Credit Unions' Rising Share of Small Business Loans

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Credit unions are increasing their share of small business loans. Over the period of 2010-2014, business loans from credit unions increased by 39.2 percent while their assets increased by 22.7 percent. Community banks reduced their business lending by 5.6 percent over the same period. A mixed cross-section/time-series (panel) model is developed to identify significant determinants of credit union business loans. Business loans as a proportion of assets are a function of asset percentages of liquidity, mortgage loans, and consumer loans, as well as the ratio of total loans to share deposits and a time trend. Average deposits per competitor has a positive, statistically significant coefficient. In markets where their competitors are larger, credit unions are supplying more credit to business.

INTRODUCTION

The supply of US business credit to small business is becoming more dependent on credit unions. An NFIB Institute survey of 850 business owners (employing fewer than 250 people) reports that small firms are switching from banks to other institutions as their primary source for financial services and "the most common of these (switches) is (to) a credit union" (NFIB 2012, p. 58). Credit unions have become the primary institution and supplier of credit for 7 percent of the respondents, an increase from just 3 percent since the 2009 recession. Thirteen percent of the small businesses maintain their line of credit with a credit union and 8 percent have their largest loan from a credit union (NFIB, 2012, pp. 55- 57).

Small businesses are the primary source for much of the economic growth and innovation in the US economy (Mills and McCarthy, 2014). The meager supply of credit to small and medium sized business has been established in a multitude of studies over the past several decades. Small firms face serious challenges searching for credit during recessions and economic recovery (Dunkelberg and Wade, NFIB, 2014, December). Twenty years ago, Bernanke, Gertler, and Gilchrist (1996) documented lenders' flight to quality and the amplification of shocks when the supply of credit declines and the US economy deteriorates.

For European firms, Klein (2014) shows that the lack of access to credit has caused small and medium sized firms to reduce their output and investment in new plants and equipment. European countries with a greater percentage of small and medium sized firms have been slower to recover from the recent global financial crisis.

Large firms continue to rely on large financial institutions to supply short-term credit and working capital; the current low US interest rates and the increasing rates (Board of Governors of the Federal Reserve, 2015a), have encouraged firms that have the financial capacity to substitute long-term fixed rate debt in place of variable rate, short-term credit. Between 2010 and 2014, community banks reduced their business lending, which is mainly to small firms, by 5.6 percent. Mills and McCarthy (2014, Figure 28)

discuss the outstanding amount of small business debt capital that does not come from bank or credit card loans.

Wilcox (2011) examined banks' and credit unions' lending trends to small firms, via an extensive database for 1986-2010. He shows that "small business loans under $1 million by credit unions have risen substantially over the last decade." Ely and Robinson (2009) argue that consolidation of commercial banks has provided an opportunity for credit unions to expand their business lending. Credit unions are replacing community banks' small business lending as many of them have become acquired by large banks. Unless they qualify for an exception, credit unions are only permitted to lend a maximum of 12.25 percent of their assets to business.

The focus of this study is the supply of business credit from 120 credit unions defined to be significant business lenders across 2007 - 2014. Each of the 120 loaned at least 10 percent of their assets to business during the time range. Virtually all of the credit union business loans are to small business.

The study examines four research questions:

(i) Determinants of business lending by credit unions before and after the recent financial crisis and recession;
(ii) Potential effects of differences in financial risks and returns among credit unions that are significant business lenders;
(iii) Extent to which competition (measured by number and size of banks and savings institutions) has affected credit unions' business lending;
(iv) Effects of lending markets' economic environment on credit unions' business lending.

These questions are examined in a dynamic context. The credit union lending environment is discussed in Section ll. The data and methodology are delineated in Section Ill. Section IV provides empirical panel models. The conclusions and policy considerations follow in Section V.

CREDIT UNION LENDING ENVIRONMENT

Environment

Credit union activities continue to expand as their memberships grow and the demand for credit union products increases. The Credit Union Membership Access Act of 1998 permitted the National Credit Union Administration to expand credit unions' common bond requirement. Broadening credit union membership affinities and reducing their geographic service restrictions have enabled business loan and membership growth.

American credit unions now enroll more than 100 million memberships. Table 1 shows the rapid growth in credit union balance sheet accounts over the past 25 years, while the number of institutions has contracted by almost two-thirds. Credit union assets, loans, and savings all have increased by approximately 300 percent.

