Michael F. Anderson
Senior Vice President President and Chief Legal Officer
Telephone: 608.6657330
E-mail: mike.anderson@cunamutual.com
Fax: 608.236.6128

CUNA MUTUAL GROUP

August 28, 2015

VIA EMAIL (regcomments@ncua.gov)

Mr. Gerard S. Poliquin
Secretary of the Board
National Credit Union Administration
1775 Duke Street
Alexandria, VA 22314-3428

Re: **Comments on Proposed Rulemaking for Part 723**

Dear Mr. Poliquin:

On behalf of CUNA Mutual Group (CUNA Mutual), we are pleased to provide comments on the National Credit Union Administration's (NCUA) proposal to modernize its member business lending rule. CUNA Mutual is the leading provider of financial products and services to credit unions and credit union members. For over 75 years, CUNA Mutual has worked to empower hard working Americans to achieve financial security while promoting the long-term viability of the credit union movement by offering products and services to credit unions and their employees. It is in this spirit of helping credit unions thrive that we write to express support for the NCUA's recently proposed rule giving federally insured credit unions greater flexibility and autonomy in offering member business loans in a safe and sound manner.

If adopted, the proposed rule should enable credit unions to more efficiently offer member business loans to benefit small businesses, thereby improving local communities and the economy at-large. The proposed rule also offers opportunities for credit unions themselves to grow and provide additional, local economic support. In support of the proposed rule, we offer the attached study: "Room to Grow: Credit Union Business Lending" by David A. Walker, John A. Largay Professor at the McDonough School of Business at Georgetown University. In this study, Professor Walker analyzed 120 credit unions which are poised to exceed the current 12.25 percent regulatory ceiling.

In his extensive analysis of these credit unions, Dr. Walker found many credit unions seeking sound ways to deploy their increased liquidity. In addition, findings from Dr. Walker's research indicate a need for small businesses to gain greater access to credit, filling gaps often left by commercial banks. As noted in the attached study, Dr. Walker found that over the past 35 years, the percentage of bank loans to businesses has declined from 35 percent to 21 percent, while banks' real estate lending has increased from 28 percent to 52 percent of total loans during the same period. Credit unions, which have been a source of strength for small businesses in recent years, are well-positioned to offer increased business credit solutions in a more efficient manner if this proposal is adopted.

We are pleased to submit the attached study by Professor Walker and appreciate the opportunity to provide our comments and the study in support of the NCUA's Regulatory Modernization Initiative We would be happy to answer any questions

Sincerely,

Michael F Anderson
Senior Vice President and Chief Legal Officer

Enclosure

Filene

REPORT

Room to Grow: Credit Union Business Lending

David A. Walker

John A. Largay Professor, McDonough School of Business, Georgetown University

Acknowledgments

I would like to express my appreciation to the Filene Research Institute for its sponsorship. I would like to acknowledge the research assistance of Daniel Eatroff and Justin Kwan for this study. In my undergraduate course and continuing as a tutorial with me, Ana Calvo, Clodagh Coghlan, and Justin Kwan explored legislation and some aspects of credit union lending to business in a static framework for 2012. Ben Rogers and Luis Dopico provided valuable background and insights for the study.

Filene thanks our generous supporters for making this important research possible.

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Executive Summary

Overview

Small business has been a major source of increased employment and the source of much innovation in the United States for several decades. Thus, credit unions should find it imperative to enhance their business lending services and offerings.

MEET THE AUTHOR

David A. Walker
John A. Largay Professor, McDonough School of Business, Georgetown University

The business loan market offers credit unions opportunities for growth and to provide economic support for their communities. Credit unions that are active business lenders are expanding this asset more rapidly than other assets and, in many counties, filling gaps left by banks. Data from 2010 to 2012 show that active business-lending credit unions increased their commercial portfolios by 12.1% while their total loans increased by 5.8%.

Credit unions today are restrained by statute and regulation from lending more than 12.25% of their assets to business, unless they qualify for one of several prescribed exceptions. This restriction continues while the commercial banking industry becomes more concentrated and the composition of its largest assets—loans—shifts away from commercial and industrial lending and toward various aspects of real estate lending. The percentage of bank loans to business has declined from 35% to 21% over the past 35 years while banks' real estate lending has increased from 28% to 52% of total loans. Over the same period, the savings and loan industry has stagnated.

A recent National Federation of Independent Business (NFIB) Research Foundation survey of 850 business owners, each of which employs fewer than 250 people, reports that small firms are switching to nonbank institutions and that "the most common of these [switches] is [to] a credit union" (NFIB Research Foundation 2012, p. 5). Credit unions have become the primary institution and supplier of credit for 7% of the respondents.

What Is the Research About?

This study focuses on 120 credit unions located across 39 states and 96 counties. These credit unions loaned approximately 10%–14% of their assets to business at the end of 2012 and are the most likely candidates to exceed the 12.25% regulatory ceiling of assets loaned to business.

They increased their average proportion of assets allocated to business loans from 8% in 2007 to 11% in 2012, through the financial crisis and the subsequent recession. This lending growth came as their asset liquidity rose from 22% to 31%. Between 2007 and 2012, the percentage of assets in consumer loans fell from 28% to 23%, mortgage loans declined from 42% to 40%, and total loans declined from 79% to 72% of assets.

