Let $\mathcal{I}_t$ denote the set of acquirers active in year t, and let $\mathcal{J}_t$ denote the set of targets sold in year t. For any potential acquirer–target pair $(a, j) \in \mathcal{I}_t \times \mathcal{J}_t$, we specify a comparison function of the form

$$C_{aj} = X_j'\beta + GO_{aj}'\theta + (\text{CU}_a \times \tilde{X}_j)'\gamma + (\text{CU}_a \times GO_{aj})'\kappa, \tag{5}$$

where X_j and GO_{aj} are defined in the previous section, and $\tilde{X}_j$ denotes the subset of target characteristics whose valuation is allowed to differ by acquirer type. The function C_{aj} is the *gross* comparison value generated by match (a, j). Because we estimate the WT1 inequalities, the comparison function can include target-bank characteristics directly (Akkus et al., 2016).

Our decision to interact only a subset, instead of all, target characteristics relies on the assumption that the effects of some characteristics, such as the size and efficiency, do not differ between the two buyer types. This assumption - which is confirmed by the findings from the conditional logit model discussed above - helps us fit a more parsimonious specification. This is an important qualification for a structural model like the revealed-preference matching model, which is estimated numerically and is sensitive to the number of unknown parameters.

The revealed-preference inequalities are written in terms of the acquirer's *net* payoff, that is, the gross comparison value in equation (5) minus the transfer (deal value), denoted by p_{aj} for match (a, j). For any two observed matches (a, j) and (a', j'), pairwise revealed preference requires[11]

$$C_{aj} - p_{aj} \;\geq\; C_{aj'} - p_{a'j'} \qquad \text{and} \qquad C_{a'j'} - p_{a'j'} \;\geq\; C_{a'j} - p_{aj}. \tag{6}$$

These inequalities state that, given the transfer schedule, each acquirer weakly prefers its realized target to the counterfactual target formed by swapping partners.

Estimation proceeds by searching for the parameter vector that maximizes the number of pairwise revealed-preference inequalities satisfied in the data. In our implementation, the deal-value term p_{aj} for all observed matches (a, j) is estimated from equation (1) and enters the inequalities directly, so the estimator evaluates whether the observed pattern of acquirer - target assignments is more consistent with the estimated net comparison function than with feasible counterfactual reallocations.

We estimate the model numerically using a derivative-free global search algorithm because the WT1 objective is a non-smooth maximum-score criterion. For each candidate parameter vector $\vartheta = (\beta, \theta, \gamma, \kappa)$, we construct the comparison function for feasible acquirer–target pairings within each year and evaluate the implied revealed-preference inequalities. To keep the optimization computationally tractable, we evaluate the ob-

[11] Following Akkus et al. (2016), for acquirer a to acquire target j, the transfer p_{aj} must be weakly greater than the offer $p_{a'j}$ from a competing acquirer a'. Acquirer a's equilibrium offer can not be strictly greater than the alternative because higher offer prices reduce acquirer payoff. Hence, $p_{a'j} = p_{aj}$. Applying the same logic to target j', we obtain $p_{aj'} = p_{a'j'}$.

jective on a large random subset of inequalities in each year. The criterion function is the number of inequalities satisfied by the candidate parameter vector, so estimation amounts to searching for the parameter values that maximize this score. We implement this search using a population-based optimization algorithm that is well suited to non-convex and non-differentiable objective functions. To reduce the risk of converging to local optima, we repeat the full differential-evolution optimization from 20 different random initial populations and retain the best-performing solution.

Confidence intervals are obtained using the subsampling procedure of Politis and Romano (1994) and Delgado et al. (2001), as in Akkus et al. (2016). Specifically, after obtaining the full-sample estimate, we repeatedly draw 100 random subsamples of size 500. For each subsample, we re-estimate the model by maximizing the WT1 objective function. Let $\hat{\vartheta}_{\text{full}}$ denote the estimate from the full sample of size N, and let $\hat{\vartheta}_s$ denote the estimate from subsample s of size $n_s = 500$. We then construct the rescaled subsampling distribution

$$\tilde{\vartheta}_s = \left(\frac{n_s}{N}\right)^{1/3} \left(\hat{\vartheta}_s - \hat{\vartheta}_{\text{full}}\right) + \hat{\vartheta}_{\text{full}},$$

which accounts for the cube-root convergence rate of the maximum-score estimator. The 2.5^{th} and 97.5^{th} percentiles of this empirical distribution are reported as the 95% confidence bounds.[12]

3.3 Results

This section discusses the results from estimating the three different model specifications. First, the credit union-only estimates of model equation (3) in Table 2 column (1) indicate credit unions are more likely to acquire smaller banks, banks with lower cost-efficiency, banks in less concentrated markets, and banks with greater geographic overlap. The separate and full specifications in Table 2 columns (2)-(5) further reveal that credit unions favor targets with lower rate spreads and greater commercial lending exposure, while target bank Subchapter S status does not reliably predict selection by a credit union.

Next, we present the pooled bank and credit union acquirer sample results from the tests using the conditional logit model described in equation (4). This specification

[12]For computational efficiency, all repeated optimizations are run in parallel across multiple processor cores.

allows a direct test of whether credit unions acquirers select different types of targets compared to bank acquirers. The pooled estimates in Table 3 distinguish general acquisition preferences from those specific to credit unions. The main effects indicate that bank acquirers tend to select smaller targets, targets with lower cost-efficiency and in more competitive markets, and targets with more overlapping branch networks. Most credit union (CU) interactions involving these three characteristics are statistically insignificant, suggesting broadly similar preferences across acquirer types. However, two important differences between credit union and bank acquirers related to balance-sheet composition and deposit franchise value stand out. First, estimates in Table 3 columns (2) and (5) reveal that credit unions display a preference for targets with lower rate spreads. Moreover, estimates in Table 3 columns (3) and (5) show that credit unions display a stronger preference for targets with greater commercial lending exposure.

Turning to the revealed-preference matching model, Table 4 reports the estimates of equation (5). This specification provides a complementary test that incorporates the pooled sample of acquirer–target matching. This structural model confirms that, relative to bank acquirers, credit unions prefer targets with lower rate spreads and greater commercial lending exposure. In the full specification in Table 4 column (6), credit unions also exhibit a stronger preference for geographic overlap. Subchapter S status remains unrelated to differential selection. One difference from the conditional logit estimates is the positive association between target-market concentration and bank-acquirer matching.

Taken together, the results indicate that credit unions acquire banks that have relatively greater concentrations in commercial lending and are located in geographically familiar markets. This is consistent with credit union being motivated to obtain expertise in business lending, an area where they had been traditionally limited by regulation.

In contrast, relative to credit unions, bank acquirers have a greater preference for targets with larger rate spreads, i.e., greater deposit franchise value. This finding confirms the prediction that credit unions value a target's deposit franchise less because its depositors will become credit union owners and are likely be paid post-merger returns in the form of higher deposit interest rates.

4 Post-merger Outcomes

4.1 Sample Construction

Matching is performed on acquisition year, target size, geographic region, target commercial lending exposure, and target deposit spread. These variables capture key dimensions along which acquisition targets differ and may influence both the likelihood of acquisition by a credit union and subsequent post-merger outcomes. Additional restrictions are imposed to ensure a consistent estimation sample. First, acquisitions announced in 2024 and 2025 are excluded because insufficient post-merger observations are available to evaluate longer-run outcomes. Second, transactions in which the acquiring institution is subsequently acquired within two years are excluded to avoid contamination. The resulting matched sample consists of 65 credit union acquisitions and 153 bank acquisitions distributed across 56 matching strata. Each stratum is defined by a unique combination of coarsened acquisition-year, regional, target-size, commercial lending, and deposit spread categories, ensuring that transactions compared within a stratum are observationally similar along these dimensions. All subsequent post-merger regressions use the CEM weights implied by the matched strata so that bank-acquisition observations are weighted to reproduce the distribution of credit-union acquisitions across the matched cells.

Appendix Tables A1–A4 summarize the construction of the matched sample and the variables used in the empirical analyses. Appendix Table A1 reports descriptive statistics for the 218 matched acquisition targets. Appendix Table A2 demonstrates that, following coarsened exact matching, there are no statistically significant differences between credit union and bank acquisition targets across the matching variables, indicating that the matching procedure successfully balances the observable characteristics used to construct the comparison sample. Appendix Table A3 summarizes the composition of the matched sample, which consists of 56 matching strata containing an average of 3.89 transactions per stratum. Appendix Table A4 reports summary statistics for the panel regression outcome variables used in the empirical analysis, including commercial lending, residential mortgage lending, deposit growth, insured deposit growth, and deposit spreads.

Based on the matched sample of transactions, we construct a longitudinal panel of acquiring and target institutions using quarterly financial data. Because acquired banks cease to report as standalone entities after transaction completion, we follow

the economically combined organization through time. Let Y_{it} denote an outcome for transaction i in event quarter t, where $t = 0$ is the acquisition quarter. For each pre-acquisition quarter, we construct a pro forma combined institution by aggregating the corresponding financial accounts of the acquirer and target. From the acquisition quarter onward, outcomes are measured using the financial statements of the surviving acquiring institution.

For stock variables, including total deposits, insured deposits, total assets, and loan balances, the pro forma outcome is defined as

$$Y_{it}^{PF} = \begin{cases} Y_{it}^{A} + Y_{it}^{T}, & t < 0, \\ Y_{it}^{S}, & t \geq 0, \end{cases}$$

where (A) denotes the acquirer, (T) the target, and (S) the surviving institution. The resulting panel therefore represents a consistent economic entity: before completion, observations correspond to the hypothetical combined institution formed by the acquirer and target, whereas after completion they correspond to the realized merged institution. This construction allows post-acquisition outcomes to be evaluated relative to the historical performance of the combined organization.