The size distribution for credit unions at year-end 2014 in Table 2 is highly skewed (Credit Union National Association, 2014). Of the 6,513 credit unions, 229 (3.5 percent) have assets above $1 billion and hold 54.6 percent of the industry's total assets. The 6,284 credit unions with assets below $1 billion are the most direct competitors with community commercial banks, with assets under $1 billion. At the same time, 5,053 of the 5,607 commercial banks had assets under $1 billion. The 554 larger banks held 92.2 percent of bank total assets.

The 2014 credit union asset and loan compositions and recent growth appear in Table 3. Total loans are 58.5 percent of insured credit union assets; column (5) shows that business loans are 7.3 percent of total loans; real estate loans are 51.1 percent of loans; and auto loans are 32.3 percent of loans. Between 2010 and 2014 business loans increased 39.2 percent, more rapidly than all other loan categories except new and used auto loans, which increased by 40.1 percent (National Credit Union Administration, 2014a, PACA Facts Data, December).

Competition Among Credit Unions, Banks and S&Ls

Over the past three decades, the assets of insured depository institutions with which credit unions compete have become considerably more concentrated. At the end of 2014, the 91 commercial banks with assets above $10 billion comprised 87.2 percent of the industry's assets. Twenty-five years earlier, the 49 banks with assets above $10 billion had 39.4 percent of industry assets.

Although community banks make 26.4 percent of their loans to small businesses, larger banks make only 10.7 percent of these loans (FDIC, June 30, 2012, Report of Condition Supplement). Moreover, community commercial banks reduced their business lending by 5.6 percent since 2010. Mills and McCarthy (2014) and the NFIB study (NFIB, 2012) demonstrate the trend that more small firms are depending on credit unions as their main supplier of financial services.

The Riegle-Neal Interstate Banking Act of 1994 and the Gramm-Bliley-Leach Act of 1999 allowed commercial banks to expand their geographic and product markets, respectively. Banks' total loans grew from $811 billion to $6.6 trillion between 1980 to 2014, while the percentage of their loans to business declined from 35 to 22 percent, and their real estate lending, including home equity loans, increased to 49 percent from 28 percent of loans. Consumer loan percentages remained stagnant, representing approximately 20 percent of banks' loans. The regulations and legislation that allowed banks to acquire others across state lines and to offer investment banking and insurance products provide more potential for credit unions to serve small business.

Savings and loan associations were permitted to allocate up to 5 percent of their assets to commercial loans via the Depository Institutions Deregulation and Monetary Control Act of 1980. The Garn-St. Germain Act (1982) increased this percentage to 10 percent; and legislation in 1996 extended the percentage to 20 percent as long as the additional loans are extended to small business. Savings institutions have continued to focus on mortgage lending; 69.8 percent of their loans are mortgages and only 9.2 percent of their loans are commercial and industrial loans (Federal Deposit Insurance Corporation, 2015).

Competitive Markets

The asset concentrations and competitive environments for banks, savings institutions, and credit unions are important for defining business lending markets. Counties are assumed to define small business lending markets.

The main competitors for credit unions are community banks and savings institutions with branches within a credit union's headquarters county. This has been the traditional market definition for small and medium sized insured depository institutions by the US Department of Justice and the federal financial regulators, evaluating merger applications and de novo entries.

Growth and Consolidation

Wilcox (2005) argued a decade ago that "substantial cost advantages for larger credit unions and vigorous competition among depositories of all kind provides powerful incentives for the credit union industry to consolidate." Anderson and Liu (2013, p. 7) point out the similar trends between credit unions and banks over the past 15 years. "The number of banks has decreased 30 percent, while total assets have increased 140 percent. The number of credit unions has decreased 36 percent, while assets have increased 160 percent" (2013, p. 7).

Consolidation is not a unique phenomenon for American credit unions. Between 2007 and 2011, the number of credit unions declined in Australia, Canada, Ireland, New Zealand, South Korea, and the UK. Among these six countries, the decline was 16 percent, just slightly above the 14 percent decline for the US (Prieg and Greenham (2012, Table 6).