A mixed cross-section/time-series (panel) analysis was developed to test relationships among credit union lending activities, risks, returns, and competition from banks to explain their percentage of assets loaned to business (BLTA).[1]

Two models emerged with strong statistical characteristics. For both models, BLTA is a function of asset percentages of liquid assets, mortgage loans, and consumer loans, as well as the ratio of total loans to share deposits and a time trend. In short, with increased liquidity and less lending in traditional categories, business lending became important for these 120 credit unions. The coefficients are statistically significant. Business loans are substitutes for mortgage and consumer loans.

After the analysis was completed for 2007–2012, data became available for 2013 and 2014. Expanding the data set by two additional years provides even stronger statistical results. Each test statistic and the explained variance increased by at least 10% and the F-statistic increased by 58%.

The second model includes one additional variable—deposits per insured institution in a credit union market, which has a positive coefficient that is statistically significant at the 1% probability level. This implies that there is more credit union business lending in markets where there are, on average, larger competitors. In 2012 commercial banks with more than $1 billion (B) in assets made only 10.7% of their loans to small firms (FDIC 2012a).[2]

This study assumes that credit unions that lent a significant amount of their assets to business in 2012 are important local business lenders. These credit unions are likely to expand their business lending beyond 12.25% of their assets if this ceiling is increased. Some business loan customers employ credit union loans to purchase real estate, automobiles, or other assets. The study provides a statistical model to explain credit unions' business lending.

SAVINGS AND LOAN INDUSTRY DECLINE

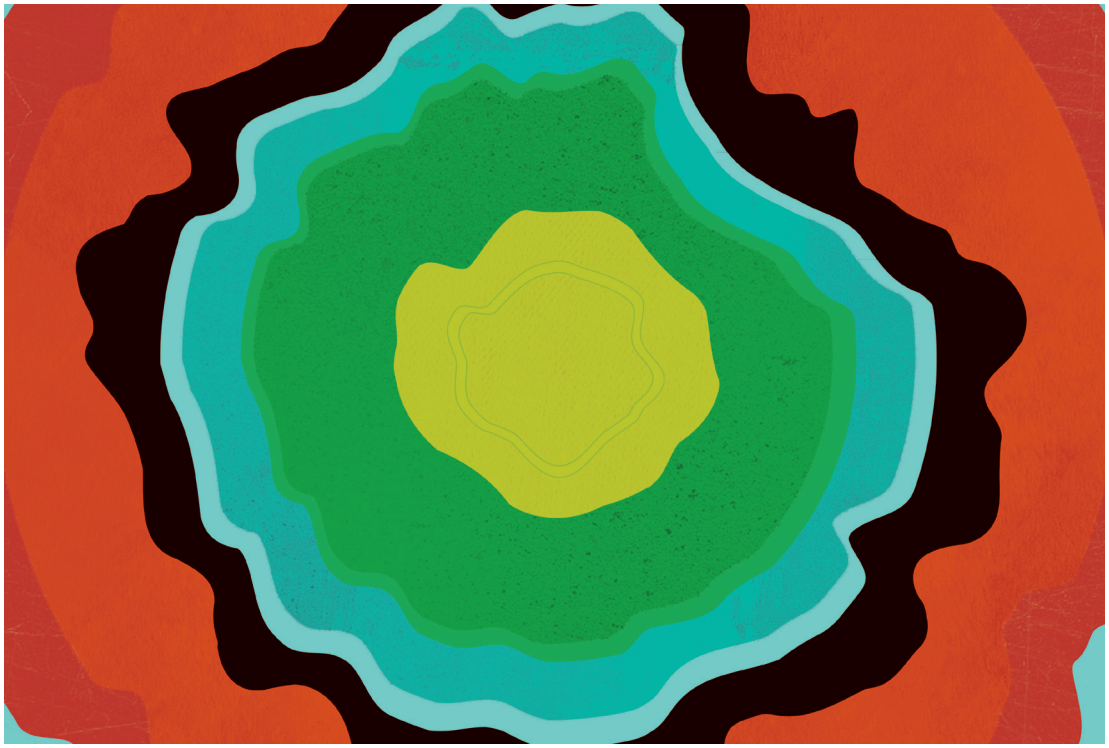
Year	Number	% change	Assets ($B)	% change
1991	2,561		1,113	
1996	1,924	–24.9	1,028	–7.6
2012	987	–48.7	1,060	3.1

Source: Wilcox (2006, table 10).

What Are the Credit Union Implications?

The study shows that there is room to grow. Credit union business lending 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 be beneficial to local communities.

Room to Grow: Credit Union Business Lending



CHAPTER 1

Lending Opportunities and Research Questions

American commercial credit markets have become more heterogeneous and sophisticated as financial innovations are implemented and the competitive environment becomes more intense. Corporate debt today is issued in huge tranches to take advantage of implicit economies of scale and applications of technology. Moreover, debt issued by US corporations continues to expand more rapidly than the economy; corporate debt issued since the financial crisis has expanded by 20%, while debt issued by noncorporate firms has grown by only 4% and the US economy has grown by 10% (see Sanchez 2014, fig. 1).

Monthly surveys by the National Federation of Independent Business (NFIB) (Dunkelberg and Wade 2014) provide insight into the availability of credit for its members, which are virtually all small firms. Even during the economic expansion following the 2009 recession, NFIB survey respondents reported a limited supply of credit.