To measure post-acquisition changes in level variables, we normalize each outcome by its average value during the four quarters preceding acquisition:

$$\bar{Y}_{i}^{pre} = \frac{1}{4} \sum_{k=-4}^{-1} Y_{ik}^{PF}.$$

The normalized outcome is then

$$\Delta Y_{it} = \frac{Y_{it}^{PF}}{\bar{Y}_{i}^{pre}} - 1.$$

This transformation expresses changes in deposits, insured deposits, assets, and loan balances relative to the average pre-acquisition size of the combined organization.

A quarterly deposit $RateSpread_{i,t}$ variable is constructed similar to the variable *RateSpread* described in Section 2.2. It is the difference between deposit maturity-weighted Treasury yields and a bank's implicit deposit interest rate. However, rather than being calculated as the average during the 2003-2013 pre-sample period as was done for in Section 2.2, $RateSpread_{i,t}$ is calculated for institution i for each quarter

t and then a pro-forma combined institution's value for this variable, $RateSpread_{i,t}^{PF}$ is constructed using deposit-weighted averages of the acquirer and target institutions' pre-acquisition spreads. Specifically, for pre-acquisition quarters, the combined rate spread is defined as

$$RateSpread_{it}^{PF} = w_{it}^{A} RateSpread_{it}^{A} + w_{it}^{T} RateSpread_{it}^{T},$$

where

$$w_{it}^{A} = \frac{Deposits_{it}^{A}}{Deposits_{it}^{A} + Deposits_{it}^{T}}, \qquad w_{it}^{T} = \frac{Deposits_{it}^{T}}{Deposits_{it}^{A} + Deposits_{it}^{T}}.$$

Following acquisition, $RateSpread_{i,t}^{PF}$ is measured using just the surviving institution's reported financial statements. Finally, the dependent variable, ΔY_{it}, used in our regression tests, denoted $Spread_{i,t}$, is the change in the post-acquisition $RateSpread$ in quarter t relative to the average pro-forma $RateSpread$ during the four quarters preceding acquisition.

This procedure ensures that pre-acquisition outcomes reflect the scale and composition of the organization that ultimately emerges following the transaction. The construction is analogous to the pro forma adjustments commonly employed in merger studies and allows post-acquisition changes to be interpreted as changes relative to the combined organization that existed immediately before the transaction Berger et al. (1999); Pilloff (1996).

4.1.1 Mortgage Lending Outcome Sample

To incorporate the geographic dimension of post-merger outcomes, we construct institution-level measures of mortgage lending at the county level using Home Mortgage Disclosure Act (HMDA) data. Lending activity is assigned to counties based on the location of the borrower where available. This structure allows us to track how acquiring institutions reallocate mortgage lending across the target bank's legacy markets following the transaction.

The unit of observation is the target-bank-county-year rather than the pro-forma institution used in the institution-level analysis. Accordingly, the analysis follows the target institution's pre-acquisition footprint and measures how mortgage lending evolves within those counties after the acquisition. For each target, we identify counties in which the target reported mortgage originations prior to the transaction. Of the 188

matched acquisitions, 86 (45.7%) are excluded because the target institution does not report HMDA data prior to the acquisition, leaving 102 acquisitions eligible for the mortgage-lending analysis.

We also exclude acquisitions in which the buyer is itself acquired within two years following the transaction. This restriction removes 8 of the 188 matched acquisitions and avoids attributing subsequent changes in lending to the original acquisition when the surviving institution is affected by an additional merger.

Within the remaining acquisitions, the county-level analysis distinguishes between counties in which the acquirer did and did not report pre-acquisition mortgage activity. Our primary specifications focus on target counties in which the acquirer had no prior mortgage activity, so that post-acquisition lending can be interpreted as activity within markets entered through the acquisition. This restriction is applied at the county-observation level and does not eliminate an acquisition solely because the buyer was active in other target counties.

The analysis also incorporates county-level characteristics that may influence local mortgage lending. These controls include county population obtained from the Surveillance, Epidemiology, and End Results (SEER) Program, county GDP per capita from the Bureau of Economic Analysis, and the total number of bank and credit-union branches operating within the county.

4.2 Empirical Methodology

We examine the effects of bank acquisitions using a difference-in-differences framework focused on institution-level responses. The differences in target selection documented in the previous section, particularly with respect to commercial lending exposure and deposit characteristics motivate this analysis. These differences suggest that credit union and bank acquirers may have distinct incentives in how they deploy both assets and funding following an acquisition. We, therefore, examine whether these differences are reflected in post-merger lending allocation, as well as in changes in deposits and deposit spreads.

4.2.1 Institution-Level Analysis

The empirical strategy exploits the timing of acquisitions in a matched panel of pro-forma (combined) institutions. Identification comes from changes in outcomes around

the acquisition date for credit-union acquisitions relative to contemporaneous changes for otherwise comparable bank acquisitions.

Let i index the pro-forma (combined) institutions and t index time measured in quarters. The basic estimating equation is then:

$$Y_{it} = \alpha_i + \lambda_t + \beta\, CU_i \times Post_{it} + \eta\, Post_{it} + \varepsilon_{it} \tag{7}$$

where Y_{it} is the outcome of interest, α_i denotes the pro-forma entity fixed effects, and λ_t denotes time fixed effects. The variable $Post_{it}$ equals one after the acquisition event, and CU_i is an indicator for credit union acquirers. The coefficient of interest, β, measures the differential post-acquisition change in Y_{it} for credit-union acquisitions relative to the comparison group. The error term, ε_{it}, captures idiosyncratic variation in the outcome not explained by the included covariates, fixed effects, or treatment indicators.

Along with the simple difference in difference model, we also perform dynamic tests that examine the timing of the estimated effects and to assess the plausibility of the identifying assumption. Let k denote event time relative to the acquisition, with $k = -1$ corresponding to the omitted reference period immediately before the event. The dynamic specification is then defined as

$$\begin{aligned} Y_{it} = \alpha_i + \lambda_t + & \sum_{k=-4, k\neq -1}^{4} \eta_k \mathbf{1}\{EventTime_{it} = k\} \\ & + \sum_{k=-4, k\neq -1}^{4} \beta_k \left(CU_i \times \mathbf{1}\{EventTime_{it} = k\}\right) + \varepsilon_{it} \end{aligned} \tag{8}$$

The coefficients β_k trace the differential evolution of outcomes for credit-union targets relative to the comparison group in each event-time period, normalized to zero in the period immediately preceding acquisition. Coefficients for $k < 0$ are used to evaluate whether CU-acquired targets and bank-acquired targets exhibit differential pre-acquisition trends while coefficients for $k \geq 0$ describe the timing and persistence of post-acquisition adjustments. All specifications are estimated using the CEM weights from the matched sample, and standard errors are clustered at the target-bank level.

4.2.2 Local Effects in Mortgage Lending

In a separate section, we examine local mortgage-lending responses using the panel organized at the institution-county-year level. The dependent variable, Y_{ict}, is the log-scaled measure of total mortgage originations standardized by county population (measured in 10,000), associated with institution i in county c during year t. The pooled specification is

$$Y_{ict} = \alpha_i + \lambda_t + \kappa_c + \theta_1 Post_{it} + \theta_2 \left(CU_i \times Post_{it}\right) + X'_{ct}\Gamma + u_{ict} \tag{9}$$

The vector X_{ct} includes time-varying county characteristics such as the population, county GDP per capita, and the total branch count, all transformed using the log. By introducing, λ_t, α_i, κ_c year, entity and county fixed effects, the model absorbs aggregate shocks, variation across local markets (counties) as well as variation across lenders. The coefficient θ_2 should therefore be interpreted as the average post-acquisition change in mortgage lending in the target county associated with credit union acquisitions, relative to the corresponding change in the target county associated with bank acquisitions.

We also estimate a dynamic event-study specification:

$$\begin{aligned} Y_{ict} = \alpha_i + \lambda_t + \kappa_c + \sum_{k=-2, k\neq -1}^{2} \eta_k \mathbf{1}\{EventTime_{it} = k\} + \\ \sum_{k=-2, k\neq -1}^{2} \theta_k \left(CU_i \times \mathbf{1}\{EventTime_{it} = k\}\right) + X'_{ct}\Gamma + u_{ict}, \end{aligned} \tag{10}$$

where $EventTime_{it}$ denotes the year relative to the acquisition, and $EventTime_{it} = -1$ is the omitted reference year. As in the pooled specification, the dynamic specification includes the same institution, county, and year fixed effects, together with the county-level controls X_{ct}. The coefficients θ_k describe the relative evolution of mortgage lending in the target's county of credit union aquisitions around the acquisition date. The pre-acquisition coefficient, particularly for $k = -2$, provides a diagnostic for differential pre-trends between the two types of acquirers, while the post-acquisition coefficients trace the timing and persistence of the lending response. Standard errors are clustered at the institution level in both specifications.

4.3 Results

4.3.1 Post-Acquisition Lending Outcomes

Table 5 examines whether credit union acquisitions are followed by changes in the lending composition of the combined institution that are different to changes of bank acquisitions. Table 5 columns (1) and (2) report results for commercial lending exposure providing no evidence that credit union acquisitions generate a statistically significant differential change in commercial lending. Figure 5 illustrates this pattern graphically: the post-acquisition path for credit union acquisitions lies below that of matched bank acquisitions, but the confidence intervals are wide and the differences are not statistically distinguishable from zero. Overall, we conclude that commercial lending exposure does not respond differentially in a statistically detectable way following credit union acquisitions relative to bank acquisitions.

Table 5 columns (3) and (4) report results for residential mortgage lending exposure. The pooled specification in column (3) shows that while residential mortgage exposure declines by approximately 2.2 percentage points of its pre-acquisition average level after bank acquisitions, residential mortgage exposure increases by 11.5 percentage points of the pre-acquisition residential mortgage base more after credit union acquisitions than after matched bank acquisitions. The implied net post-acquisition change for credit union acquisitions is therefore approximately 9.3 percentage points of the pre-acquisition residential mortgage base. The dynamic specification estimates also range from 9.9 percentage points in the acquisition quarter to 12.5 percentage points four quarters after acquisition. Figure 6 shows the same pattern visually: credit union acquisitions exhibit a sharp increase in residential mortgage exposure beginning in the acquisition quarter, while the path for matched bank acquisitions remains close to zero after the transaction. These estimates imply that, relative to matched bank acquisitions, credit union acquisitions are followed by a sustained increase in residential mortgage exposure.