Business Lending

Former Senator Mark Udall (CO-D) reintroduced the Small Business Lending Enhancement Act (9509, March 8, 2011) to the 112th Congress to raise the percentage of assets a credit union may lend to business from 12.25 to 27.50.The bill was not enacted and following Udall's 2014 defeat for reelection,

the legislation has not been reconsidered. At year-end 2012, none of the largest 10 credit unions was lending as much as 3 percent of their assets to business (Calvo et. al., 2013, Table 3).

The asset and business loan size distributions for the significant credit union business lenders in Tables 2 and 3 show that more than half of the institutions have assets between $50 and $500 million. These are within the size range that competes with community commercial banks (with assets below $1 billion).

Consumer Lending

Consumer lending is a critical aspect of the loan portfolio for most credit unions. Table 4 shows the trends and distributions of total loans for the 120 credit unions that loaned at least 10 percent of their assets to business between 2007 and 2014. These distributions are quite different from distributions for all credit unions (Table 3).

Consumer loans include: auto, credit card, student, and other consumer loans. For the significant credit union business lenders, their consumer loans as a percentage of assets have hardly changed since 2007 while their business loans percentage increased from 10.56 to 18.09 percent. Since each mortgage loan is relatively large, these loans represent a large percentage of total loans. The trend for these credit unions has been to reallocate their loan portfolios to increase business loans (from 11 to 18 percent of total loans) and reduce auto loans (from 29 to 25 percent of total loans) and mortgage loans (from 53 to 48 percent of total loans) between 2007 and 2014.

Economies of Scale and Supply of Business Loans

Economies and potential economies of scale for credit union products are significant determinants of their supply of business loans. The overwhelming evidence, beginning with the studies by Bell and Murphy (1968), Benston (1972), Flannery (1974), and Benston, Hanweck, and Humphrey (1982), through the recent studies by Wheelock and Wilson (2011) and Hughes and Mester (2013), is that economies of scale are pervasive for insured depository institutions, regardless of the sophisticated or simple cost or production model. The exceptions appear to be the largest, commercial bank holding companies, offering investment and insurance products.

Wheelock and Wilson (2011) estimate a sophisticated log-linear model to determine credit unions' potential economies of scale for 1989 through 2006. That study is particularly relevant to the current study, which employs time series data immediately following their data set. They argued that most credit unions are too small to benefit fully from their potential economies of scale. Bauer and her colleagues (2008, 2009) study the gains for credit union performance during the same period. The growth and consolidation of the industry since 2006 should allow credit unions to realize some of the potential economies during and beyond the current study.

DATA AND METHODOLOGY

Data and Financial Characteristics

The data set for this study is 120 federally insured credit unions each of which loaned at least 10 percent of their assets to business for at least one year between 2007 and 2014. By 2014, 8 of the 120 credit unions ceased to operate as separate institutions. The variables are defined in the Glossary.

Annual balance sheet and income statement data are collected from the National Credit

Union Administration "5300 Call Report Aggregate Financial Performance Reports (FPRs)." These credit unions' characteristics are provided in Table 4. The means and medians are quite similar, but the averages and the standard deviations show the considerable skew across asset and loan amounts.

For 2014, the median and mean asset sizes are $222 million and $625 million, respectively, with a standard deviation of $896 million. Allowing for inflation and normal asset growth, the size characteristics are similar for the previous years. The 10 largest credit unions have a mean (median) asset size of $15 billion ($9 billion).

Across 2007 — 2014, the credit unions have increased their proportion of loans allocated to business, reduced their mortgage and auto loans, and increased their asset liquidity. Their percentage of assets allocated to total loans declined from 85 percent in 2007 to 72 percent in 2014. These institutions increased their asset liquidity between 2007 and 2014 while interest rates on government securities and loans remained low.

Their solvency risk — measured by net worth to assets — decreased during the financial crisis but has returned to averages before the crisis. Before the financial crisis, their net worth as a ratio to total assets was above 11 percent. It declined to 10.25 percent for 2009 and has returned to exceed 11 percent. By 2011 the credit unions' net income ratios to assets and net worth recovered to their 2007 levels. The net income ratio to assets for 2012-2014 exceeds the 2007 ratio. As expected, both net income ratios were negative for 2009. As a ratio to net worth, net income for 2011 and 2012 returned to the 2007 ratio of 0.05 percent and increased to 0.06 for 2013 and 2014.

