In Pursuit of Economies of Scope: Credit Unions' Acquisitions of Banks and Thrifts

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Between 2012 and 2018, 19 credit unions acquired 23 banks and thrifts. 12 in 2017 and 2018; 17 are in process. Acquiring credit unions are pursuing economies of scope via traditional bank products. They are matched to and contrasted with peer credit unions that are not acquirers. Acquired institutions are matched and contrasted with peers that were not acquired. Performance is measured by CAMEL ratios. Acquiring credit unions have greater ROE and ROA, than nonacquirers, but are less liquid. Acquired institutions have lower capital adequacy, returns, and earnings than matches. Regulators should not discourage credit unions from economies of scope through acquisitions.

Keywords: credit unions, economies of scope

BACKGROUND

Until 2011, credit unions primarily served their members by offering share draft accounts, providing consumer loans, supplying a modest amount of business loans, and pursuing potential economies of scale independently from banks and savings institutions. (Walker, 2016). Between 2012 and 2018, 19 credit unions acquired 23 banks and savings and loan associations; Five Star, Self-Help, Achievia and Advia each made two acquisitions. There is increasing interest in such acquisitions. Seventeen acquisitions are at various stages of completion in 2019 (see Appendix Table A; Davis, 2019; Bartlett, 2019; Clozel, 2019; Ghosh, 2019; McCarthy, 2019a and 2019b) The data set of 19 credit unions that acquired 23 banks and thrifts through 2018 allows tests of the characteristics of acquirers and acquired institutions. Some of the vertical integrations have enabled the acquiring credit unions to explore economies of scope by broadening the range of financial services that could be offered.

This study provides insights into the unique characteristics of two sets of financial institutions: (1) credit unions that **have acquired** banks and savings institutions and (2) banks and savings institutions that **have been acquired** by credit unions. The set of acquiring credit unions (CUA) is matched to and contrasted with a group of similar credit unions that did not acquire a bank or savings and loan association (CUN) during the period 2012-2018. Analogously, the acquired banks and thrifts (BSA) are matched and contrasted with similar banks and savings institutions that were not acquired by credit unions (BSN) during that time.

The analysis examines characteristics of the acquisitions delineated by Walker and Smith (2019) who analyzed the initial vertical credit union acquisitions. They show that the acquiring credit unions became less risky following their acquisitions and acquirers loaned a greater share of their deposits. The acquiring credit unions benefitted from enhancing their economies of scope and scale.

The matching processes for credit unions and banks and thrifts are delineated in Section II. Section III provides the framework and hypotheses to contrast both types of institutions that were acquirers or non-acquirers. (CUA vs. CUN and BSA vs. BSN). The empirical results and hypothesis tests are provided in Section IV. The conclusions follow.

MATCHING INSTITUTIONS

Matching Credit Unions

The contrasts between the credit unions that have been involved in the acquisitions and those that have not made acquisitions are developed by matching institutions with similar characteristics. The NCUA organizes credit union financial and regulatory data into six peer groups, depending on an institution's size and location within a NCUA regulatory region. Each acquiring credit union (CUA) is matched with a group of similar credit unions that (i) did not acquire (CUN), (ii) are located within the same NCUA peer group (region and approximate size), and (iii) have assets within 20 percent of the acquirers. A representative credit union composite is developed from the matched group that did not acquire a bank or savings institution.

Table 1 lists the 23 credit union acquisitions of banks or thrift institutions and the total assets for each. The far-right column identifies the federal charter type for the acquired institutions, most of which are small and federally regulated by the FDIC. The mean and median sizes of the acquired banks and savings institutions are $126 million and $101 million, respectively. (Twenty percent of all U.S. banks and thrifts had assets between $100 million and $1 billion at the end of 2017.) Table 1 also shows the large number of potential matches for each of the acquiring credit unions. For example, based on size, region, acquisition year, and federal or state charter, 531 credit unions are matches for SRP and Achieva in 2018 and 481 credit unions are matches for six acquirers in 2017 and 2016.

Matching Banks and Savings Institutions

The banks and savings institutions that have been acquired (BSA) are matched with similar institutions that were not acquired (BSN). The members of BSN are selected on similar bases as the credit unions that did not acquire. The matches are institutions with the most similar alternatives having assets within 20 percent (BSN) located in the same state, and supervised by the same federal financial regulator.

The goal is to match 10 institutions that were not acquired with each acquired institution and then to average the financial data of the unacquired to create a "representative," matched institution. Sixteen of the acquired institutions were each matched with 10 institutions that were not acquired. In five other cases between 6 and 9 matches were identified.