These residential mortgage estimates, however, should be interpreted with caution. The pre-acquisition interaction coefficients are negative and statistically significant.[13] Credit union and bank transactions were already displaying different residential mortgage trajectories before the merger, which may reveal a preference differential between credit union and bank acquirers on their targets' residential mortgage exposures. Thus,

[13]This pre-acquisition divergence is also visible in Figure 6.

part of the subsequent divergence may therefore reflect a reversal or continuation of those underlying dynamics.

Table 6 repeats the tests on residential mortgages using county-level mortgage origination activity from HMDA data. The interaction effect on Table 6 column (1) is positive but statistically insignificant implying that the is no evidence of an average post-acquisition increase in mortgage originations following credit union acquisitions relative to matched bank acquisitions.

Table 6 column (2) reports the dynamic specification indicating that mortgage originations decline after acquisition in both groups, but the decline is significantly smaller following credit union acquisitions. In the first year after acquisition, mortgage originations fall by approximately 45 percent $= (e^{-0.603} - 1)$ in bank acquisition targets' counties, compared with approximately 21 percent $= (e^{-0.603+0.362} - 1)$ in credit union acquisition targets' counties. Similarly, in the second year after acquisition, the corresponding declines are approximately 60 percent and 42 percent for bank versus credit union acquisitions, respectively. Figure 7 provides the graphical analogue of these estimates. It shows that mortgage originations decline after acquisition for both groups, but the credit union path remains above the matched-bank path in the post-acquisition years. Thus, credit union acquisitions are associated with relatively stronger mortgage origination activity after acquisition, although the estimates do not imply an absolute increase in originations.

4.3.2 Post-Acquisition Deposit Outcomes

We now consider how deposit quantities and spreads respond following acquisitions. Table 7 reports the results for combined (acquirer and target) quantities in the form of pre-acquisition normalized changes in total deposits and insured deposits. Columns (1) and (4) report the pooled difference-in-differences estimates. There are modest increases in both total and insured deposits following bank acquisitions. Specifically, both total and insured deposits increase approximately 1.2 percentage points relative to their pre-acquisition deposit bases. In contrast, the coefficients on the credit union interactions are negative and statistically significant. The column (1) estimate implies that total deposits decline by 2.9 percentage points more after credit union acquisitions than after matched bank acquisitions. The implied post-acquisition net decline for credit union acquisitions is approximately 1.7 percentage points for the total deposit base and 2.4 percentage points for the insured deposit base.

Table 7 columns (2) and (5) repeat the tests in columns (1) and (4) but add an additional control variable for post-acquisition branch closures. *Closure Rate* is the proportion of the target bank's branches that are closed within one year following acquisition. The coefficients on $Post \times Closure\ Rate$ and $CU \times Post \times Closure\ Rate$ are insignificant and the estimated relative declines in total and insured deposits following a credit union acquisition remain significantly negative and similar in magnitude to those in columnns (1) and (4). This suggests that the relative deposit decline following credit union acquisitions is not fully explained by observed branch closures.

The dynamic specifications in columns (3) and (6) show that the decline develops gradually after a credit union acquisition. The pre-acquisition interaction coefficients are small and statistically insignificant for both total and insured deposits, meaning that before the acquisition, deposits at credit union and matched bank acquisition targets do not appear to be moving on statistically different paths. After acquisition, the interaction coefficients become increasingly negative. Thus, from column (3) we conclude that by quarter four after acquisition, total deposits are about 4.6 percentage points lower, relative to the pre-acquisition deposit base, for credit union acquisitions compared to bank acquisitions. The pattern is even stronger for insured deposits in column (6) implying that insured deposits fall by about 5.5 percentage points more after credit union acquisitions compared to bank acquisitions. Figure 8 illustrates this gradual divergence: total deposits remain close to their pre-acquisition benchmark for bank acquisitions, while they decline steadily after credit union acquisitions.

One explanation for the relative decline in deposits after a credit union acquires a bank is that some former target bank depositors may not qualify to join the credit union under its field of membership requirement. While credit union field of membership regulations have been relaxed in recent years, it is likely that some bank depositors will be ineligible and will need to bank elsewhere.[14] Another reason may be that the target bank's customers may qualify but not wish to join the credit union, possibly because

[14] Independent Community Bankers of America (2020) page 8 states "...when a bank is purchased by a credit union, there will probably be some depositors who do not qualify for membership at the credit union. These customers will have to bank somewhere else." In addition, Winn et al. (2019) page 12 states: "A credit union should not assume that they will be able to automatically acquire and retain all accounts and customers of a bank as part of an acquisition. Credit unions are governed by field of membership requirements and, unlike when a credit union merges with another credit union, in a bank acquisition a credit union's field of membership does not automatically expand to include the customers of the bank...If the identified loans or customers are not properly within the credit union's existing or amended field of membership, the NCUA will require the credit union to divest of those customers within a reasonable period of time."

they are unsatisfied with its product and service offerings. Despite likely receiving higher interest rates on deposits, they may switch to another depository institution.

We now turn to the evidence for how deposit interest rates change following credit union acquisitions relative to bank acquisitions. Table 8 reports the results of tests analyzing deposit spreads of the combined acquirer-target institution. Note that if the target inherits the deposit-pricing policy of the acquirer, the ability to detect a combined institution post-acquisition change in spreads is likely to depend on the size of the target relative to the acquirer. Thus, we report results in Table 8 for different transaction subsamples that exclude varying proportions of acquisitions by the ratio of target size to acquirer size. Tests in columns (1) and (2), columns (3) and (4), and columns (5) and (6) use subsamples of acquisitions retaining only the largest 75%, largest 50%, and largest 25% of acquisitions ranked by target to acquirer size, respectively. Thus, the subsamples display an increasing average target to acquirer size.

As shown in Table 8 columns (1), (3), and (5), the coefficients on *Post* range from approximately 56 to 63 basis points and are statistically significant in all three subsamples. This indicates that, following bank acquisitions, surviving institutions increase their deposit spreads relative to the pre-acquisition benchmark. Economically, this pattern is consistent with bank acquirers extracting greater deposit franchise value after acquisition by paying deposit rates that are lower relative to market rates.

However, the coefficients on the credit union interaction term $CU \times POST$ are negative for all subsamples and highly significant for the subsample restricted to the top 25% of acquisitions by target to acquirer size shown in column (6). For this case, the $CU \times POST$ coefficient of -124 basis points offsets the positive 56 basis point coefficient on $POST$, resulting in a net spread decline of approximately 68 basis points for credit union acquisitions. Thus, in acquisitions where a change is spreads is most likely to be detectable, the evidence confirms that bank depositors that join credit unions are likely to earn higher deposit interest rates.[15]

The dynamic estimates in Table 8 columns (2), (4), and (6) corroborate this interpretation. For bank acquisitions, the main event-time coefficients rise steadily after acquisition. Deposit spreads increase by roughly 16-17 basis points in the acquisition

[15]This finding is notable given Section 3.3's result that, relative to bank acquirers, credit union acquirers choose target banks with lower pre-acquisition spreads, i.e., higher pre-acquisition deposit rates. That finding should make it more difficult to detect a further lowering of spreads (further rise in deposit rates) following credit union acquisitions and a further raising of spreads (further decline in deposit rates) following bank acquisitions.

period and continue rising through the post-acquisition window, reaching approximately 52-65 basis points four quarters after the acquisition. At the same time, the interaction coefficients for credit union acquisitions are negative after acquisition and increase in size over time. If we focus on the largest 50% of target to acquirer ratios in column (4), the coefficient equals a marginally significant -71 basis points at $t+3$ and a fully significant -96 basis points at $t+4$. The strongest pattern appears in column (6), the largest 25% of target to acquirer ratios. The credit union interaction estimate grows from -73 basis points at $t+1$ to -147 basis points at $t+4$. Figure 9 illustrates this divergence for the top-quartile spread sample. Deposit spreads widen after matched bank acquisitions, while they decline after credit union acquisitions, producing a growing gap over the post-acquisition window.[16]

These estimates suggest that the post-acquisition evolution of deposit pricing differs substantially between bank and credit union acquirers, a difference that becomes apparent when target to acquirer size is sufficiently large. Bank acquisitions are followed by wider deposit spreads, consistent with acquiring banks exercising more deposit market power. Credit union acquisitions, by contrast, show either no spread increases or relative spread declines. The evidence is therefore consistent with depositor-owned credit unions paying out at least some of their earnings in the form of higher deposit interest rates, rather than extracting rents. Also unlike most banks, credit unions are corporate tax-exempt, which may provide them relatively greater distributable after-tax earnings.

5 Conclusion

This study examines how acquisitions of small community banks differ when their acquirers are credit unions versus when their acquirers are banks. These acquirers are similar in their dependence on deposit-like liabilities to fund their lending activities. However, they are distinctly different in terms of their ownership structure, tax status, and regulatory standards. The paper's results reveal systematic differences in the characteristics of community banks that credit unions and banks choose to acquire.

Relative to bank acquirers, credit union acquirers display a stronger preference for community banks with greater commercial lending exposure, which may be due

[16] A reason for the gradual decline or increase in spreads may, in part, be due to the target bank's existing fixed-maturity deposits. The acquirer's rate-setting policy may be implemented only after these target bank deposits gradually mature.

to recent changes in regulation that relaxed limits on credit union business lending. Relative to credit union acquirers, bank acquirers prefer community banks that pay lower interest rates on deposits, i.e., have greater deposit franchise value. This result is likely due to acquirers' distinctly different ownership structure. Deposit franchise value can be retained, and possibly strengthened by greater local market power, when the acquirer is a shareholder-owned bank. In contrast, deposit franchise value is largely lost when target bank deposits are converted to credit union share accounts and their holders become member-owners of the acquiring credit union.