The link between credit unions' share deposits and loans is unique among insured depository institutions because of their membership provisions. Loans as a ratio to share deposits measures how the credit unions are deploying their members' funds to serve member borrowers. The percentage of share deposits loaned declined by approximately 15 percentage points over the 2007-2014 period.

Economic and Competitive Environments

County unemployment represents credit unions' economic environment. The median population of these counties is 425,363 (2010 US Census). The unemployment rates appear to track the national rates before, during, and following the 2009 recession and the financial crisis.

The competitive environment for the credit union business lenders is represented by the number of commercial banks and savings institutions and branches operating within the same county, aggregate deposits for these institutions, and deposits per competitor and per branch. These measures are collected from the annual June 30 FDIC Summary of Deposits, which are only collected with midyear Reports of Income and Condition.

Estimation

A mixed cross-section/time-series (panel) model among the 120 credit unions and across 2007 — 2014 provides parameter estimates to test relationships among credit union business lending, and asset categories, risks, returns, and competition in their markets. EVIEWS8 (IHS Global Inc., 2013) is employed to estimate models. The panel analysis takes account of variations for the estimated parameters and standard errors among the credit unions that form the cross-sections (N=112) operating in each period and the effects across time (T=8 years), estimated across N x T = 896 observations.

The analysis provides robust tests for structure and performance factors that might influence the proportion of assets that are credit union business loans. The institutions' structure and performance factors include:

Competition from banks and savings institutions in their lending markets;
Lending markets' economic environment;
Financial risks and returns;
Asset compositions; and
Effects of the financial crisis and the 2009 recession.

BUSINESS LOAN MODELS

Time-series/cross-section regression models have been tested to explain the proportion of assets that credit unions allocate to business loans (BLTA). The most interesting cases are summarized in Table 5, which provides t-statistics for coefficients as well as other test statistics for each equation.

Criteria

The panel models are developed for three purposes: (1) to test the factors and issues that are hypothesized in the literature to influence BLTA; (2) to identify explanatory variables whose coefficients are statistically significantly different from zero; and (3) to specify a modest number of explanatory variables that are not highly correlated and that explain a high percentage of the variance of BLTA. Various combinations of the important variables are tested to examine the importance of particular variables. One example is the potential role of institution size in business lending.

Preferred Models

Several models in Table 5 satisfy these criteria, but models 17 and 19 are superior. More detailed statistical characteristics for these two cases appear in Table 6. The coefficients for mortgages (MLTA), consumer loans (CONSTA), asset liquidity (CINVTA), total loans to share deposits (LNSD), and TIME are statistically significantly different from zero at 0.0000 probability level. Contrasting models 17 and 19 among these 5 variables, one (four) coefficients' t-statistics in model 17 (19) are slightly higher.

Models 17 and 19 have F-statistics of 172.14 and 145.70, respectively, indicating the models' strong explanatory power. The Durbin-Watson statistics are 1.86 and 1.88, respectively, indicating little autocorrelation in each. The adjusted R-square for each model is 0.48.

An R-square of 0.48 is quite reasonable, if not high, to explain BLTA. Generally, cross-section models have low R-square values, and time-series models have high R-square values, provided the autocorrelation is strong. The 15 to 1 ratio of cross-sections to time series and the autocorrelation would not appear to compensate for the variations among the cross-sections.

Business lending is hardly affected by credit union size (total assets). Models 1-16, in the top panel of Table 5, consistently show that total assets is not a dominant variable to explain business loans as a proportion of total assets. Models 21 — 23 test additional factors that are hypothesized to explain BLTA. Models 5, 8, and 24 — 26 test the impacts of deleting one of the significant asset factors (from model 17) to explain BLTA. Models 3-8, 10, 13 and 14 test impacts of DEPCOMP (deposits per competitor). Each of these models is statistically inferior to model 17.

The ratio of loans to share deposits (LNSD) links credit unions' assets and liabilities among members. If LNSD were excluded from models 17 and 19, the adjusted R-squares decline by 50 percent to 0.23; the coefficients of MLTA and CONSTA become positive, suggesting complements for business loans, and the coefficient of DEPCOMP becomes significant at only the 10 percent probability level. Models 17 and 19 are preferable to the alternatives without LNSD.