There are two unusual cases. In one case, only two matching institutions were identified, even after including a search of an adjoining state. The matching process for the Bank of Pine Hill, Alabama (assets of $20 million) provided only one peer. By expanding the asset range and including adjacent zip codes in a neighboring state, one additional match was determined. The third closest match has assets of $264 million, so the representative unacquired institution is based on only two peers. For Monadnock Community Bank, no peers fit within the parameters nor within the asset range. Since the acquiring credit union crossed from Massachusetts into New Hampshire for its acquisition, representative matches satisfying the matching parameters in Massachusetts were selected.

FRAMEWORK AND HYPOTHESES

Framework

The framework is to contrast sets of matched institutions -- CUA versus CUN and BSA versus BSN - based on contrasts of simulated CAMEL ratios. Five key ratios simulate what bank and credit union regulators measure to analyze the performance of insured depository institutions. The simulated CAMEL ratios, with their measurements in parentheses, are:

- Capital Adequacy: net worth / total assets (NW/TA) = C_1
- Asset Quality: net loan charge-offs / total loans (NCO/TL) = C_2
- Management: net income / equity (return on equity, ROE) = C^3
- Earnings: net income / total assets (return on assets, ROA) = C_4
- Asset Liquidity: (cash + USGs + Fed funds sold) / TA = C_5

Management performance is measured by ROE because financial managers report to bank shareholders and credit union members, who may decide to find new managers if they are dissatisfied with management's performance. ROA is applied to measure aggregate earnings because all of an institution's liabilities and capital are employed to generate earnings. There are a number of other key ratios that might be considered, but these five summarize the institutions' performance and other ratios are highly correlated with these. These ratios are hypothesized to reflect major differences between an acquired institution and the representative unacquired institutions.

Characteristics of acquiring and acquired institutions

Table 2 provides the comparisons between the acquiring credit unions (CUA) and the matched credit unions (CUN), respectively, for the simulated CAMEL ratios. Table 2 is employed to generate Table 4, which delineates the financial differences *(a – r)* between the acquiring credit unions *(a)* and the matched credit unions that were not acquired *(r)*.

Table 3 provides the comparisons between the acquired banks or saving institutions (BSA) and their matched, representative institutions (BSN), respectively, for the CAMEL ratios. Table 3 is employed to generate Table 5, which lists the differences *(a – r)* between acquiring banks and thrift institutions *(a)* and matched institutions that were not acquired *(r)*.

Hypotheses

One expectation of the acquisition process would be that institutions of similar financial strength merge to produce a larger and more efficient unit. However, an alternate view is that a stronger unit acquires a weaker one and, indeed, that it is the weakest institutions that are most likely to be acquired. If this second view holds, these results, combined with the conclusion in Walker and Smith (2019), indicate that the increase in total assets and managerial skills should more than offset any weaknesses in the acquired units. Further, interviews with CEOs of acquiring credit unions (Walker, 2016) reveal that acquisitions were often made to develop a credit union's mortgage and business lending and to pursue economies of scope.

To examine the differences in performance between the acquiring and acquired institutions and their composite representatives we formulate the following null and two-tailed alternative hypotheses (for each variable):

$\boldsymbol{H_0}$: *There is no difference between the acquired and representative institutions*

$\boldsymbol{H_A}$: *There is a difference between the acquired and representative institutions.*

ANALYSIS

The Wilcoxon Signed Rank Tests (WSRT) are used to test the hypotheses of differences. Differences cannot be evaluated using t-tests for two reasons. First, the data include a number of outliers, so an assumption of normality is not close to being satisfied. Second, the analysis is for the entire set of takeovers that took place between 2012 and 2018, so the observations do not constitute a random sample from some larger population.

Both objections can be overcome by applying the Wilcoxon Signed Rank Test (WSRT). This test uses only ranked data, so no assumption of normality is required. Second, the WSRT tests the hypotheses using the set of random permutations of the ranks, so no assumption of a hypothetical population is needed.

The results of the analyses are presented in terms of P-values. The P-values refer to two-tailed tests. It may reasonably be argued that the direction of the deviations from the null hypothesis could be pre-specified. The resulting one-tailed tests would have P-values half those given in the table, but we preferred to adopt the more conservative approach.

Results

The bottom panel of Table 4 provides means, medians, standard deviations, and P-values for Wilcoxon Signed Rank Test (WSRT) for the credit union differences (acquirers). Table 5 provides the corresponding information for banks and savings institutions (acquired). The means are less reliable indicators than the medians because of extreme values. For example, in Table 3, acquisitions by Self-Help Federal Credit Union have extreme observations (Walker, 2018, Figure 15).