The paper also investigates whether these differences in target bank selection are followed by distinct post-acquisition changes in the combined institution. It finds no statistically detectable differential increase in commercial lending exposure following credit union acquisitions relative to matched bank acquisitions. However, there is some evidence that credit union acquisitions are followed by a more positive evolution of residential mortgage lending compared to that of bank acquisitions.

The clearest post-acquisition differences arise on the liability side of the balance sheet. Deposits, particularly insured deposits, decline relative to their pre-acquisition base following credit union acquisitions, whereas deposits remain stable or increase modestly following matched bank acquisitions. In addition, the paper finds that bank acquirers widen deposit spreads after acquisition, consistent with greater extraction of deposit franchise value. The opposite occurs for credit union acquirers. Particularly when the target bank is relatively large, there is a significant decline in deposit spreads following credit union acquisitions.

The seemingly conflicting results that credit union acquisitions are followed by a relative loss in deposits despite paying relatively higher deposit interest rates can be reconciled because some target bank depositors may be ineligible to join the credit union due to its field of membership restrictions. The resulting deposit loss could also explain why business lending may not expand as much as a credit union acquirer may hope by purchasing a commercial lending - focused community bank. Relative to residential mortgages, small business loans are difficult to securitize, making them dependent on the credit union's ability to retain deposits needed to fund them.

Overall, the evidence shows that charter type matters both for which community banks are acquired and for how they are subsequently operated. The results highlight an important distinction between acquiring access to a particular balance-sheet composition and subsequently expanding that activity. More broadly, the findings sug-

gest that cross-charter acquisitions may produce different lending and deposit-pricing outcomes from traditional bank mergers, with implications for the evaluation of these transactions by regulators and local stakeholders.

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Figure 1: Number of US Commercial Banks and Savings Institutions