The American credit environment offers a unique and important space for credit unions as nonprofit, common bond mutual associations. As their lending expands, credit unions are becoming more important business lenders, especially for small firms.

A 2011 NFIB Institute survey of 850 business owners (each of which employs fewer than 250 people) shows that, while commercial banks are still the primary financial institution for small firms, many small firms are switching to other institutions and that "the most common of these [switches] is [to] a credit union" (NFIB Research Foundation 2012, p. 5). Credit unions have become the primary institution and supplier of credit for 7% of the respondents, an increase from just 3% in 2009. Thirteen percent of the small businesses have their line of credit with a credit union (NFIB Research Foundation 2012, table 15bl, p. 55), and 8% received their largest loan from a credit union (table 16bl, p. 57).

Numerous studies have documented that small businesses are the primary source of much of the economic growth and innovation in the US economy. Some of these studies are listed in the Recommended Reading section for this study. Small businesses employ more than 50% of the US labor force.

Credit Union Lending Opportunities

Mills and McCarthy (2014) summarize past studies showing the importance of small business for US job creation and economic growth. (From 2009 to 2013, Mills served as the administrator of the US Small Business Administration.) Firms have a limited supply of loans below $250,000 from commercial banks and face much more difficulty in searching for credit during recessions and economic recovery (Dunkelberg and Wade 2014). Mills and McCarthy also discuss the changes in business lending markets and the fact that small-business loans can rarely be securitized unless they are US Small Business Administration loans.

These trends are not unique to the United States. Klein (2014) shows that the lack of access to credit has caused small and medium-sized European firms to reduce their output and investment in new plants and equipment. European countries with a greater percentage of small and medium-sized firms were 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; however, the current low US interest rates and the expected rising rates in 2015 (Board of Governors of the Federal Reserve 2015) have encouraged firms that have the financial capacity to substitute long-term fixed-rate debt in place of short-term credit and to replace short-term debt that has variable interest rates. Small and medium-sized firms have continued to rely on depository institutions for much of their credit, mainly because some credit markets supply funds only to large firms.

Fewer banks and savings and loans are supplying short-term credit to small firms as their size distributions and asset concentrations have shifted over time. Therefore, the potential supply of business loans from credit unions is important to support the growth of the US economy and to reduce unemployment.

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Wilcox (2011) has examined trends in credit unions' and banks' business lending to small firms, developing an extensive database for 1986–2010. He shows that small-business loans under $1 million (M) by credit unions have risen substantially over the last decade, applying three measures: (1) relative to total loans and assets at credit unions, (2) relative to small-business loans at community banks (with total assets under $1B), and (3) relative to small-business loans at all banks. Ely and Robinson (2009) argue that the consolidation of commercial banks has provided an opportunity for credit unions to expand their business lending. Credit unions appear to be replacing some community banks' lending to small firms as many of these banks have been acquired by large commercial banks.

Research Questions

The focus of this study is on credit unions that are significant business lenders, measured as lending approximately 10%–14% of their assets to business at the end of 2012. These credit unions appear to have the capacity to become more substantial business lenders. The study examines four major research questions developed from the studies and issues mentioned above:

1. What determined credit unions' business lending levels before the recent financial crisis and recession, and what determines them after?
2. What are the differences in financial risks and returns among credit unions that are significant business lenders?

3. To what extent has competition from banks and savings institutions affected credit unions' business lending?
4. How does the market economic environment affect credit unions' business lending?

These questions will help illuminate any differences in lending levels before and after the recent financial crisis, extending from 2007 to 2012.

CHAPTER 2

Credit Union Environment

Credit union activities continue to evolve as their membership grows and the demand for credit union products increases. Congress passed the Credit Union Membership Access Act in 1998 to permit the National Credit Union Administration (NCUA) to expand credit unions' common bond requirements. Broadening credit union membership affinities and reducing geographic service restrictions have supported the growth of credit unions' supply of credit and expanded membership.

Broadening credit union membership affinities and reducing geographic service restrictions have supported the growth of credit unions' supply of credit and expanded membership.

Since 1999, credit union regulators and legislation have allowed credit unions to serve a growing variety of memberships. American credit unions now count more than 100 million memberships. The demand for many credit union services is growing rapidly. Figure 1 shows the growth in credit union balance sheets over the past two decades, while the number of institutions has contracted by almost two-thirds (CUNA 2013). Credit union assets, loans, and savings all have increased by approximately 200%.

FIGURE 1

CREDIT UNION GROWTH 1991–2012

Year	Credit unions	Members	Savings ($M)	Loans ($M)	Assets ($M)
1991	19,758	87,659,446	309	200	341
1996	11,887	71,390,129	295	220	337
2012	7,070	95,968,179	897	615	1,043
% change, 1991–2012	–64%	9%	190%	207%	206%

Source: CUNA (2013).

Of the 7,070 credit unions at the end of 2012, only 197 (2.8%) are in the largest group (assets above $1B); these credit unions hold approximately 50% of the industry's total assets. This trend continues in 2015. These credit unions are growing rapidly; between 2011 and 2012 they grew by 10.7%, and in the previous year they grew by 7.6%.

The 6,873 credit unions in 2012 with assets below $1B are the most direct competitors of community commercial banks, defined as banks with assets under $1B. Despite this concentration, the credit union asset size distribution is somewhat less concentrated than the commercial banking distribution.