Significant Explanatory Variables

CINVTA: [(cash + investments)/total assets]: The percentage of assets loaned to business is larger among the credit unions that have more liquidity. The coefficient of CINVTA is positive and highly significant in every model. CINTVA is an important measure of asset liquidity employed by financial regulators of insured depository institutions; it is a major component of the National Credit Union Administration's CAMEL rating; and it is an important factor in NCUA's risk-based-capital calculations. The consistent, statistical significance of the coefficient of CINVTA and the increase in this ratio across 2007-2012 may explain why the recession binary variable (RECES) does not have a statistically significant coefficient, when tested.

*LNSD***:** The positive, highly significant coefficient of LNSD reflects institutions that lend a higher proportion of their members' share deposits to business. This is consistent with their increasing total loans allocated to business loans as shown by the trends in Tables 3 and 4. The credit unions are increasing business loans more rapidly (Table 3, column 3) than loans and assets, except new plus used auto loans.

MLTA: Credit unions that are significant business lenders, as well as all credit unions (see Table 3), allocate more of their dollar volume loan portfolio to mortgages than other loans. In models 17 and 19, mortgage loans are substitutes for business loans since the coefficient of MLTA is negative. This is not surprising, since mortgages and business loans are generally secured by properties and business assets, respectively.

CONSTA: Credit unions' consumer loans are also a substitute for their business loans. The large, negative t-statistic for the coefficient of CONSTA is surprising because of the heterogeneity among its components. Over the period 2007-2014, the significant business lenders have reallocated their loan portfolios toward business, auto, and credit card lending and away from mortgage lending. Table 3 shows that business loans increased faster (39.2%) than credit card loans (9.9%) and real estate loans (17.6%).

TIME: There is a positive trend in the percentage of assets and loans that credit unions are lending to business. This is reflected by the statistically significant, positive coefficient of TIME, the recent trend for all credit unions shown in Table 3, and the trends in Table 4.

DEPCOMP: The coefficient of DEPCOMP (the distinction between models 17 and 19) measures the impact of the county market average competitor size on credit unions' business lending. In counties where banks and savings institutions are, on average, larger, the credit unions are lending more of their assets to business. This reflects that much of bank lending to small business is from community banks, not large banks (see Mills and McCarthy, 2014). A market with large banks, ceteris paribus, appears to support prospects for greater credit unions' business lending. This is an empirical reflection of the 2011 NFIB survey cited in the Introduction to this study.

Other similar competitive measures provide inferior models. Within the market, deposits per branch, the number of branches, and the number of institutions are less important than DEPCOMP in model 19.

U: County unemployment was expected to have a significant, negative coefficient in business lending models. Apparently unemployment is already represented within other highly significant coefficients — namely the significant, negative coefficients of mortgage loans and consumer loans and the significant positive coefficient of asset liquidity. In Table 5, the t-statistics for the coefficients of U are between 4.92 and 6.37 in models 1- 9, when CONSTA and TREND are excluded.

Correlations

The correlations between business loans as a percentage of assets and its potential explanatory variables, adjusted for size, are surprisingly modest. BLTA is hardly correlated with total assets or among variables with statistically significant coefficients, except for the ratio of loans to share deposits (LNSD), where the correlations range from 0.41 to 0.55. The only other correlations with business loans above 0.30 are for 2007 and 2008 with the consumer loan ratio and for 2007 with mortgage loans (MLTA).

Multicollinearity does not appear to be an impediment to estimating models. Only MLTA and CINVTA are correlated in the 50 percent range; models 4 and 5 and 24 and 26 show that including these variables together is statistically beneficial. Many years ago Ezekiel and Fox (1963, Chapter 12) illustrated how this may occur.

POLICY CONSIDERATIONS AND CONCLUSIONS

Empirical Results

Some of the credit union business loan cross-section/time-series models have strong test statistics. Mortgage loans, consumer loans and asset liquidity, as percentages of assets; the ratio of total loans to share deposits; and a time trend over the eight year period explain much of credit unions' business lending. More credit union business lending occurs in counties where there are, on average, larger competitors. Asset size and unemployment are not critical explanatory variables for BLTA.