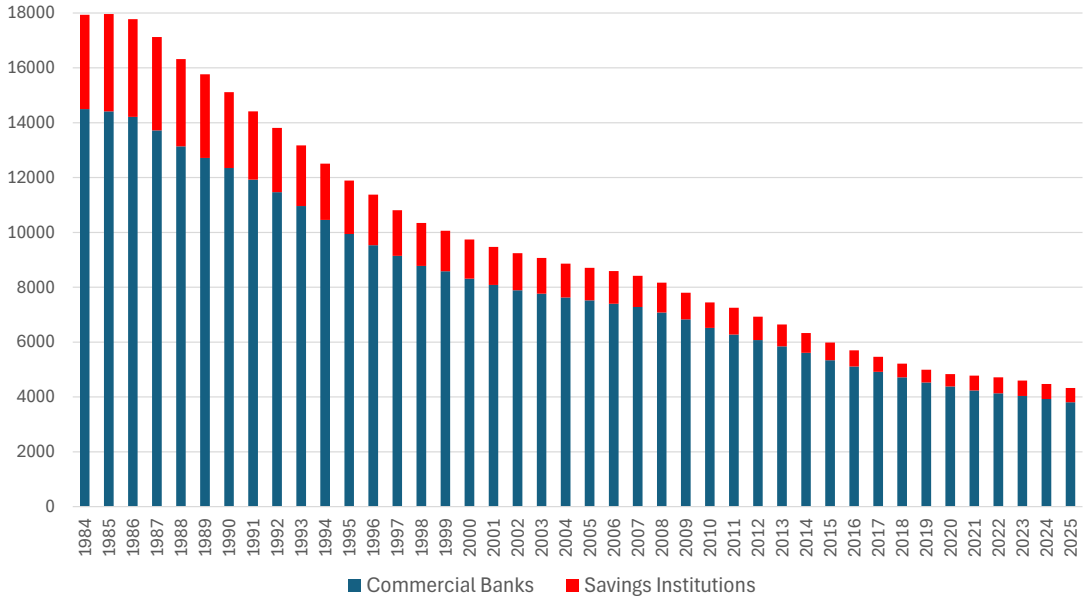

Figure 2: Number of Bank and Credit Union Acquisitions of Banks

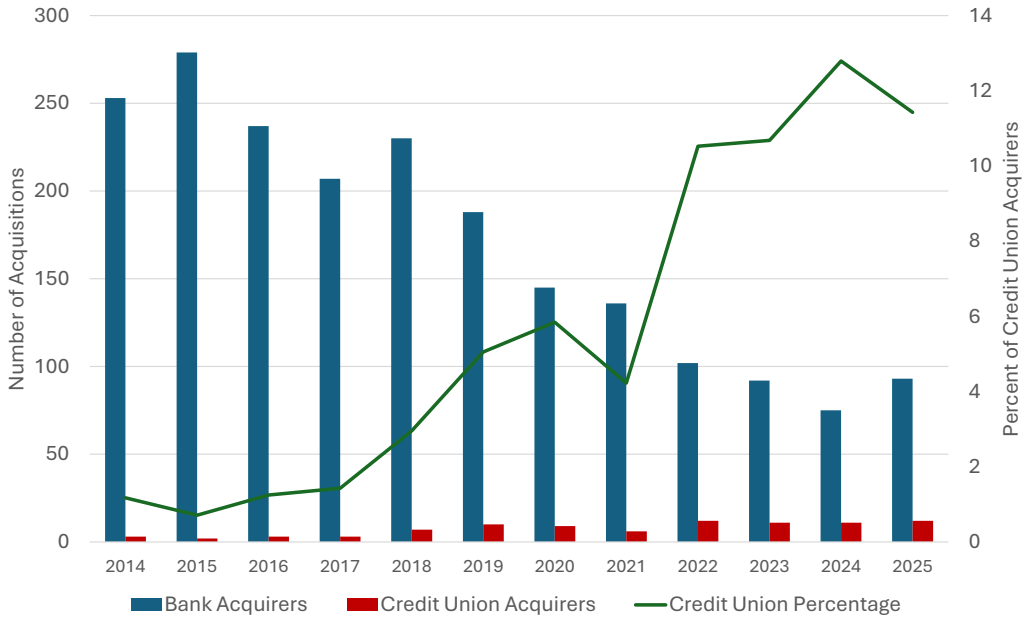

Figure 3: Bank Target Assets Acquired and Credit Union Share

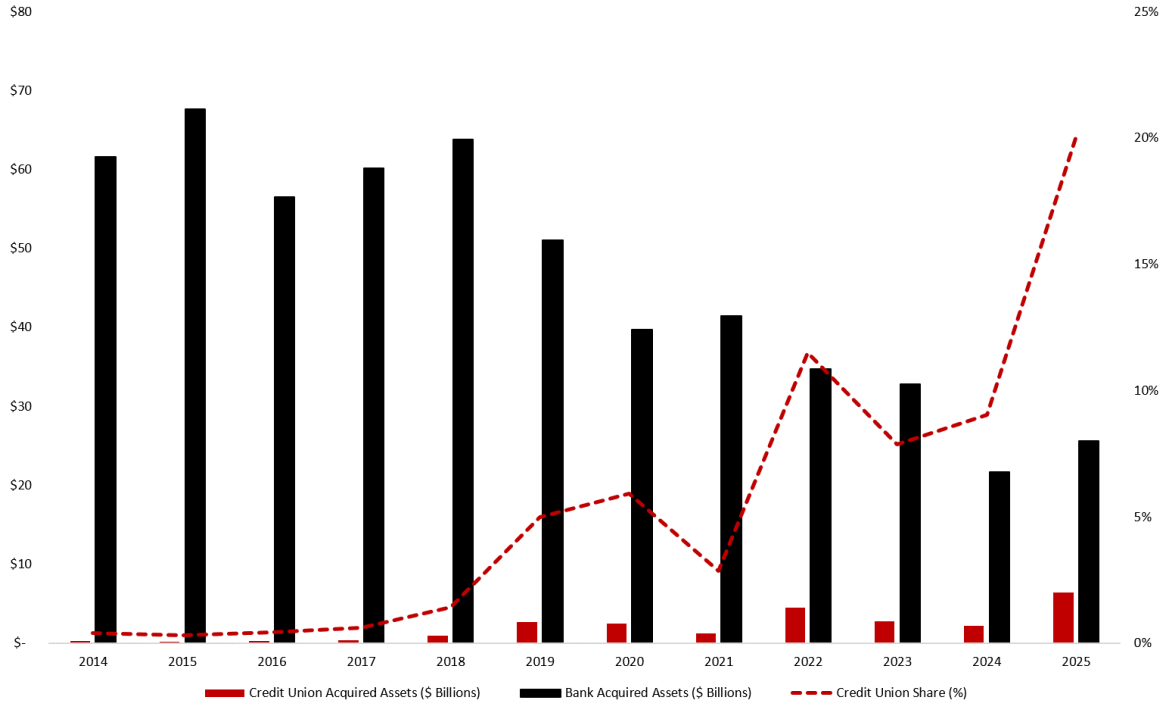

Figure 4: Credit Union Acquisitions and Target Commercial Lending

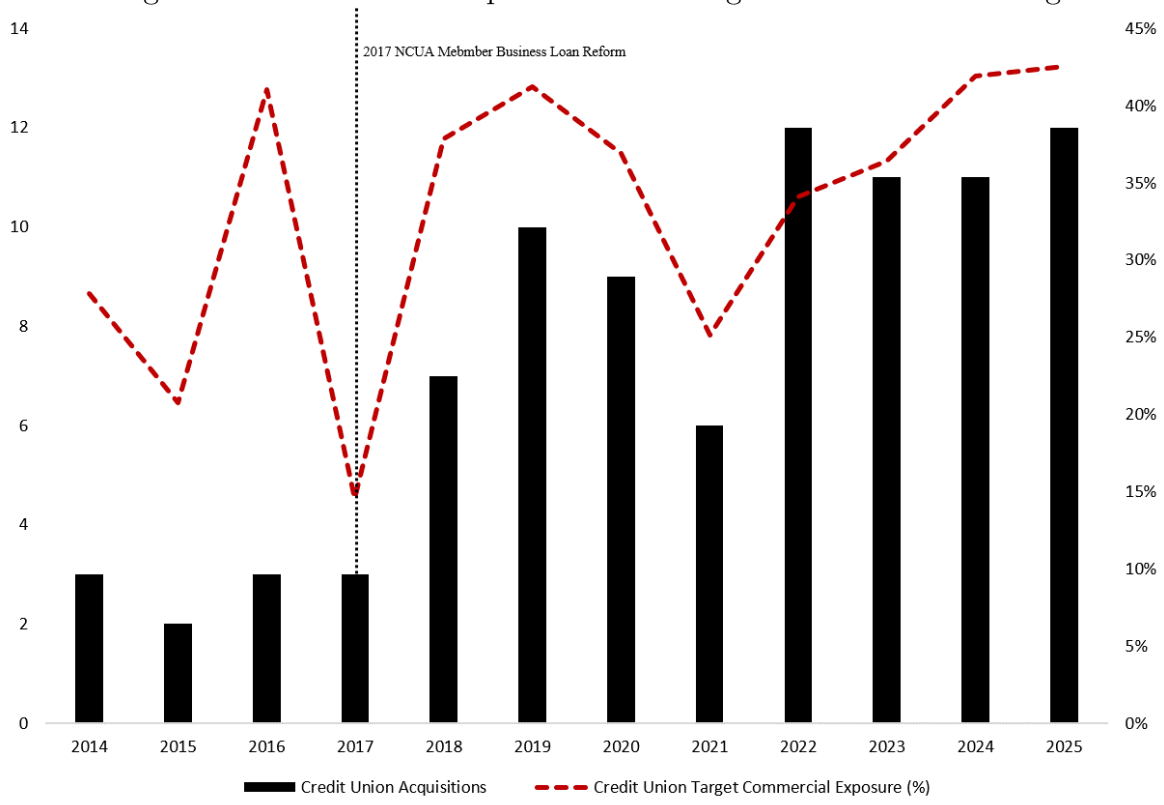

Figure 5: Change in Commercial Lending Exposure: Credit Union vs. Bank

This figure presents dynamic difference-in-differences estimates of changes in commercial lending following acquisition. The dependent variable is the change in combined commercial loans normalized by the average level during the four quarters preceding acquisition ($t = -4$ through $t = -1$). Estimates are relative to the omitted quarter $t = -1$. Points report coefficient estimates and vertical bars denote 95% confidence intervals. All specifications include pro-forma entity and year-quarter fixed effects, are weighted using coarsened exact matching (CEM) weights, and cluster standard errors at the target institution level.

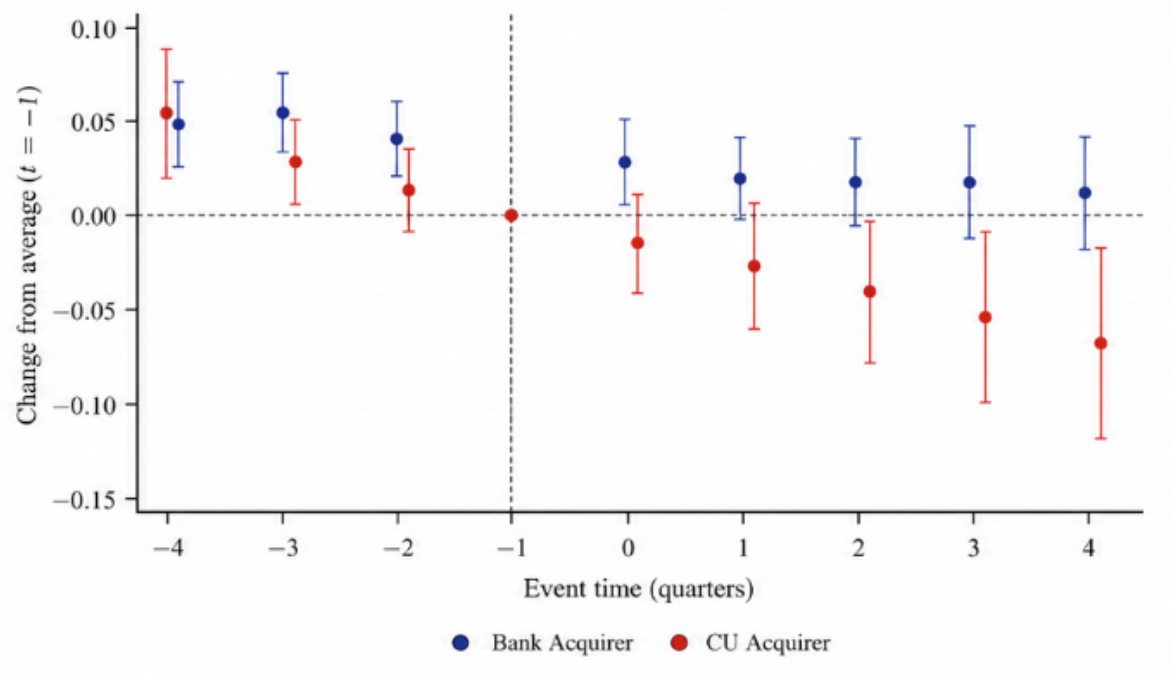

Figure 6: Change in Residential Lending Exposure: Credit Union vs. Bank

This figure presents dynamic difference-in-differences estimates of changes in residential mortgage and construction lending following acquisition. The dependent variable is the change in combined residential mortgage and construction loans normalized by the average level during the four quarters preceding acquisition ($t = -4$ through $t = -1$). Estimates are relative to the omitted quarter $t = -1$. Points report coefficient estimates and vertical bars denote 95% confidence intervals. All specifications include pro-forma entity and year-quarter fixed effects, are weighted using coarsened exact matching (CEM) weights, and cluster standard errors at the target institution level.

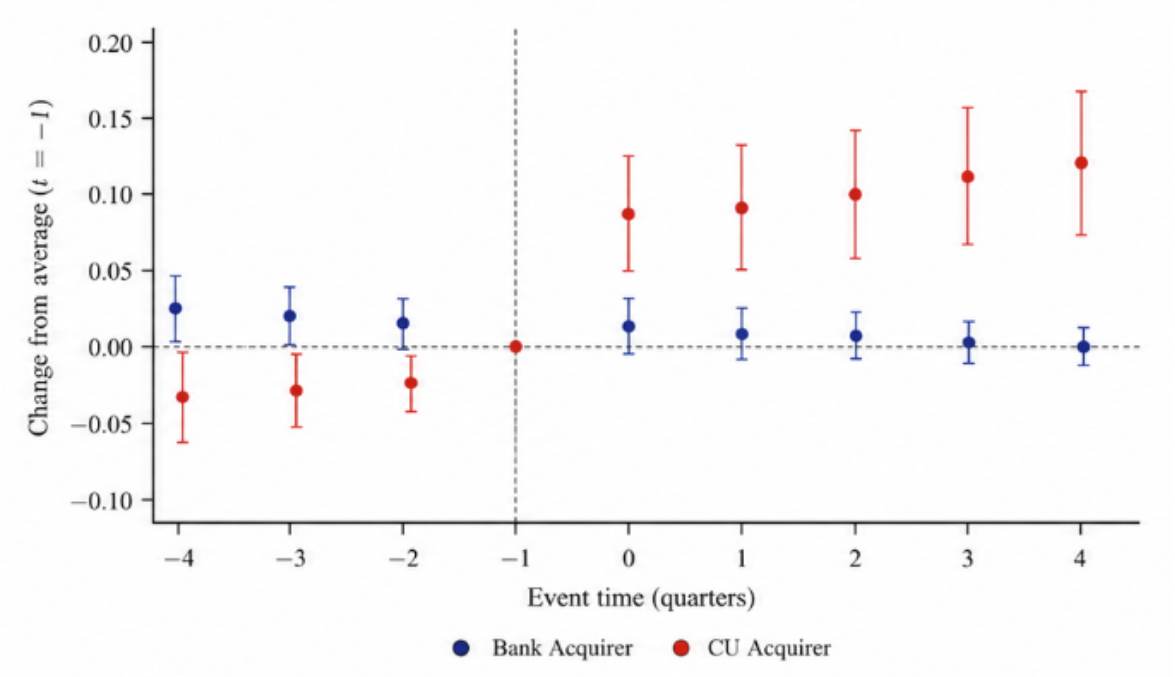

Figure 7: Change in Home Mortgage Disclosure Act (HMDA) Originations: Credit Union vs. Bank Acquisitions

This figure reports estimates from the dynamic difference-in-differences specification for mortgage originations reported under the Home Mortgage Disclosure Act (HMDA). The dependent variable is the log of mortgage originations per 10,000 residents. Estimates are reported relative to the omitted year immediately preceding acquisition ($t = -1$). Blue points report the event-time coefficients for bank acquisitions, while red points report the incremental credit union effects. Vertical bars represent 95% confidence intervals. The specification includes county, year, and lender fixed effects, incorporates CEM weights, and clusters standard errors at the target-bank level.