Discussion

Based upon the WSRT results in Table 4, the acquiring credit unions have larger management returns - measured by ROE, and earnings - measured by ROA, but they are somewhat less liquid. There is no clear pattern with respect to capital ratios (capital adequacy) or asset quality. The CUA credit unions are able to allocate a greater share of their total assets to risky assets, which are expected to earn the highest returns. Credit unions earn greater net returns on loans to businesses and they hold more deposits in transaction deposits on which they pay members lower interest rates. The acquirers have a considerably greater percentage of their loan portfolio in mortgages, which are expected to generate higher incomes. The results are not materially changed when second entries for the four acquirers with two acquisitions are removed. Interviews with several CEOs of acquiring credit unions (Walker, 2016) reveal that acquisitions were often made in order to develop their mortgage lending and to pursue economies of scope.

Table 5 examines the same ratios for the acquired institutions, relative to their matched institutions, again using the WSRT. The acquired banks and savings institutions score lower on capital adequacy, management returns and earnings. They also tend to have smaller percentages of assets in liquid assets -- cash, US government securities, and fed funds sold, less of their total loans in consumer loans, and more of their deposits in low interest earning share drafts or transactions deposits.

The WRST results indicate that asset quality was similar to the comparison groups for both parties. Thus, the overall asset mix would not be materially affected by combining the two sets of assets. The other capital differences probably attracted credit union executives to the banks and thrifts they acquired. The relatively lower liquidity for both parties could also make an acquisition attractive. In numerous cases, executives and major stockholders of banks that were acquired either sought or encouraged the acquisitions. These experiences were reported in a series of interviews with senior executives of credit unions that acquired banks (Walker, 2018, chapter 6).

Walker and Smith (2019) find that the acquirers had somewhat stronger CAMEL ratios after than before their acquisitions. After their acquisitions, the acquirers established higher capital ratios, earned greater returns on assets and maintained virtually the same net charge-off to loans ratios. The test results presented in this paper are consistent with those findings; in combination, the results demonstrate that the acquirers began with strong financials, and at least maintained that strength after acquiring institutions with weaker fundamentals.

CONCLUSIONS

Twelve of the 23 credit union acquisitions of banks and savings institutions have occurred in 2017 and 2018. Four credit unions have acquired more than one bank. The activity continues to increase. Seventeen additional acquisitions are in various stages of closing before the end of 2020. Acquiring credit unions are matched to and contrasted with peer credit unions that did not acquire a bank or thrift. Analogously, acquired banks and thrifts are matched and contrasted with peer institutions that were not acquired. Asset quality and sizes were close to the comparison group in each case.

The institutions' financial performance is measured by their CAMEL ratios. The Wilcoxon Signed Rank Tests indicate that acquiring credit unions were able to provide superior management and earnings performance. This finding combined with the previous results in Walker and Smith (2019) affirm an overall picture of successful credit unions continuing strong performance after acquiring banks and thrifts that were in relatively weak financial positions. The Federal financial regulators do not need to discourage credit unions from pursuing potential economies of scope through bank acquisitions.

ACKNOWLEDGEMENT

The authors would like to acknowledge the research assistance of Camilla Wasiak for this study.

REFERENCES

Bartlett, M. (2019, September). Elevations credit union agrees to buy Colorado Bank. *American Banker*, 5.

Bauer, K. J., Miles, L. L., & Nishikawa, T. (2009). The effects of mergers on credit union performance. *Journal of Banking and Finance*, 33, 2267 - 2274.

Benston, G. J., Hanweck, G. A., & Humphrey, D. B. (1982). Scale economies in banking. *Journal of Money Credit and Banking*, 14, 435-456.

Berger, A. N., Davies, S., & Flannery, M. (2000, June). Comparing market and regulatory assessments of bank performance. *Journal of Money, Credit and Banking*, 32, 641-667.

Clozel, L. (2019, September). Credit unions go on buying spree for small banks. *The Wall Street Journal*, 4.

Davis, P. (2019, November 26). *Iowa credit union to enter Illinois through bank acquisition*. American Banker.

DeYoung, R., Goddard, J., McKillop, D. G., & Wilson, J.O.S. (2017, January). *Who consumes the credit union tax subsidy?* Presented to the ASSA Meetings, Chicago, IL.

Dopico, L. G. (2018). *Factors contributing to credit union asset growth, 1979 – 2016*. Filene Research Institute, Madison, WI.

Dopico, L. G., & Wilcox, J. A. (2009). *Characteristics of credit union mergers: 1984 – 2008.* Filene Research Institute, Madison, WI.

Ghosh, P. (2018, September 24). *Washington posed to have first-ever bank sold to a credit union.* American Banker.

Ghosh, P. (2019, June 6). *Credit union – bank merger wave reaches Arizona*. American Banker.

Goldstein, S. J., McNulty, J. E., & Verbrugge, J. A. (1987, August). Scale economies in the savings and loan industry before diversification. *Journal of Economics and Business*, 39(3), 199-207.