Credit unions have become an increasingly important source of funding for emerging and underserved markets as the largest institutions become more dominant in the commercial banking and savings industries. Figure 3 shows the asset and loan compositions for credit unions for 2010–2012 and recent growth:

FIGURE 2

CREDIT UNION SIZE DISTRIBUTION 2012

Asset size	Number	% of total	Assets ($M)	% of total assets
$0M–$0.2M	102	1.4	12	0.0
$0.2M–$0.5M	157	2.2	53	0.0
$0.5M–$1M	209	3.0	152	0.0
$1M–$2M	346	4.9	508	0.0
$2M–$5M	756	10.7	2,602	0.2
$5M–$10M	854	12.1	6,270	0.6
$10M–$20M	1,020	14.4	14,735	1.4
$20M–$50M	1,307	18.5	42,260	4.1
$50M–$100M	830	11.7	59,395	5.7
$100M–$200M	594	8.4	84,232	8.1
$200M–$500M	480	6.8	154,249	14.8
$500M–$1B	218	3.1	155,091	14.9
$1B+	197	2.8	523,529	50.2
Total	7,070	100.0	1,043,088	100.0

Source: CUNA (2012).

- Total loans: 58.5% of insured credit union assets.
- Business loans: 7% of loans.
- Real estate loans: 53.6% of loans.
- Auto loans: 29.9% of loans.

Between 2010 and 2012, business loans increased by 12.1%, which was more rapid growth than any other loan category (NCUA 2012a). Business loans are an opportunity for credit union growth and increased support for their communities.

Between 2010 and 2012, business loans increased by 12.1%, which was more rapid growth than any other loan category.

FIGURE 3

CREDIT UNION ASSET AND LOAN COMPOSITION 2010–2012

	2012 assets ($M)	% of 2012 assets	2010 assets ($M)	% change 2010–2012 assets	% of 2012 loans	% of 2010 loans
Cash and equivalents	100,874	9.9	74,429	35.5		
Investments	280,366	27.4	238,918	17.3		
Business loans	41,698	4.1	37,181	12.1	7.0	6.6
Auto loans	178,533	17.5	164,213	8.7	29.9	29.1
Real estate loans	320,338	31.4	309,644	3.5	53.6	54.8
Credit card loans	39,517	3.9	35,945	9.9	6.6	6.4
Other loans	17,655	0.7	17,725	–0.4	3.0	3.1
Total loans	597,741	58.5	564,708	5.8	100.0	100.0
Total assets	1,021,731	100.0	914,341	11.7		

Source: NCUA (2012a).
Note: Data are for 6,819 federally insured credit unions.

Credit unions increased their asset liquidity during that period. The percentage of assets held in cash plus investments (mainly US government securities) increased 36% between 2010 and 2012, after the financial crisis.

Competition with Banks

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 2012, the 89 commercial banks with assets above $10B had 82.5% of the industry's assets; in 1991 they had 39.4% (Figure 4).

As the largest institutions have become more dominant in the banking industry, credit unions are an increasingly important source of funding for underserved markets. Although community banks make 26.4% of their loans to small businesses, larger banks make only 10.7% of small-business loans (FDIC 2012a). The NFIB study discussed above (NFIB Research Foundation 2012) reflects the trend of more small firms depending on credit unions as an important supplier of financial services.

The Riegle-Neal Interstate Banking Act of 1994 and the Gramm-Leach-Bliley Act of 1999 allowed commercial banks to expand their geographic and product markets, respectively.

FIGURE 4

BANK SIZE DISTRIBUTIONS

	1991				2002				2012			
Asset size	Number	% of total	$B	% of $	Number	% of total	$B	% of $	Number	% of total	$B	% of $
$0M–$100M	8,781	74.3	354	10.3	4,285	54.0	216	3.1	1,954	32.1	114	0.9
$100M–$1B	2,771	23.4	674	19.7	3,249	41.0	855	12.3	3,607	59.2	1,063	7.9
$1B–$10B	219	1.9	1,050	30.6	319	4.0	917	13.2	446	7.3	1,168	8.7
$10B+	49	0.4	1,352	39.4	80	1.0	4,943	71.3	89	1.5	11,046	82.5
Total	11,820	100.0	3,430	100.0	7,933	100.0	6,931	100.0	6,096	100.0	13,391	100.0

Source: FDIC (2012a).

Figure 4 shows the steady decline in the total number of banks and their increased asset concentration over the past two decades.

While the banking industry has become more concentrated, the composition of its largest asset portfolio—loans—has shifted away from commercial and industrial loans and toward various aspects of real estate lending. Banks' total loans grew from $811B to $6.9 trillion between 1980 and 2012, while their percentage of loans to business declined from 35% to 21%.

Banks' real estate lending, including home equity loans, increased from 28% to 52% of loans, while consumer lending remained stagnant at approximately 20% of banks' loans. Some of these changes are a result of tax laws that no longer allow deduction of consumer interest charges unless they are linked to housing.

Competition with S&Ls

Savings and loan associations were permitted to allocate up to 5% 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%, and legislation in 1996 extended it to 20% if the additional business loans are extended to small business. The expectation was that S&Ls would increase their loans to small and medium-sized businesses.

The industry continues to shrink by virtually all measures.