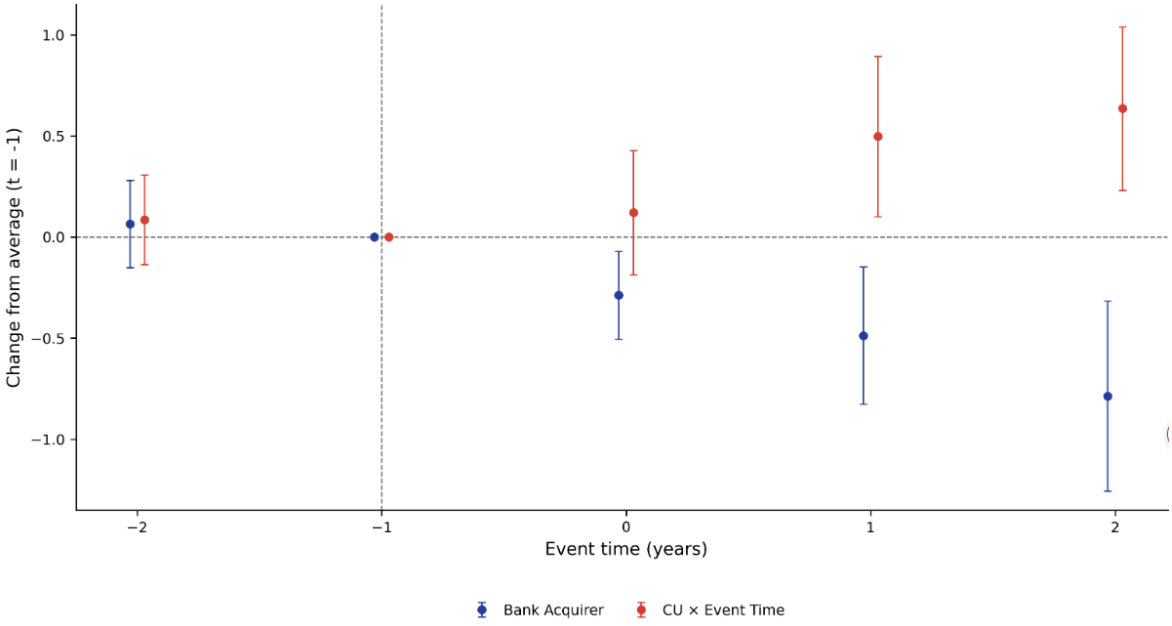

Figure 8: Change in Total Deposits Following Acquisition: Credit Union vs. Bank

This figure reports estimates from the dynamic difference-in-differences specification for total deposits. The dependent variable is combined deposits normalized by the average level of combined deposits during the four quarters preceding acquisition. Estimates are reported relative to the omitted quarter immediately preceding acquisition ($t = -1$). Blue points report the event-time coefficients for bank acquisitions, while red points report the incremental credit union effects. Vertical bars represent 95% confidence intervals. All specifications include pro-forma entity and year-quarter fixed effects, incorporate CEM weights, and cluster standard errors at the target-bank level.

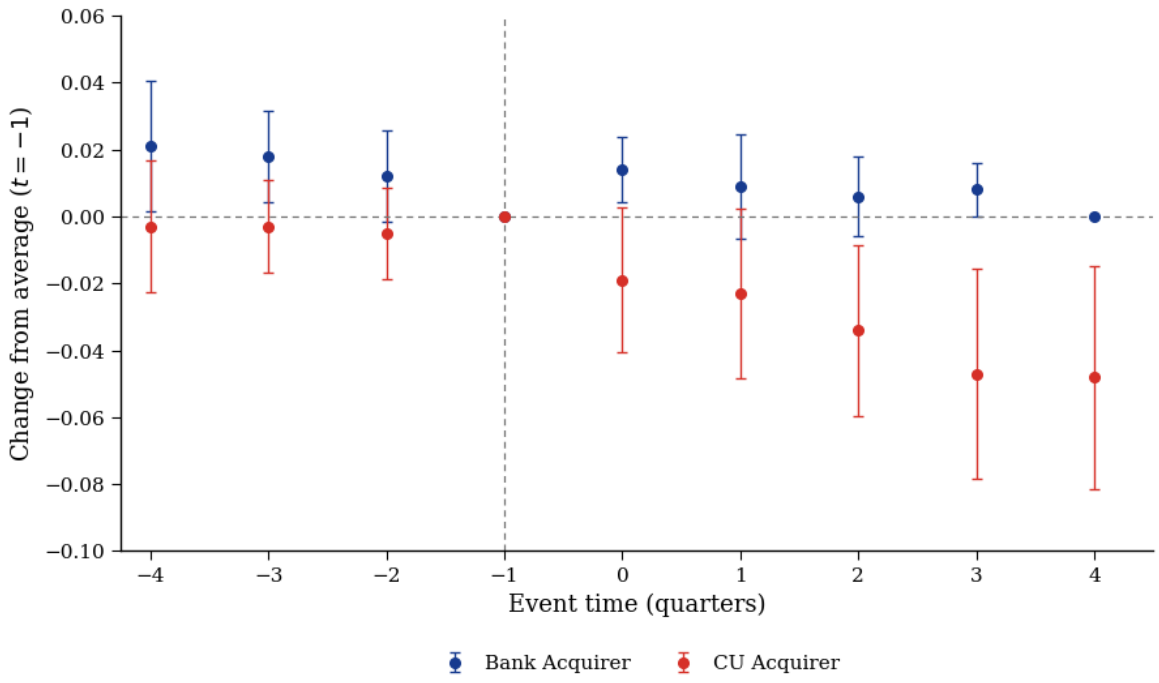

Figure 9: Change in Deposit Spreads (Top Quartile): Credit Union vs. Bank

This figure reports dynamic difference-in-differences estimates of deposit spreads for transactions in the top quartile of the target-to-buyer pre-acquisition deposit ratio. The dependent variable is the combined institution's deposit spread relative to its average over the four pre-acquisition quarters ($t = -4$ through $t = -1$), in basis points. Estimates are relative to the omitted quarter $t = -1$. Blue points report event-time coefficients for bank acquisitions, while red points report incremental credit union effects. Vertical bars represent 95% confidence intervals. The specification includes pro-forma entity and year-quarter fixed effects, CEM weights, and standard errors clustered at the target-bank level.

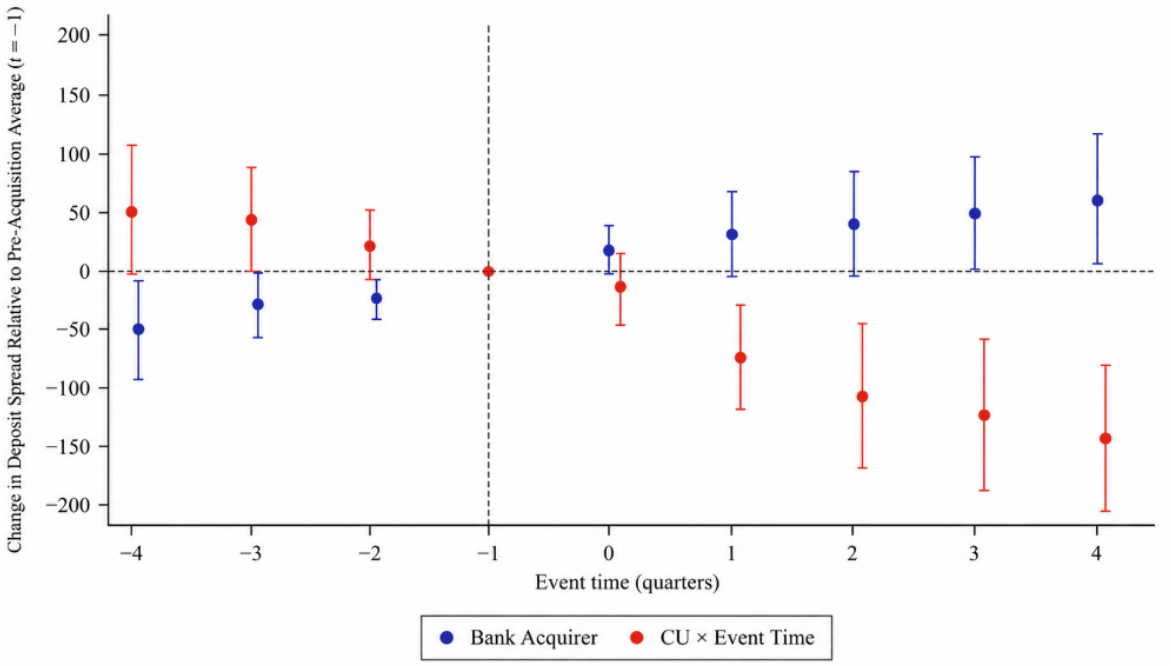

Table 1: Summary Statistics of Bank Targets by Buyer Type. Financial variables are measured as the average of quarters $q-5$ through $q-2$ relative to the acquisition quarter. *Credit Union Targets* sample includes banks acquired by credit unions, while *Banks Targets* sample includes banks acquired by other commercial banks. Column *Mean Diff* reports the mean differences between CU- and bank- targets while column *t-Stat* reports the t-statistics from the two-sample tests of mean differences. Statistical significance is denoted by * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$.

	N	Mean	Median	Std. Dev.	25th Pctl.	75th Pctl.	Mean Diff.	t-Stat
Panel A: Credit Union Targets								
log(Assets)	89	12.143	12.115	0.907	11.512	12.712		
Efficiency	89	1.638	1.569	0.423	1.358	1.831		
NPL Ratio	89	0.008	0.003	0.014	0.001	0.009		
HHI	89	0.074	0.034	0.100	0.013	0.091		
Rate Spread (%)	89	0.990	1.290	0.532	0.510	1.340		
Commercial Lending	89	0.363	0.369	0.186	0.206	0.512		
Subchapter S Corp	89	0.281						
Panel B: Bank Targets								
log(Assets)	2,037	12.002	11.986	1.057	11.253	12.767	-0.141	-1.24
Efficiency	2,037	1.579	1.517	0.428	1.302	1.778	-0.058	-1.26
NPL Ratio	2,037	0.013	0.006	0.018	0.001	0.016	0.004	2.47**
HHI	2,037	0.087	0.059	0.096	0.018	0.122	0.013	1.28
Rate Spread(%)	2,037	1.145	1.320	0.437	1.280	1.350	0.156	3.25***
Commercial Lending	2,037	0.320	0.305	0.191	0.154	0.471	-0.043	-2.09**
Subchapter S Corp	2,037	0.283					0.003	0.06