Harjoto, M. A., Yi, H.C., & Chotigeat, T. (2012). Why do banks acquire non-banks? *Journal of Economics and Finance*, 36(3), 587-612.

Hughes, J. P., & Mester, L. J. (2013). Efficiency in banking: theory and evidence. *Journal of Financial Intermediation*, 22, 559-585.

McCarthy, K. (2019, June 20). *Latest credit union deal to buy bank adds fuel to simmering policy fight.* American Banker.
McCarthy, K. (2019, November 15). *Indiana bank lines up rate credit union acquisition*. American Banker.
National Credit Union Administration. (2016, June 16). NCUA Outlines Plans for Adding "S" to Credit Union CAMEL Ratings," Board Action Bulletin.
National Credit Union Administration. (2017). 5300 Call Report aggregate financial performance reports (FPRs), Washington, DC.
National Credit Union Administration. (2017, December 1). NCUA Report – Fourth Quarter Report.
Reosti, J. (2018, April 27). *Credit unions vs. banks: how we got here*. American Banker.
Saunders, A., & Cornett, M. M. (2019). *Financial Markets and Institutions*. McGraw-Hill. New York. NY.
Stewart, J. (2018, April 9). *Credit unions are buying more banks: get used to it*. American Banker.
Walker, D. A. (2016). Credit unions rising share of small business loans. *Journal of Accounting and Finance*, 16, 11-24
Walker, D. A. (2018). *Credit Unions' Acquisitions of Banks and Thrifts*. Westchester Publishing Services for the Filene Institute, Madison, Wisconsin.
Walker, D.A., & Smith, K. I. (2019). Credit Unions' Acquisitions of Banks and Thrifts. *Journal of Financial and Economic Policy*, 3.
Wheelock, D. C., & Wilson, P.W. (2011). Are credit unions too small? *Review of Economics and Statistics*, 93, 1343-1359.
Wilcox, J. A. (2009). *Characteristics of Credit Union Mergers: 1984 — 2008*. Filene Research Institute, Madison, WI.

APPENDIX

TABLE 1
ACQUIRING CREDIT UNIONS

Year	Acquirer	Location	TA (mm)	Potential Matches	Acquired	Location	TA (mm)	Type
2018	SRP	North Augusta, SC	$858	531	Southern Bank	Sardis, GA	$81	SNM
2018	Achieva	Dunedin, FL	$1,535	531	Preferred Community	Ft. Myers, FL	$118	SNM
2018	Superior Choice	Superior, WI	$384	1026	Dairyland State Bank	Bruce, WI	$79	SNM
2018	Evansville Teachers	Evansville, IN	$1,464	531	American Founders Bank	Louisville, KY	$113	SNM
2018	LGE Community	Marietta, GA	$1,244	531	Georgia Heritage Bank	Dallas, GA	$95	SNM
2018	Credit Union ONE	Ferndale, MI	$1,145	531	Hantz Bank	Southfield, MI	$223	SNM
2018	Georgia's Own	Atlanta, GA	$2,300	501	State Bank of Georgia	Fayetteville, GA	$101	SNM
2018	Lake Michigan	Grand Rapids, MI	$5,200	501	Encore Bank	Naples, FL	$400	SNM
2017	Self-Help Federal	Durham, NC	$2,527	481	Seaway Bank	Chicago, IL	$298	SNM
2017	IBM Southeast	Delray Beach, FL	$1,090	481	Mackinac Savings	Boynton Beach, FL	$110	FSB
2017	Advia	Parchment, MI	$1,100	501	Peoples Bank	Elkhorn, WI	$227	SNM
2017	Family Security	Decatur, AL	$652	481	Bank of Pine Hill	Pine Hill, AL	$20	SNM
2016	Royal	Eau Clare, WI	$1,700	481	Capital Bank	St. Paul, MN	$35	SNM
2016	Advia	Parchment, MI	$1,100	481	Mid America Bank	Janesville, WI	$81	SNM
2016	Avadian	Birmingham, AL	$645	481	American Bank	Huntsville, AL	$107	FSB
2015	Five Star	Dothan, AL	$377	1039	Farmers State Bank	Lumpkin, GA	$45	SNM
2015	Achieva	Dunedin, FL	$1,400	450	Calusa Bank	Punta Gorda, FL	$167	SM
2014	Five Star	Dothan, AL	$377	1029	Flint River National	Camilla, GA	$19	N

2014	Landmark	New Berlin, WI	$3,000	405	Hartford Savings	Hartford, WI	$175	SSB
2013	Self-Help Federal	Durham, NC	$637	1014	Second Federal S&L	Chicago, IL	$191	S&L
2013	Municipal	Baltimore, MD	$1,100	405	Advance Mutual Savings	Baltimore, MD	$54	FSB
2012	GFA Federal	Gardner, MA	$465	1000	Monadnock Community	Peterborough, NH	$83	FSB
2012	United Federal	St. Joseph, MI	$2,000	369	Griffith Savings	Griffith, IN	$85	SSB

SNM= state chartered nonmember; FSB= federal savings bank; SM= state chartered member;

N= national bank; SSB = state chartered savings bank; S&L= savings and loan association.