The industry continues to shrink by virtually all measures. Since 1991, the number of these savings institutions has declined by 61.5% (to 987) and their assets have declined by 4.8% (see Figure 5). Savings and loans have continued to focus on mortgage lending: 75.3% of their loans are mortgages and only 8.8% are commercial and industrial loans.

FIGURE 5

SAVINGS AND LOAN INDUSTRY DECLINE

Year	Number	% change	Assets ($B)	% change
1991	2,561		1,113	
1996	1,924	–24.9	1,028	–7.6
2012	987	–48.7	1,060	3.1

Source: Wilcox (2006, table 10).

Competitive Markets

The changing asset concentration and competitive environment for banks and savings and loans are important considerations for defining credit unions' business lending markets. Counties are assumed to define credit unions' business lending markets since the great majority of counties are small; 97.2% of credit unions have assets under $1B. The markets for even the largest credit unions are mostly local markets.

Growth and Consolidation

Regulatory and structural changes for financial institutions provide credit unions with an opportunity to supply business credit to small and medium-sized firms. Wilcox (2005) argued a decade ago that "substantial cost advantages for larger credit unions and vigorous competition among depositories of all kinds provides powerful incentives for the credit union industry to consolidate." Since 1980, the number of credit unions has declined by two-thirds, membership has increased by 218%, assets have grown by 1,512%, and loans have increased by 1,262% on a nominal basis (CUNA 2013).

Anderson and Liu (2013) point out 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" (p. 7).

"The number of credit unions has decreased 36 percent, while assets have increased 160 percent."

This consolidation is not unique to American credit unions. The number of credit unions in Australia, Canada, Ireland, New Zealand, South Korea, and the United Kingdom declined from 2006 to 2011. Among these six countries, the decline was 16%, slightly larger than the percentage decline in the United States (Prieg and Greenham 2012, table 6).

Credit Union Lending

Consumer lending is a critical activity for almost every credit union. Many credit unions were established for this purpose. Figure 6 shows the distribution of total loans for the 120 credit unions defined as significant business lenders for this study.

FIGURE 6

LENDING AMONG 120 FOCUS CREDIT UNIONS

Year	Total loans	Business loans/total loans	Mortgage loans/total loans	Auto loans/ total loans	Credit card loans/total loans	Consumer loans/total loans	
2012	379	15.95	55.50	21.72	3.60	28.56	MEAN
	124	14.89	55.68	20.69	2.73	28.65	MEDIAN
	578	4.75	15.08	13.96	3.73	15.93	STD
2011	358	15.88	56.03	21.22	3.61	28.10	MEAN
	121	15.02	55.96	20.54	2.61	28.25	MEDIAN
	542	5.14	14.85	13.48	3.82	15.46	STD
2010	346	14.82	56.19	22.17	3.61	28.99	MEAN
	124	14.59	56.76	20.58	2.66	27.55	MEDIAN
	506	4.93	15.09	13.67	3.88	15.93	STD
2009	352	13.98	55.25	24.08	3.47	30.77	MEAN
	125	13.81	57.05	22.95	2.56	28.63	MEDIAN
	526	5.64	16.19	14.89	3.61	17.08	STD
2008	357	12.05	54.92	26.34	3.40	33.04	MEAN
	125	12.89	55.73	23.20	2.32	30.65	MEDIAN
	576	5.46	17.08	16.57	3.66	18.71	STD
2007	321	10.56	53.39	29.10	3.58	36.05	MEAN
	106	11.56	54.35	26.15	2.49	32.69	MEDIAN
	508	6.06	17.63	17.52	3.85	19.74	STD

Source: NCUA (2012b).

Consumer loans include auto, credit card, student, and other loans. For these 120 credit unions, consumer loans are approximately twice the volume of their business loans. Since each mortgage loan is relatively large, mortgage loans are a large percentage of total loans. The trend for these credit unions' lending has been to reallocate their loan portfolios to business loans while auto loans declined.

Lending to Business

This study focuses on the growth, market, and competition for credit unions' business lending. From 2010 to 2012 credit unions' business loans grew by more than twice their growth rate of total loans (12.1% vs. 5.8%, respectively). Credit unions are currently restricted to lend a maximum of 12.25% of their assets to business, unless they obtain one of several NCUA regulatory exemptions. Only 105 institutions were lending much more than 9.5% of their assets to business at the end of 2012.

Potential exemptions to the 12.25% ceiling are reviewed on a case-by-case basis by the NCUA. Exceptions include small loans below $50,000, loans guaranteed by deposits, and some loans made by credit unions located in low-income areas. Credit unions chartered for the express purpose of making business loans are also excluded.

Senator Mark Udall (D-CO) reintroduced the Small Business Lending Enhancement Act (S.509, 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%. This would provide more resources to business—especially small businesses, which are the main source of new employment and innovation (see Mills and McCarthy 2014). The bill was not passed, and Udall was defeated for reelection in 2014. It is not clear whether the legislation will be reconsidered.

At year-end 2012, none of the 10 overall largest credit unions were lending as much as 3% of their assets to business.

It is not the largest credit unions that are most heavily involved in business lending. At year-end 2012, none of the 10 overall largest credit unions were lending as much as 3% of their assets to business (Calvo, Coghlan, and Kwan 2013, table 3). The asset and business loan size distributions for the significant credit union business lenders are provided in Figure 7. Only 17 of these credit unions have assets above $1B. More than half of the institutions have assets between $50M and $500M, well within the size range that competes with community commercial banks. Obviously, the largest institutions are making the largest dollar volume of business loans.