Table 2: Target Selection in Credit Union Acquisitions. This table reports the estimates of the conditional logit model equation (3). The sample includes all potential bank targets in the acquisition choice set for each realized credit union acquisition. The dependent variable, *Event*, equals one if the bank is selected as the acquisition target within the credit union's choice set and zero otherwise. Each specification includes acquirer fixed effects, thus it compare the realized target bank to alternative target banks available to an acquirer within the same year. Standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	Baseline	+ Rate Spread	+ Commercial Lending	+ Subchapter S Corporation	Full Specification
log(Assets)	-0.199*	-0.161	-0.314**	-0.177	-0.337***
	(0.115)	(0.113)	(0.123)	(0.112)	(0.126)
Efficiency	-0.594**	-0.523**	-0.680**	-0.549**	-0.656**
	(0.298)	(0.209)	(0.300)	(0.269)	(0.309)
NPL Ratio	0.097	-0.256	-0.752	-0.288	0.230
	(8.272)	(8.176)	(8.060)	(8.182)	(8.182)
HHI	-4.633***	-4.980***	-3.962***	-5.469***	-2.428*
	(1.558)	(1.590)	(1.539)	(1.161)	(1.516)
Geographic Overlap	8.514***				8.306***
	(0.734)				(0.728)
Rate Spread		-64.041***			-70.546***
		(19.153)			(20.458)
Commercial Lending			2.274***		2.226***
			(0.638)		(0.638)
Subchapter S Corporation				-0.212	0.013
				(0.243)	(0.254)
Acquirer–Deal Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	400,829	400,829	400,829	400,829	400,829

Table 3: Target Selection in Bank and Credit Union Acquisitions. This table reports the estimates of the conditional logit model equation (4). The sample includes all potential bank targets in the acquisition choice set for each realized deal. The dependent variable, *Event*, equals one if the bank is selected as the acquisition target within the acquirer's choice set and zero otherwise. Each specification includes acquirer fixed effects, thus it compare the realized target bank to alternative target banks available to an acquirer within the same year. Interaction terms allow target selection preferences to differ between credit union and bank acquirers. Standard errors are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels.

	Baseline	+ Rate Spread	+ Commercial Lending	+ Subchapter S Corporation	Full Specification
log(Assets)	-0.153***	-0.142***	-0.215***	-0.165***	-0.237***
	(0.023)	(0.024)	(0.025)	(0.023)	(0.026)
CU × log(Assets)	-0.046	-0.018	-0.098	-0.041	-0.099
	(0.117)	(0.115)	(0.125)	(0.117)	(0.128)
Efficiency	-0.482***	-0.478***	-0.482***	-0.434***	-0.435***
	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)
CU × Efficiency	-0.111	-0.045	-0.198	-0.124	-0.221
	(0.305)	(0.296)	(0.307)	(0.307)	(0.315)
NPL Ratio	1.510	1.544	0.956	1.351	0.762
	(1.316)	(1.302)	(1.303)	(1.322)	(1.321)
CU × NPL Ratio	-1.412	-1.811	-1.708	-1.243	-0.993
	(8.376)	(8.279)	(8.164)	(8.403)	(8.281)
HHI	-1.757***	-2.227***	-1.665***	-1.539***	-0.908***
	(0.261)	(0.269)	(0.270)	(0.261)	(0.263)
CU × HHI	-2.876**	-2.753**	-2.296	-2.991**	-1.521
	(1.508)	(1.613)	(1.616)	(1.588)	(1.538)
Geographic Overlap	7.957***				7.977***
	(0.137)				(0.137)
CU × Geographic Overlap	0.556				0.329
	(0.746)				(0.740)
Rate Spread		-8.266			-7.760
		(5.300)			(5.240)
CU × Rate Spread		-55.378***			-62.786***
		(19.803)			(21.109)
Commercial Lending			1.126***		1.137***
			(0.138)		(0.137)
CU × Commercial Lending			1.148**		1.880**
			(0.625)		(0.650)
Subchapter S Corporation				-0.266***	-0.250***
				(0.051)	(0.051)
CU × Subchapter S Corporation				0.093	0.263
				(0.252)	(0.260)
Acquirer–Deal Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	11,101,220	11,101,220	11,101,220	11,101,220	11,101,220

Table 4: Structural Model of Target Selection in Bank and Credit Union Acquisitions. This table reports the with-transfer-data estimates of the revealed-preference matching model equation (5). Parentheses report 95% subsampling confidence intervals. "Pct Inequality" is the fraction of revealed-preference inequalities satisfied by the estimated model. $^{**}p < 0.05$.

	Baseline	+ Geographic Overlap	+ Rate Spread	+ Commercial Lending	Subchapter S Corporation	Full Specification
log(Assets)	-0.97**	-0.29	-0.58**	-1.06**	-0.20	-1.24**
	(-1.37, -0.25)	(-1.09, 0.00)	(-1.05, -0.13)	(-1.51, -0.35)	(-1.03, 0.02)	(-1.57, -0.46)
NPL Ratio	0.32	-0.59	0.03	-0.72	-0.84	-0.22
	(-0.63, 0.86)	(-0.96, 0.23)	(-1.01, 0.54)	(-1.20, 0.25)	(-1.30, 0.26)	(-0.91, 0.41)
Efficiency	0.78**	-0.08	0.83**	0.80**	0.55**	0.06
	(0.12, 1.49)	(-0.21, 1.13)	(0.18, 1.47)	(0.18, 1.62)	(0.01, 1.54)	(-0.10, 1.19)
HHI	1.98**	3.70**	4.50**	3.50**	2.65**	3.09**
	(1.23, 3.75)	(1.87, 4.08)	(2.23, 4.63)	(1.88, 4.95)	(1.59, 4.29)	(1.86, 4.05)
Geographic Overlap	362.18**	443.14**	456.05**	496.73**	467.45**	434.09**
	(422.90, 447.06)	(436.38, 478.04)	(449.13, 483.09)	(436.69, 498.48)	(455.21, 487.43)	(443.34, 474.56)
CU × Geographic Overlap		59.16				453.03**
		(-112.98, 323.00)				(137.34, 474.14)
Rate Spread			0.59			0.69
			(-0.07, 0.68)			(-0.02, 0.74)
CU × Rate Spread			-314.44**			-288.57**
			(-217.28, -105.53)			(-276.87, -79.21)
Commercial Lending				0.01		0.05
				(-0.33, 1.13)		(-0.19, 0.93)
CU × Commercial Lending				125.26**		309.87**
				(35.65, 106.64)		(102.28, 153.79)
Subchapter S Corporation					0.92	-0.14
					(-0.38, 0.75)	(-0.82, 0.23)
CU × Subchapter S Corporation					-14.85	43.74
					(-87.69, 1.62)	(-45.44, 53.62)
Pct Inequality	0.52	0.53	0.53	0.53	0.52	0.52

Table 5: Change in Lending Exposure Following Acquisition. This table reports pooled and dynamic difference-in-differences estimates of lending outcomes following acquisition. For all lending specifications, the dependent variable is the change in combined loan type normalized by the average level of combined loan type during the four quarters preceding acquisition (event times $t = -4$ through $t = -1$). Dynamic specifications estimate separate coefficients for each event quarter relative to the omitted reference period ($t = -1$). All models include bank target fixed effects and year-quarter fixed effects and are weighted using coarsened exact matching (CEM) weights. Cumulative lending exposure measures are winsorized at the 1st and 99th percentiles prior to estimation. Standard errors clustered at the target institution level are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Commercial Pooled	(2) Commercial Dynamic	(3) Residential Mortgage Pooled	(4) Residential Mortgage Dynamic
POST	0.032*		-0.046***	
	(0.019)		(0.015)	
CU × POST	-0.037		0.120***	
	(0.034)		(0.026)	
EVENT TIME −4		0.058***		0.032**
		(0.018)		(0.015)
EVENT TIME −3		0.042***		0.029**
		(0.014)		(0.012)
EVENT TIME −2		0.029***		0.026***
		(0.010)		(0.009)
EVENT TIME 0		0.012		0.022*
		(0.011)		(0.016)
EVENT TIME +1		0.012		0.011
		(0.011)		(0.012)
EVENT TIME +2		0.013		0.007
		(0.009)		(0.008)
EVENT TIME +3		0.008		0.001
		(0.006)		(0.005)
EVENT TIME +4		0.000		0.000
		(0.000)		(0.000)
CU × EVENT TIME −4		0.019		-0.037**
		(0.026)		(0.018)
CU × EVENT TIME −3		0.009		-0.036***
		(0.021)		(0.014)
CU × EVENT TIME −2		0.002		-0.034***
		(0.016)		(0.012)
CU × EVENT TIME 0		0.007		0.094***
		(0.033)		(0.028)
CU × EVENT TIME +1		-0.025		0.108***
		(0.032)		(0.028)
CU × EVENT TIME +2		-0.029		0.125***
		(0.038)		(0.029)
CU × EVENT TIME +3		-0.038		0.126***
		(0.040)		(0.033)
CU × EVENT TIME +4		-0.026		0.126***
		(0.046)		(0.033)
Year–Quarter FE	Yes	Yes	Yes	Yes
Pro-forma Entity FE	Yes	Yes	Yes	Yes
CEM Weighting	Yes	Yes	Yes	Yes
Observations	1,854	1,854	1,854	1,854
R^2	0.565	0.568	0.698	0.717

Table 6: Mortgage Originations Following Acquisition. This table reports pooled and dynamic difference-in-differences estimates of mortgage origination activity following acquisitions. The dependent variable is the log-population scaled number of mortgage originations reported under the Home Mortgage Disclosure Act (HMDA) within target counties. Column (1) reports pooled difference-in-differences estimates, where Post equals one for periods following acquisition. Column (2) reports dynamic difference-in-differences estimates that separately identify effects at each event time relative to the omitted pre-acquisition period ($t = -1$). All specifications include county and year fixed effects. Standard errors are clustered at the target-bank level. Statistical significance at the 1%, 5%, and 10% levels is denoted by ***, **, and *, respectively.