TA = total assets; Year = year deal closed

TABLE 2
ACQUIRING CREDIT UNIONS (CUA) AND MATCHED INSTITUTIONS' (CUN) CAMEL RATIOS

Year	Acquirer	Location	Capital Adequacy		Asset Quality		Management		Earnings		Liquidity	
			CUA	CUN	CUA	CUN	CUA	CUN	CUA	CUN	CUA	CUN
2018	SRP	North Augusta, SC	10.71%	10.94%	0.60%	0.50%	16.19%	8.11%	1.76%	0.75%	14.55%	11.04%
2018	Achieva	Dunedin, FL	11.56%	10.94%	0.73%	0.50%	9.56%	8.11%	1.01%	0.75%	14.62%	11.04%
2018	Superior Choice	Superior, WI	11.08%	11.10%	0.34%	0.53%	11.28%	4.31%	1.25%	0.52%	12.78%	14.62%
2018	Evansville Teachers	Evansville, IN	9.95%	10.94%	26.00%	0.50%	15.46%	8.11%	1.63%	0.75%	10.82%	11.04%
2018	LGE Community	Marietta, GA	11.60%	10.94%	0.30%	0.50%	8.43%	8.11%	1.00%	0.75%	5.41%	11.04%
2018	Credit Union ONE	Ferndale, MI	8.90%	10.94%	0.80%	0.50%	6.17%	8.11%	0.55%	0.75%	6.42%	11.04%
2018	Georgia's Own	Atlanta, GA	10.68%	10.88%	0.45%	0.47%	3.62%	8.07%	0.39%	0.73%	6.49%	12.11%
2018	Lake Michigan	Grand Rapids, MI	11.63%	10.88%	0.04%	0.47%	15.34%	8.07%	1.91%	0.73%	17.38%	12.11%
2017	Self-Help Federal	Durham, NC	18.29%	10.97%	0.23%	0.42%	28.81%	7.79%	1.57%	0.76%	18.66%	12.57%
2017	IBM Southeast	Delray Beach, FL	10.72%	10.97%	0.43%	0.42%	11.63%	7.79%	1.12%	0.76%	17.23%	12.57%
2017	Advia	Parchment, MI	11.69%	10.88%	0.61%	0.47%	7.67%	8.07%	0.91%	0.73%	4.91%	12.11%
2017	Family Security	Decatur, AL	13.91%	10.97%	0.42%	0.42%	8.40%	7.79%	1.16%	0.76%	15.75%	12.57%
2016	Royal	Eau Clare, WI	11.19%	10.97%	0.33%	0.42%	9.98%	7.79%	1.18%	0.76%	6.10%	12.57%
2016	Advia	Parchment, MI	12.48%	10.97%	0.72%	0.42%	7.89%	7.79%	0.97%	0.76%	8.45%	12.57%
2016	Avadian	Birmingham, AL	11.90%	10.97%	0.51%	0.42%	4.79%	7.79%	0.54%	0.76%	12.05%	12.57%
2015	Five Star	Dothan, AL	9.37%	10.93%	0.24%	0.45%	13.82%	5.50%	1.37%	0.59%	9.41%	14.27%
2015	Achieva	Dunedin, FL	11.36%	10.97%	0.57%	0.45%	10.07%	8.42%	1.15%	0.84%	10.37%	12.23%
2014	Five Star	Dothan, AL	10.05%	10.74%	0.39%	0.52%	12.73%	5.59%	1.19%	0.56%	10.85%	15.15%
2014	Landmark	New Berlin, WI	8.05%	10.34%	0.60%	0.71%	15.07%	9.56%	1.28%	0.93%	8.27%	15.88%
2013	Self-Help Federal	Durham, NC	14.57%	10.39%	0.10%	0.81%	31.48%	4.97%	0.67%	0.52%	36.29%	17.86%
2013	Municipal	Baltimore, MD	9.96%	10.34%	0.84%	0.71%	3.58%	9.56%	0.39%	0.93%	7.46%	15.88%
2012	GFA Federal	Gardner, MA	12.04%	10.27%	0.47%	0.95%	4.78%	3.28%	0.60%	0.32%	12.49%	17.53%
2012	United Federal	St. Joseph, MI	10.95%	9.92%	1.02%	1.10%	8.06%	6.93%	0.93%	0.57%	4.01%	14.75%
means			11.42%	10.79%	1.60%	0.55%	11.51%	7.38%	1.07%	0.71%	11.77%	13.27%
medians			11.19%	10.94%	0.47%	0.50%	9.98%	7.79%	1.12%	0.75%	10.82%	12.57%
standard deviations			2.03%	0.30%	5.21%	0.18%	6.86%	1.54%	0.41%	0.13%	6.69%	2.02%