FIGURE 7

CREDIT UNION BUSINESS LENDERS SIZE DISTRIBUTION 2012

Asset size	Number	%	Assets ($thousands)	% assets	Business loans ($thousands)	% business loans
$0M–$0.2M	0	0.0	0.0	0.0	0.0	0.0
$0.2M–$0.5M	0	0.0	0.0	0.0	0.0	0.0
$0.5M–$1M	0	0.0	0.0	0.0	0.0	0.0
$1M–$2M	0	0.0	0.0	0.0	0.0	0.0
$2M–$5M	1	0.8	4,561.8	0.0	640.4	0.0
$5M–$10M	0	0.0	0.0	0.0	0.0	0.0
$10M–$20M	5	4.2	73,122.0	0.1	8,006.7	0.1
$20M–$50M	9	7.5	302,436.9	0.5	30,725.4	0.4
$50M–$100M	20	16.7	1,557,728.5	2.5	168,037.7	2.4
$100M–$200M	29	24.2	4,107,568.5	6.7	444,251.8	6.5
$200M–$500M	18	15.0	6,289,914.1	10.2	691,267.7	10.1
$500M–$1B	21	17.5	15,973,369.4	25.9	1,811,585.5	26.4
$1B+	17	14.2	33,307,913.0	54.1	3,706,498.1	54.0
Total	120	100.0	61,616,614.1	100.0	6,861,013.4	100.0

Source: NCUA (2012b); author calculations.

Economies of Scale and the Supply of Business Loans

The supply of credit union business loans is delineated by the data described above. The economies and potential economies of scale for credit union products are significant determinants of this supply when all inputs are variable. Economic theory observes that the supply of loans is driven by the marginal cost of loans, and when marginal costs are below average costs, average costs decline. Credit unions drive down average costs by (1) spreading fixed costs over larger output quantities and (2) increasing efficiencies and specialization from producing larger quantities of output.

The extensive economies of scale literature for insured depository institutions—including credit unions, commercial banks, and savings and loans—shows that their economies are pervasive, at least until commercial banks become very large and complex institutions offering investment and insurance products.[3]

Wilcox (2005) found increasing returns to scale for credit unions. Contrasting groups of credit unions with assets of $10M, $100M, and $1B and above, he found that larger credit unions have lower average costs, lower interest expenses, and higher returns on assets.

Wheelock and Wilson (2011) argue that most credit unions are too small to benefit fully from their potential economies of scale. The recent growth and consolidation of the industry should allow credit unions to realize some of the potential economies over the period and beyond the current study.[4]

The recent growth and consolidation of the industry should allow credit unions to realize some of the potential economies over the period and beyond the current study.

Business Lending Markets

The business lending market for a credit union is defined in this study as the county headquarters for the institution. The main competition for these credit unions comes from the banks and branches operating in the county. This definition 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.

The 120 credit unions whose business lending is analyzed in this study are located in 96 different counties and 39 states; 15 are headquartered in California, 12 in New York State, and the others are widely dispersed. The median population of the 96 counties is 425,363, according to the 2010 census. County unemployment is used to delineate the economic characteristics of credit union markets. County GDP growth rates would be another useful measure, but these data are not available for many counties.

Data

The data set for this study is 120 credit unions from the population of federally insured (federal or state-chartered) credit unions selected on the basis of the percentage of their assets loaned to business in 2012. Eighty-four had business loans between 9.50% and 12.25% of their assets, 15 had a percentage below 9.48 (9 had a percentage between 8.5 and 9.5), and 21 had a percentage above 12.25. The 15 below 9.48% for 2012 were included on a case-by-case analysis of their business lending for 2007–2012. The 21 above 12.25% include 18 with percentages between 12.25 and 15.0. Some of these 21 appear to have satisfied NCUA lending exemptions. Obvious outliers were eliminated.[5]

See more financial characteristics in Appendix 1.