VARIABLES	(1) Log Mortgage Originations Pooled	(2) Log Mortgage Originations Dynamic
POST	-0.165	
	(0.182)	
CU × POST	0.260	
	(0.205)	
EVENT $t-2$		0.064
		(0.110)
EVENT t		-0.287*
		(0.111)
EVENT $t+1$		-0.487***
		(0.173)
EVENT $t+2$		-0.786***
		(0.240)
CU × EVENT $t-2$		0.086
		(0.113)
CU × EVENT t		0.121
		(0.157)
CU × EVENT $t+1$		0.497**
		(0.202)
CU × EVENT $t+2$		0.435**
		(0.206)
Log County GDP	1.172	0.709
	(0.911)	(0.769)
Log Branch Count	0.276	0.502
	(0.880)	(0.805)
Deal-County Fixed Effects	Yes	Yes
CEM Weighting	Yes	Yes
Observations	775	775
Adjusted R^2	0.745	0.804

Table 7: Change in Deposits Following Acquisition. This table reports pooled and dynamic difference-in-differences estimates of deposit growth following acquisition. The dependent variable in the total deposit specifications is the change in combined deposits normalized by the average level of combined deposits during the four quarters preceding acquisition (event times $t = -4$ through $t = -1$). The dependent variable in the insured deposit specifications is the change in combined insured deposits normalized by the average level of combined insured deposits during the four quarters preceding acquisition. Columns (2) and (5) include controls for post-acquisition branch closures, where Closure Rate is measured as the proportion of target branches closed within one year following acquisition. Dynamic specifications estimate separate coefficients for each event quarter relative to the omitted reference period ($t = -1$). All models include bank target fixed effects and year–quarter fixed effects. Standard errors clustered at the target institution level are reported in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1) Total Deposits Pooled	(2) Total Deposits + Closure Control Pooled	(3) Total Deposits Dynamic	(4) Insured Deposits Pooled	(5) Insured Deposits + Closure Control Pooled	(6) Insured Deposits Dynamic
POST	0.018**	0.006		0.022**	0.012	
	(0.008)	(0.008)		(0.008)	(0.009)	
POST × CLOSURE RATE		0.043			0.015	
		(0.042)			(0.044)	
CU × POST	-0.032**	-0.023*		-0.045***	-0.036**	
	(0.014)	(0.014)		(0.015)	(0.014)	
CU × POST × CLOSURE RATE		-0.017			0.003	
		(0.048)			(0.050)	
EVENT TIME −4			0.021**			0.024**
			(0.010)			(0.011)
EVENT TIME −3			0.018**			0.019**
			(0.007)			(0.008)
EVENT TIME −2			0.012*			0.012**
			(0.007)			(0.006)
EVENT TIME 0			0.014*			0.015*
			(0.008)			(0.008)
EVENT TIME +1			0.009			0.011
			(0.008)			(0.007)
EVENT TIME +2			0.006			0.005
			(0.006)			(0.006)
EVENT TIME +3			0.008			0.007
			(0.004)			(0.004)
EVENT TIME +4			0.000			0.000
			(0.000)			(0.000)
CU × EVENT TIME −4			-0.003			-0.007
			(0.010)			(0.010)
CU × EVENT TIME −3			-0.003			-0.004
			(0.007)			(0.008)
CU × EVENT TIME −2			-0.004			-0.005
			(0.007)			(0.007)
CU × EVENT TIME 0			-0.019*			-0.035***
			(0.011)			(0.012)
CU × EVENT TIME +1			-0.023*			-0.041**
			(0.013)			(0.014)
CU × EVENT TIME +2			-0.034***			-0.050***
			(0.013)			(0.015)
CU × EVENT TIME +3			-0.047***			-0.062***
			(0.016)			(0.017)
CU × EVENT TIME +4			-0.048***			-0.068***
			(0.017)			(0.019)
Year–Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Pro-forma Entity FE	Yes	Yes	Yes	Yes	Yes	Yes
CEM Weighting	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,674	1,674	1,674	1,674	1,674	1,674
R^2	0.708	0.696	0.710	0.683	0.684	0.685

Table 8: Deposit Spreads Following Acquisition. This table reports pooled and dynamic difference-in-differences estimates of changes in deposit spreads following acquisition. The dependent variable is the change in the combined deposit spread relative to its average over the four pre-acquisition quarters ($t = -4$ through $t = -1$), in basis points. Columns (1)–(2), (3)–(4), and (5)–(6) restrict the sample to observations above the 25th, 50th, and 75th percentiles of the target-to-buyer deposit ratio, respectively. Pooled specifications estimate average post-acquisition differences between credit union and bank acquirers; dynamic specifications report event-quarter differences relative to $t = -1$. All models include pro-forma entity and year-quarter fixed effects and CEM weights. Standard errors are clustered at the target-bank level. *, **, and *** denote significance at the 10%, 5%, and 1% levels.

	(1)	(2)	(3)	(4)	(5)	(6)
	Top 75% of Targets		Top 50% of Targets		Top 25% of Targets	
	Pooled Deposit Spread	Dynamic Deposit Spread	Pooled Deposit Spread	Dynamic Deposit Spread	Pooled Deposit Spread	Dynamic Deposit Spread
POST	62.367***		55.840**		56.352**	
	(22.895)		(24.960)		(28.353)	
CU × POST	-23.132		-32.861		-124.098***	
	(34.085)		(42.922)		(46.315)	
EVENT TIME −4		-47.848***		-41.578**		-57.142**
		(17.028)		(19.726)		(28.355)
EVENT TIME −3		-34.845***		-28.068**		-38.628**
		(12.847)		(13.603)		(18.398)
EVENT TIME −2		-19.912***		-15.801**		-18.151**
		(6.905)		(6.217)		(9.171)
EVENT TIME 0		17.261***		13.531**		15.746*
		(7.382)		(6.169)		(8.698)
EVENT TIME +1		29.312***		25.742**		27.315*
		(13.980)		(13.621)		(14.677)
EVENT TIME +2		39.576***		35.363**		29.775
		(19.671)		(22.366)		(23.181)
EVENT TIME +3		52.684***		48.914**		40.325
		(23.429)		(27.302)		(27.715)
EVENT TIME +4		59.619***		55.807**		49.449
		(26.537)		(31.112)		(233.840)
CU × EVENT TIME −4		-8.659		-32.719		31.278
		(26.244)		(36.143)		(54.245)
CU × EVENT TIME −3		-2.524		-17.501		34.780
		(17.554)		(27.095)		(33.616)
CU × EVENT TIME −2		0.02647		-7.422		22.529*
		(11.057)		(16.027)		(14.751)
CU × EVENT TIME 0		-0.540		1.046		-22.377
		(11.606)		(16.708)		(15.815)
CU × EVENT TIME +1		-13.682		-28.154		-71.593***
		(20.147)		(24.538)		(25.599)
CU × EVENT TIME +2		-21.773		-51.183		-103.392**
		(28.288)		(33.674)		(36.111)
CU × EVENT TIME +3		-31.450		-70.756*		-124.434***
		(33.444)		(38.424)		(37.847)
CU × EVENT TIME +4		-35.760		-95.536**		-144.004***
		(37.888)		(41.935)		(41.476)
Year Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
Pro-forma Entity FE	Yes	Yes	Yes	Yes	Yes	Yes
CEM Weighting	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,250	1,250	692	692	414	414
R^2	0.477	0.481	0.472	0.493	0.509	0.534

Appendix

Table A1: Descriptive Statistics for the Final Matched Sample. This table reports descriptive statistics for the final coarsened exact matched sample used in the empirical analyses. The sample consists of 218 target institutions, including 65 credit union acquisitions and 153 bank acquisitions.

Variable	N	Mean	Std. Dev.	Median	25th Pctl.	75th Pctl.
Log Target Assets	218	11.876	0.963	11.841	11.331	12.433
Target Commercial Lending	218	0.325	0.198	0.311	0.157	0.480
Target Deposit Spread	218	0.010	0.005	0.013	0.005	0.013
Target Efficiency Multiple	218	1.623	0.427	1.545	1.323	1.857
Target NPL Ratio	218	0.010	0.016	0.004	0.001	0.011

Table A2: Coarsened Exact Matching Diagnostics. This table reports post-match covariate balance for the final matched sample. Matching is performed on acquisition year, region, target size tercile, target commercial lending exposure tercile, and target deposit spread tercile. The Difference column reports bank targets minus credit union targets. P-values are based on two-sample t-tests. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

Variable	Bank Targets	CU Targets	Difference	p-value
Log Target Assets	11.83	11.98	-0.15	0.2980
Target Commercial Lending	31.93%	33.83%	-0.019	0.5192
Target Deposit Spread	1.04%	0.95%	0.001	0.2436
Target Efficiency Multiple	1.63	1.60	0.03	0.5886
Target NPL Ratio	1.07%	0.82%	0.002	0.3106
Observations	153	65		

Table A3: Coarsened Exact Matching Strata. This table reports summary statistics for the matched CEM strata. A stratum is defined by acquisition year, region, target size tercile, target commercial lending exposure tercile, and target deposit spread tercile.

Variable	N	Mean	Median	Minimum	Maximum
Credit Union Acquisitions per Stratum	56	1.16	1.00	1.00	2.00
Bank Acquisitions per Stratum	56	2.73	2.00	1.00	11.00
Total Observations per Stratum	56	3.89	3.00	2.00	12.00
Total Credit Union Deals	65				
Total Bank Deals	153				
Matched Strata	56				

Table A4: Summary Statistics for Panel Regression Outcome Variables. This table reports summary statistics for the outcome variables used in the panel regressions. Commercial lending, residential mortgage lending, total deposits, and insured deposits are measured using the full matched panel of acquisition events. Deposit spread is measured using the available pricing sample, resulting in a smaller estimation sample.

Variable	N	Mean	Std. Dev.	Median	25th Percentile	75th Percentile
Commercial Lending	1,854	0.089	0.197	0.032	-0.014	0.132
Residential Mortgage Lending	1,854	0.091	0.177	0.034	-0.008	0.138
Total Deposits	1,854	0.060	0.118	0.023	-0.007	0.089
Insured Deposits	1,854	0.054	0.120	0.018	-0.009	0.080
Deposit Spread	1,673	0.003	0.013	0.000	-0.002	0.006