NOTE: Ratios taken from NCUA Financial Performance Reports and given Peer Averages

TABLE 3
ACQUIRED BANKS (BSA) AND MATCHED INSTITUTIONS' (BSN) CAMEL RATIOS

Year	Acquired	Location	Size (mm)	NO.	Capital Adequacy		Asset Quality		Management		Earnings		Liquidity	
					BSA	BSN	BSA	BSN	BSA	BSN	BSA	BSN	BSA	BSN
2018	Southern Bank	Georgia	$65-97	10	11.31%	10.47%	0.15%	0.05%	1.95%	5.62%	0.22%	0.59%	33.82%	33.35%
2018	Preferred Community	Florida	$94-141	10	11.39%	10.38%	-0.01%	0.07%	3.17%	6.53%	0.36%	0.68%	25.02%	33.67%
2018	Dairyland State Bank	Wisconsin	$63-95	10	10.33%	11.29%	0.07%	0.20%	7.00%	8.59%	0.72%	0.97%	28.91%	27.14%
2018	American Founders Bank	Kentucky	$91-136	10	10.74%	14.95%	0.09%	0.09%	-0.05%	7.31%	-0.01%	1.09%	11.32%	36.74%
2018	Georgia Heritage Bank	Georgia	$76-114	10	11.70%	12.46%	0.49%	0.01%	39.70%	0.90%	4.65%	0.11%	22.56%	34.37%
2018	Hantz Bank	Michigan	$178-267	10	12.49%	10.18%	0.06%	0.06%	8.11%	9.05%	1.01%	0.92%	13.23%	23.64%
2018	State Bank of Georgia	Georgia	$77-115	10	14.60%	11.71%	-0.05%	-0.14%	5.62%	3.25%	0.82%	0.38%	23.85%	39.60%
2018	Encore Bank	Florida	$320-480	10	9.52%	9.23%	-0.01%	0.02%	4.67%	9.20%	0.44%	0.85%	21.29%	31.31%
2017	Seaway Bank	Illinois	$238-357	10	7.83%	11.81%	5.47%	0.12%	-39.57%	10.44%	-3.10%	1.23%	27.83%	35.25%
2017	Mackinac Savings	Florida	$88-132	10	8.31%	9.76%	-0.36%	0.08%	2.51%	4.64%	0.21%	0.45%	46.25%	34.36%
2017	Peoples Bank	Wisconsin	$182-272	10	10.72%	14.50%	0.00%	0.16%	7.89%	9.61%	0.85%	1.39%	28.04%	25.93%
2017	Bank of Pine Hill	Alabama	$10-30	2	12.93%	11.49%	-0.86%	0.13%	-2.68%	5.41%	-0.35%	0.62%	75.87%	41.94%
2016	Capital Bank	Minnesota	$28-42	10	13.27%	10.31%	0.05%	0.22%	5.05%	6.01%	0.67%	0.62%	44.71%	50.67%
2016	Mid America Bank	Wisconsin	$65-97	10	11.33%	12.76%	0.74%	0.27%	-1.14%	10.06%	-0.13%	1.28%	24.58%	39.72%
2016	American Bank	Alabama	$86-128	10	8.15%	12.59%	1.06%	0.12%	-16.84%	4.70%	-1.37%	0.59%	13.65%	42.52%
2015	Farmers State Bank	Georgia	$36-54	9	4.09%	10.64%	0.68%	0.19%	-15.38%	4.40%	-0.63%	0.47%	62.42%	42.00%
2015	Calusa Bank	Florida	$134-200	10	10.28%	10.46%	0.66%	0.66%	2.44%	5.82%	0.25%	0.61%	20.82%	35.69%
2014	Flint River National	Georgia	$10-30	7	6.93%	12.88%	-0.02%	0.32%	-32.48%	0.09%	-2.25%	0.01%	40.72%	49.67%
2014	Hartford Savings	Wisconsin	$140-210	10	10.03%	10.95%	1.35%	1.06%	-7.42%	5.37%	-0.74%	0.59%	26.57%	29.22%
2013	Second Federal S&L	Illinois	$153-229	6	2.05%	8.79%	2.17%	2.64%	-144.99%	-15.96%	-2.97%	-1.40%	15.04%	26.60%
2013	Advance Mutual Savings	Maryland	$40-80	7	9.58%	24.69%	0.38%	0.71%	0.91%	2.77%	0.09%	0.68%	13.69%	25.97%
2012	Monadnock Community	Massachusetts**	$66-100	7	9.36%	10.94%	1.16%	0.33%	-13.33%	0.84%	-1.25%	0.09%	33.97%	28.68%
2012	Griffith Savings	Indiana	$68-102	6	7.48%	10.34%	2.03%	0.59%	-26.20%	8.69%	-1.96%	0.90%	16.77%	20.24%
	means			8.87	9.76%	11.89%	0.67%	0.35%	-9.18%	4.93%	-0.19%	0.60%	29.17%	34.27%
	medians			10	10.28%	10.95%	0.15%	0.16%	0.91%	5.62%	0.09%	0.62%	25.02%	34.36%
	standard deviations			2	2.80%	3.11%	1.24%	0.56%	32.98%	5.33%	1.57%	0.55%	15.68%	7.76%