FIGURE 8

CHARACTERISTICS OF 120 SIGNIFICANT CREDIT UNION BUSINESS LENDERS

Year	Assets	Business loans/total loans	(Cash + inv)/ total assets	Mortgage loans/total loans	Total assets	Net worth/ total assets	Net income x 100/total assets	Net income/ net worth	Loans/ total assets	Loans/ share deposits	
2012	513.5	11.04	30.70	39.80	22.88	10.36	0.62	0.05	73.72	0.84	MEAN
	170.8	10.89	29.32	39.42	19.58	9.52	0.70	0.07	72.41	0.82	MEDIAN
	735.5	1.76	12.67	13.57	28.27	4.13	0.92	0.17	26.92	0.30	STD
2011	479.2	11.16	29.96	40.86	22.22	10.59	0.50	0.05	74.25	0.85	MEAN
	168.0	11.09	28.00	40.47	20.04	9.54	0.54	0.05	74.02	0.83	MEDIAN
	674.2	2.36	13.02	14.08	25.20	4.37	0.64	0.07	24.77	0.28	STD
2010	449.8	10.75	28.02	41.81	23.29	10.64	0.33	0.03	75.85	0.87	MEAN
	159.2	10.98	26.66	42.06	20.85	9.48	0.38	0.03	74.77	0.84	MEDIAN
	607.9	3.08	12.96	14.31	26.75	5.11	0.67	0.06	26.31	0.30	STD
2009	443.2	10.42	25.48	42.57	24.97	10.25	–0.06	–0.02	77.97	0.91	MEAN
	157.7	10.80	22.16	43.03	22.31	9.24	0.04	0.00	77.31	0.87	MEDIAN
	616.7	4.05	12.64	15.37	26.27	3.82	1.01	0.15	25.50	0.29	STD
2008	460.4	9.45	22.08	44.01	26.66	11.06	0.06	0.00	80.12	0.95	MEAN
	133.3	10.56	19.88	44.42	24.54	10.34	0.14	0.01	81.24	0.94	MEDIAN
	723.8	4.05	13.45	16.76	20.95	3.88	1.21	0.11	20.38	0.25	STD
2007	385.2	8.38	21.98	41.93	28.37	11.61	0.56	0.05	78.68	0.93	MEAN
	137.8	9.28	20.37	42.43	25.45	10.90	0.61	0.05	79.10	0.92	MEDIAN
	556.0	4.93	13.60	16.79	20.95	3.68	0.54	0.05	20.32	0.25	STD

Financial Characteristics

As mentioned above, it is *not* the largest credit unions that lend the largest percentages of their assets to business. For 2012, the 120 credit unions studied had a median asset size of $170.8M and a mean size of $513.5M. The 10 largest credit unions overall had a median size of $8.8B in 2012 and a mean size of $14.9B. Allowing for inflation and normal asset growth, the size characteristics are similar for previous years.

The 120 credit unions have reconfigured their asset and loan portfolios since 2007. The percentage of assets allocated to total loans overall shrunk from 79% in 2007 to 74% in 2011 and 72% in 2012, while increasing their proportion of assets allocated to business loans and also increasing their asset liquidity. Their average percentage of assets in mortgage and consumer loans declined from 70% to 63%.

The link between credit unions' share deposits and loans is unique in contrast to other insured depository institutions because of credit union membership rules. Loans as a ratio to share deposits measures how the credit unions deploy their members' funds to the same or other member borrowers. The percentage of share deposits loaned declined by approximately 10 percentage points over the 2007–2012 period.

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The credit unions' riskiness, measured by net worth to assets, increased somewhat over the six years. Before the financial crisis, their net worth as a ratio to total assets was above 11%. It declined to 10.25% for 2009 and rose slightly thereafter. By 2011 the credit unions' net income ratios recovered to their 2007 levels. The ratio of net income to assets for 2012 exceeds the 2007 ratio. As expected, 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. This is surprising since these institutions increased their asset liquidity considerably between 2007 and 2012 while interest rates on government securities and loans remained low. The 120 credit unions exhibit considerable variation among their net income ratios.

For a description of the statistical methodology undertaken on the 120 credit unions, see Appendix 2.

Economic Environment

The economic environments in which the 120 credit unions lend vary widely. The unemployment rates appear to track the national rates before, during, and after the 2009 recession and the financial crisis. The state GDP growth rates are also consistent with national rates. There are, however, considerable variations across the counties and states, as seen in the wide range between the maximum and minimum percentages for each year.

Competitive Environment

The competitive environment for the credit union business lenders is represented by the number of insured institutions and branches operating within the same county, the aggregate deposit levels for these institutions, and deposits per institution and office. These measures are derived from the annual June 30 FDIC Summary of Deposits, which are only collected with the institutions' midyear *Reports of Income and Condition*. The nationwide contraction of the number of banks and the increase in banking offices and bank size are parallel to the competitive environment that the 120 credit unions faced between 2007 and 2012 in their county markets. Both deposits per bank and deposits per office increased by more than 40%.

CHAPTER 4

Key Findings and Recommendations

This report seeks to understand characteristics that correspond with increased business lending activity by credit unions. The 120 significant business lenders in this study reflect the correlations.

The empirical work in this study provides econometric cross-section/time-series models with impressive test statistics. The factors that explain the percentage of credit unions' loans to business are 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 six-year period.

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 credit union business lending.

Credit unions have increased their business lending as a substitute for mortgage and consumer lending during the crisis and throughout the 2007–2012 period. A variety of other factors have been tested for their potential impact on business lending. The credit unions' 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 seem to explain business lending. The recent recession and financial crisis hardly had an impact on credit unions' growing business lending, but the impact may be disguised within their rising liquidity ratios.[6]

The recent recession and financial crisis hardly had an impact on credit unions' growing business lending, but the impact may be disguised within their rising liquidity ratios.