Credit unions' size, risk (measured by net worth to assets), returns (measured by returns on assets or equity), and growth (measured by growth of liabilities or assets) do not have coefficients that are statistically significant at a highly critical probability level to explain BLTA. The impact of the recent recession and the financial crisis on business lending appears to be represented within credit unions rising asset liquidity. Credit unions have increased their business lending as substitutes for other lending during the crisis and throughout the 2007-2014 period.

Policy Considerations

This study contributes to policy perspectives for depository institutions and community economic development. Business lending by credit unions is primarily to small businesses, and it is well established that small firms are the engines of economic growth for many aspects of the US economy. Increasing the percentage of total assets that credit unions may lend to business should support local community development.

In counties where there are larger banks, on average, credit unions are supplying more business credit, as shown by the significant, positive coefficient of DEPCOMP. Moreover, credit unions' business lending is expanding and the loans are mainly to small firms, while community banks' business lending has been declining. Nonbusiness credit union lending, represented by their mortgage and consumer lending, are substitutes for their business lending, as shown by the statistically significant, negative coefficients for MLTA and CONSTA, respectively.

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TABLE 1
CREDIT UNION GROWTH 1991 – 2014

YEAR	NUMBER	MEMBERSHIPS	SAVINGS*	LOANS*	ASSETS*
1991	19758	87659446	309	200	341
2014	6513	101460027	971	728	1145
%Δ 1991-2014	*-67%*	*116%*	*314%*	*363%*	*336%*

Source: Credit Union Report Year-End 2014, CUNA, US Credit Union Statistics
*billions of $

TABLE 2
CREDIT UNION SIZE DISTRIBUTION 2014

ASSET SIZE $	Number	% of Total	Million Assets	% of Total Assets
$0 - $1 mill	385	5.9%	185	0.0%
$1 - $5 mill	931	14.3%	2683	0.2%
$5-$10 mill	739	11.3%	5493	0.5%
$10 - $20 mill	917	14.1%	13364	1.2%
$20 - $50 mill	1212	18.6%	39413	3.4%
$50 - $100 mill	787	12.1%	56386	4.9%
$100- $200 mill	589	9.0%	82852	7.2%
$200- $500 mill	491	7.5%	154737	13.5%
$500 - $1 bill	233	3.6%	164226	14.3%
$1 bill +	229	3.5%	625,340	54.6%
TOTAL	6513	100.0%	1,144,680	100.0%

Source: Credit Union Report Year-end, 2014, CUNA, from CU Call Reports

TABLE 3
CREDIT UNION ASSET AND LOAN COMPOSITIONS 2010-2014
(6,273 Federally Insured Credit Unions Reporting)

Account Title	2014 ASSETS	% of 2014 ASSETS	2010 ASSETS	% of 2014 LOANS	% of 2010 LOANS	% Δ 2010-2014
CASH AND EQUIVALENTS	85,776	7.6%	74,429			15.2%
INVESTMENTS	275,867	24.6%	283,918			15.5%
BUSINESS LOANS	51,741	4.6%	37,181	7.3%	6.6%	39.2%
AUTO LOANS	230,036	20.5%	164,213	32.3%	29.1%	40.1%
REAL ESTATE LOANS	364,156	32.5%	309,644	51.1%	54.8%	17.6%
CREDIT CARD LOANS	45,974	4.1%	35,945	6.5%	6.4%	9.9%
OTHER LOANS	20,364	0.7%	17,725	2.9%	3.1%	14.9%
TOTAL LOANS	712,271	58.5%	564,708	100.0%	100.0%	26.1%
TOTAL ASSETS	1,122,183	100.0%	914,341			22.7%

Source: PACA FACTS DATA, National Credit Union Administration, December 2014

TABLE 4
120 CREDIT UNIONS LENDING
(Assets and Loans in Millions of $. Ratios in percentages.)