* tried surrounding area and expanded asset size perimeters; found closest match was Mississippi (zip code 39301) with size >$264mm

** only one representative match found in New Hampshire; as Massachusetts credit union was crossing state lines to NH, found remaining matching in MA

TABLE 4
ACQUIRING CREDIT UNION (CUA) VS. REPRESENTATIVE MATCH (CUN) WSRT

Year	Acquirer	Capital Adequacy a-r	Asset Quality a-r	Management a-r	Earnings a-r	Liquidity a-r
2018	SRP	-0.23%	0.10%	8.08%	1.01%	3.51%
2018	Achieva	0.62%	0.23%	1.45%	0.26%	3.58%
2018	Superior Choice	-0.02%	-0.19%	6.97%	0.73%	-1.84%
2018	Evansville Teachers	-0.99%	25.50%	7.36%	0.88%	-0.22%
2018	LGE Community	0.66%	-0.20%	0.32%	0.25%	-5.63%
2018	Credit Union ONE	-2.04%	0.30%	-1.94%	-0.20%	-4.62%
2018	Georgia's Own	-0.20%	-0.02%	-4.45%	-0.34%	-5.62%
2018	Lake Michigan	0.75%	-0.43%	7.27%	1.18%	5.27%
2017	Self-Help Federal	7.32%	-0.19%	21.02%	0.81%	6.09%
2017	IBM Southeast	-0.25%	0.01%	3.84%	0.36%	4.66%
2017	Advia	0.81%	0.14%	-0.40%	0.18%	-7.20%
2017	Family Security	2.94%	0.00%	0.61%	0.40%	3.18%
2016	Royal	0.22%	-0.09%	2.19%	0.42%	-6.47%
2016	Advia	1.51%	0.30%	0.09%	0.21%	-4.12%
2016	Avadian	0.93%	0.09%	-3.00%	-0.22%	-0.52%
2015	Five Star	-1.56%	-0.21%	8.32%	0.78%	-4.86%
2015	Achieva	0.39%	0.12%	1.65%	0.31%	-1.86%
2014	Five Star	-0.69%	-0.13%	7.14%	0.63%	-4.30%
2014	Landmark	-2.29%	-0.11%	5.51%	0.35%	-7.61%
2013	Self-Help Federal	4.18%	-0.71%	26.52%	0.15%	18.43%
2013	Municipal	-0.38%	0.13%	-5.98%	-0.54%	-8.42%
2012	GFA Federal	1.77%	-0.48%	1.51%	0.28%	-5.04%
2012	United Federal	1.03%	-0.08%	1.12%	0.36%	-10.74%
All 23 acquirers	**Mean (a-r)**	0.63%	1.05%	4.14%	0.36%	-1.49%
	Medians	0.39%	-0.02%	1.65%	0.35%	-4.12%
	Standard Deviation (a-r)	2.06%	5.34%	7.44%	0.43%	6.48%
	Wilcoxon P-Value (signed rank test)	0.230	0.673	0.009	0.002	0.097
19 acquirers with duplicates removed	**Mean (a-r)**	0.38%	1.27%	3.41%	0.33%	-1.68%
	Medians	0.22%	-0.02%	1.65%	0.35%	-4.12%
	Standard Deviation (a-r)	1.55%	5.87%	6.99%	0.45%	6.65%
	Wilcoxon P-Value (signed rank test)	0.365	0.632	0.028	0.007	0.087

TABLE 5
ACQUIRED BANKS (BSA) VS.MATCHED INSTITUTIONS' (BSN) WSRT

Acquired	Capital Adequacy a-r	Asset Quality a-r	Managt. a-r	Earnings a-r	Liquidity a-r
Southern Bank	0.84%	0.11%	-3.67%	-0.37%	0.47%
Preferred Community	1.02%	-0.08%	-3.36%	-0.32%	-8.65%
Dairyland State Bank	-0.96%	-0.13%	-1.59%	-0.25%	1.76%
American Founders Bank	-4.21%	0.00%	-7.36%	-1.10%	-25.42%
Georgia Heritage Bank	-0.76%	0.48%	38.80%	4.53%	-11.81%
Hantz Bank	2.31%	-0.01%	-0.94%	0.09%	-10.41%
State Bank of Georgia	2.90%	0.08%	2.37%	0.44%	-15.76%
Encore Bank	0.29%	-0.03%	-4.53%	-0.40%	-10.02%
Seaway Bank	-3.98%	5.35%	-50.01%	-4.33%	-7.43%
Mackinac Savings	-1.45%	-0.45%	-2.13%	-0.24%	11.90%
Peoples Bank	-3.77%	-0.16%	-1.72%	-0.55%	2.11%
Bank of Pine Hill	1.44%	-1.00%	-8.09%	-0.97%	33.94%
Capital Bank	2.96%	-0.16%	-0.97%	0.05%	-5.97%
Mid America Bank	-1.43%	0.47%	-11.20%	-1.41%	-15.13%
American Bank	-4.44%	0.93%	-21.54%	-1.96%	-28.87%
Farmers State Bank	-6.55%	0.50%	-19.78%	-1.10%	20.42%
Calusa Bank	-0.18%	0.01%	-3.37%	-0.36%	-14.87%
Flint River National	-5.95%	-0.34%	-32.57%	-2.26%	-8.95%
Hartford Savings	-0.93%	0.29%	-12.79%	-1.33%	-2.65%
Second Federal S&L	-6.74%	-0.46%	-129.03%	-1.57%	-11.57%
Advance Mutual Savings	-15.11%	-0.33%	-1.86%	-0.60%	-12.28%
Monadnock Community	-1.59%	0.82%	-14.17%	-1.34%	5.29%
Griffith Savings	-2.86%	1.45%	-34.90%	-2.86%	-3.47%
Means (a-r)	-2.14%	0.32%	-14.11%	-0.79%	-5.10%
Medians (a-r)	-1.43%	0.07%	-4.53%	-0.60%	-8.65%
Stand. deviations (a-r)	4.03%	1.21%	30.08%	1.58%	13.85%
Wilcoxon P_Value (signed rank test)	0.023	0.475	0.001	0.002	0.040

TABLE A
ACQUIRING CREDIT UNIONS

Year	Acquirer	Location	TA (mm)	Acquired	Location	TA (mm)
2019	Suncoast	Tampa. FL	$ 10,400	Apollo Bank	Miami, FL	$ 747
2019	Collins Community	Cedar Rapids, IA	$ 1,200	First Savanna	Savanna, Il	$ 12
2019	First Southern Fin.	Bartlett, TN	$ 589	WinFirst Financial	Winchester, KY	$ 138
2019	Three Rivers	Fort Wayne, IN	$ 1,400	West End Bank	Richmond, IN	$ 299
2019	Corporate America	Elgin, IL	$ 607	Ben Franklin Bank	Arlington Heights, IL	$ 93
2019	Power Financial	Penbroke Pines, FL	$ 655	TransCapital Bank	Sunrise, FL	$ 204
2019	MidFlorida	Lakeland, FL	$ 3,500	Community Bank & Trust	Ocala, FL	$ 730
2019	Verve	Oshkosh, WI	$ 936	South Central Bank	Chicago, IL	$ 300
2019	Arizona Federal	Phoenix	$ 1,700	Pinnacle Bank	Scottsville, AZ	$ 236
2019	Elevations	Boulder, CO	$ 2,100	Cache Bank & Trust	Greeley, CO	$ 121
2019	Sound	Tacoma, WA	$ 1,519	Bank of Washington	Seattle, WA	$ 206
2019	Advia	Parchment, MI	$ 1,700	Golden Eagle Bank	Woodstock, IL	$ 155
2019	VyStar	Jacksonville, FL	$ 9,056	Citizens State Bank	Perry, FL	$ 280
2019	Fairwinds	Orlando, FL	$ 2,320	Friend Bank	New Smyrna Beach	$ 95
2019	Teachers	South Bend, IN	$ 3,172	New Bancorp	New Buffalo, MI	$ 118
2019	Central Florida Ed.	Lake Mary, FL	$ 1,600	Fidelity Bank	Merritt Island, FL	$ 174
2019	First Commerce	Tallahasse, FL	$ 620	Citizens Bank	Nashville, GA	$ 248
2019	MidOregon	Pineville, OR	$ 289	High Desert Bank	Bend, OR	$ 20

TA = total assets; Year = year of acquisition