YEAR	ASSETS (TA)	LOANS (TL)	(CASH+INV)/ ASSETS	BL/ TL	ML / TL	AUTO/TL	CONSUMER/ LOANS	TL/SD	NW/TA	NI/TA	NI/NW
	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN	MEAN
	MEDIAN	MEDIAN	MEDIAN	MEDIAN	MEDIAN	MEDIAN	MEDIAN	MEDIAN	MEDIAN	MEDIAN	MEDIAN
	STD.	STD.	STD.	STD.	STD.	STD.	STD.	STD.	STD.	STD.	STD.
2014	625	452	26.49	18.09	48.32	25.37	32.49	0.77	11.26	0.68	0.04
2014	222	151	24.02	16.84	45.64	26.44	34.02	0.78	10.61	0.65	0.06
2014	896	706	13.49	8.75	19.29	15.29	16.93	0.19	4.01	0.73	0.11
2013	580	399	28.45	18.30	49.72	23.63	30.76	0.76	11.06	0.73	0.07
2013	214	145	27.88	16.91	48.01	23.74	32.83	0.77	10.20	0.64	0.06
2013	817	598	12.60	7.89	18.49	14.11	15.84	0.17	3.78	0.48	0.07
2012	514	379	30.70	15.95	55.50	21.72	28.56	0.84	10.36	0.62	0.05
2012	171	124	29.32	14.89	55.68	20.69	28.65	0.82	9.52	0.70	0.07
2012	736	578	12.67	4.75	15.08	13.96	15.93	0.30	4.13	0.92	0.17
2011	479	358	29.96	15.88	56.03	21.22	28.10	0.85	10.59	0.50	0.05
2011	168	121	28.00	15.02	55.96	20.54	28.25	0.83	9.54	0.54	0.05
2011	674	542	13.02	5.14	14.85	13.48	15.46	0.28	4.37	0.64	0.07
2010	450	346	28.02	14.82	56.19	22.17	28.99	0.87	10.64	0.33	0.03
2010	159	124	26.66	14.59	56.76	20.58	27.55	0.84	9.48	0.38	0.03
2010	608	506	12.96	4.93	15.09	13.67	15.93	0.30	5.11	0.67	0.06
2009	443	352	25.48	13.98	55.25	24.08	30.77	0.91	10.25	-0.06	-0.02
2009	158	125	22.16	13.81	57.05	22.95	28.63	0.87	9.24	0.04	0.00
2009	617	526	12.64	5.64	16.19	14.89	17.08	0.29	3.82	1.01	0.15
2008	460	357	22.08	12.05	54.92	26.34	33.04	0.95	11.06	0.06	0.00
2008	133	125	19.88	12.89	55.73	23.20	30.65	0.94	10.34	0.14	0.01
2008	724	576	13.45	5.46	17.08	16.57	18.71	0.25	3.88	1.21	0.11
2007	385	321	21.98	10.56	53.39	29.10	36.05	0.93	11.61	0.56	0.05
2007	138	106	20.37	11.56	54.35	26.15	32.69	0.92	10.90	0.61	0.05
2007	556	508	13.60	6.06	17.63	17.52	19.74	0.25	3.68	0.54	0.05

Source: National Credit Union Administration, "5300 Call Reports".

TABLE 5
BLTA CS/TS REGRESSION MODELS
(t-statistics for coefficients)

Model	TA	MLTA	CONSTA	CINVTA	LNSD	U	DEPCOMP	TIME	Adjusted R-square	F stat.	DW	OTHERS	*
1	2.61	3.88		8.84	12.25				0.18	52.33	1.66		
2	2.53	3.34		8.00	12.48	3.36			0.19	44.59	1.68		
3	2.53	3.47		8.05	12.49	3.44	-0.97		0.19	37.31	1.68		
4	2.39	-0.12			10.33	4.87	0.37		0.13	29.79	1.64		
5	2.89			7.22	13.29	3.90	-0.27		0.18	41.87	1.69		
6	2.24	3.77		7.89	12.96	3.56	-0.71		0.20	35.55	1.70	-4.52	RECES*
7	1.02	5.66		10.50	14.23	4.52	0.93		0.25	46.54	1.88	-0.01	NWTA
8	1.35	0.67			10.97	5.86	1.90		0.17	46.54	1.74	-6.18	NWTA*
9	1.05	5.85		10.65	14.22	4.59			0.25	54.16	1.87	-9.09	NWTA*
10	0.94	5.37		8.40	14.97	1.65	1.18	11.93	0.29	57.15	1.9		
11	0.97	5.65		8.72	14.95	1.8		11.92	0.29	66.41	1.89		
12	0.99	5.65		8.72	14.94	1.77		11.76	0.29	56.88	1.89	-0.26	NI/TA
13	0.95	5.37		8.39	14.96	1.64	1.16	11.80	0.29	49.95	1.9	-0.09	NI/TA
14	2.11	5.35		8.40	14.96	1.50	1.04	12.14	0.30	50.74	1.9	-2.11	NI*
15	2.17	5.61		8.70	14.95	1.63		12.14	0.30	57.83	1.89	-2.18	NI*
16	-0.06	5.43		8.47	14.93	1.61		11.42	0.29	57.06	1.88	0.99	NW
17		-13.98	-18.17	6.23	22.77			10.89	0.475	172.14	1.86		
18		-14.07	-18.15	5.77	22.78	1.75		10.53	0.476	144.28	1.87		
19		-14.27	-18.36	5.57	22.97		2.74	11.22	0.479	145.70	1.88		
20	-0.96	-14.01	-18.16	6.19	22.71			10.92	0.47	143.59	1.86		
21		-13.93	-18.13	6.24	22.70			9.80	0.47	143.39	1.86	0.52	RECES
22		-13.95	-18.03	6.19	22.56			10.88	0.47	143.20	1.86	-0.26	III+IIL
23		-13.98	-18.10	6.18	22.65			10.87	0.47	143.36	1.86	-0.43	III-IE
24		-17.14	-19.79		22.32			10.52	0.45	197.56	1.79		
25			-12.45	11.11	20.94			13.18	0.37	137.88	1.91		
26	-1.13	-17.18	-19.79		23.29			10.58	0.45	158.35	1.78		
Model	TA	MLTA	CONSTA	CINVTA	LNSD	U	DEPCOMP	TIME	R-square		DW	OTHERS	

TABLE 6
SUPERIOR MODELS
(t statistics in parentheses)

	model 17	model 19
Constant	-0.0030 (-0.47)	-0.0025 (-0.41)
MLTA	-0.2574 (-13.90)	-0.2641 (-14.27)
CONSTA	-0.2737 (-18.17)	-0.2762 (-18.36)
CINVTA	0.0531 (+6.23)	0.0483 (+5.57)
LNSD	0.2801 (+22.77)	0.2822 (+22.97)
TIME	0.0046 (+10.89)	0.0048 (+11.22)
DEPCOMP		0.2741 (+2.74)
Adj. R-squ.	0.475	0.479
F statistic	172.14	145.70
D-W	1.86	1.88

all t-statistics above 3 are significant at the 0.0000 level coefficient of DEPCOMP is significant at the 0.01 level

GLOSSARY AND DEFINITIONS OF VARIABLES

BL- BUSINESS LOANS
TA - TOTAL ASSETS
NW - NET WORTH
CASH - CASH ON HAND
INV - INVESTMENTS (MAINLY US GOVERNMENT SECURITIES)
ML - MORTGAGE LOANS
AUTO - AUTOMOBILE LOANS (NEW AND USED)
CONSTOT - TOTAL CONSUMER LOANS
CARD - CREDIT CARD LOANS
CONSUM - OTHER CONSUMER LOANS (INCLUDING STUDENT LOANS)
LOANS – TOTAL LOANS SD - SHARE DEPOSITS
Ill - INTEREST INCOME FROM INVESTMENTS
IlL- INTEREST INCOME FROM LOANS
Il - INTEREST INCOME FROM INVESTMENT AND LOANS = Ill + IlL
NIl - NONINTEREST INCOME
TR - TOTAL INCOME
IE - INTEREST EXPENSES
NIE - NON INTEREST EXPENSES
NI - NET INCOME
DEPOSITS - TOTAL BANK AND SAVINGS INSTITUTIONS' DEPOSITS IN COUNTY
COMPETITORS - BANKS & SAVINGS INSTITUTIONS HEADQUARTERED IN COUNTY
OFFICES - BANKS AND SAVINGS INSTITUTION OFFICES IN COUNTY
U - PERCENTAGE UNEMPLOYMENT IN COUNTY HEADQUARTERS
BLTA = BL/TA
CINVTA = (CASH + INV)/TA
MLTA = ML/TA
CONSTAT = CONSTOT/TA
LNSD = LOANS/SD
DEPCOMP = DEPOSITS/COMPETITORS = DEPOSITS PER COMPETITOR IN COUNTY
DEP/OFF = DEPOSITS/OFFICES = DEPOSITS PER OFFICE IN COUNTY

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