In summary:

- **Credit unions compete favorably with large institutions in commercial lending.** In counties where banks and savings institutions are, on average, larger, the credit unions are lending more of their assets to business. This is consistent with the fact that so much of bank lending to small business comes from community banks, not larger banks. Mills and McCarthy (2014) and many others have discussed this in detail. A market with larger institutions seems to support prospects for greater credit union business lending.
- **Liquidity matters.** The percentage of assets loaned to business is larger among credit unions that are more liquid (hold more of their assets in cash and investments). Credit unions awash in liquidity have an incentive to seek productive uses for member deposits. The coefficient of liquidity is positive and highly significant in every model.
- **Higher loan-to-share ratios encourage more business lending.** Institutions that are lending a higher proportion of their members' share deposits are lending more to business. Statistically, this coefficient is positive and highly significant. Evidently, the credit unions that are expanding their loan portfolios are increasing business loans more rapidly than other types of loans.
- **Business lending is a substitute for mortgage lending.** The credit unions that are significant business lenders, as well as all credit unions, allocate more of their loan portfolio to mortgages than to any other loans. In the strongest models, more mortgage lending means less business lending. This is not surprising, since mortgages and business loans are generally secured by properties and business assets, respectively.
- **Business lending replaces consumer lending.** The credit unions' consumer loans are also a substitute and competitor for their business loans. Between 2010 and 2012, the studied credit unions reconfigured their loan portfolios. Business loans increased faster (12.1%) than credit card loans (9.9%), real estate loans (3.5%), and auto loans (8.7%), as credit unions sought to bolster overall lending portfolios.

Policy Considerations

The results of the analysis in this study should contribute to policy considerations for insured depository institutions and community economic development. Credit union business lending 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 be beneficial to local communities. In counties with larger banks and savings institutions, on average, credit unions do more business lending.

APPENDIX 1

Credit Union Market Characteristics

Some of the credit unions' characteristics are provided in Figure 8. The figure provides means, medians, and standard deviations for assets; percentage of assets allocated to business, consumer, and total loans; liquid assets (cash and investments); and the ratio of loans to share deposits, net worth, and net income ratios to assets. In most cases the means and medians are quite similar, but these two averages and the standard deviations show the considerable skewness across asset and loan sizes.

FIGURE 9

COUNTY UNEMPLOYMENT AND STATE GROWTH RATES

	Unemployment			GDP growth		
Year	Mean	Standard deviation	Max : min	Mean	Standard deviation	Max : min
2007	4.4	1.2	8.6 : 2.1	6.1	2.3	14.5 : 0.9
2008	5.5	1.5	10.5 : 2.6	6.4	2.1	11.3 : 0.6
2009	9.0	2.5	15.0 : 3.5	6.0	2.0	10.2 : 1.4
2010	9.3	2.6	16.7 : 3.5	4.5	2.4	11.7 : –1.3
2011	8.6	2.5	16.4 : 3.1	1.7	2.0	6.0 : –2.1
2012	7.8	2.3	15.0 : 2.6	–0.1	2.8	7.0 : –4.0

Source: US Bureau of Labor Statistics, www.bls.gov.

FIGURE 10

BANKS AND SAVINGS INSTITUTIONS, OFFICES, AND DEPOSITS IN CREDIT UNION COUNTY MARKETS

	Institutions (integers)			Offices (integers)			Deposits (max in $thousands)		
Year	Mean	Standard deviation	Max : min	Mean	Standard deviation	Max : min	Mean	Standard deviation	Max : min
2007	34	32	144 : 1	256	376	1,716 : 1	34	71	378 : 30
2008	34	33	146 : 1	264	388	1,764 : 1	36	75	403 : 25
2009	34	32	140 : 1	266	393	1,788 : 1	39	82	428 : 27
2010	32	29	126 : 1	261	383	1,738 : 1	40	85	494 : 27
2011	32	28	126 : 1	263	388	1,765 : 1	44	100	624 : 28
2012	32	28	124 : 1	263	393	1,787 : 1	47	109	683 : 32

	Deposits/institution			Deposits/office		
Year	Mean	Standard deviation	Max : min	Mean	Standard deviation	Max : min
2007	569	739	3,937 : 25	87	110	603 : 12
2008	623	810	4,239 : 25	97	134	778 : 17
2009	677	957	5,213 : 27	103	161	1,095 : 19
2010	727	1,011	5,309 : 27	107	155	957 : 19
2011	805	1,227	6,710 : 25	117	181	1,050 : 19
2012	843	1,359	7,503 : 26	123	207	1,254 : 20

Source: FDIC, "Summary of Deposits," June 30 each year, www.fdic.gov.

APPENDIX 2

Statistical Methodology and Analysis

Estimation Procedure

A mixed cross-section/time-series (panel) model among the 120 credit unions and across 2007–2012 provides parameters to test relationships among credit union activities, risks, returns, and competition from banks in credit union markets. EVIEWS8 (IHS Global Inc. 2013) is employed to estimate models. The estimated models adjust for error terms that otherwise might violate assumptions for classical least squares regression.

The parameter estimates satisfy the critical least squares assumptions that coefficients are statistically best, linear, unbiased, and efficient (b.l.u.e.). The errors are assumed to be homoscedastic—with constant variance. If the error terms are autocorrelated, the coefficients' standard errors and variances would be understated; if the error terms are negatively correlated, the coefficients' variances are overstated. In either case, the parameter estimates would not be statistically minimum variance "efficient."

This cross-section/time-series analysis has distinct advantages over numerous other studies and models that have been estimated for a cross-section at one point in time or for trends for institutions. This approach takes account of variations for the estimated parameters and standard errors among the credit unions that form the cross-sections (N = 120) in each period and the effects across time (T = 6 years). The equations are estimated across N × T = 720 observations.

The cross-section/time-series analysis provides robust tests for structure and performance factors that might influence the proportion of assets that credit unions lend to business. The structure and performance factors include:

- Credit unions' competition in their lending markets.
- Lending markets' economic environment.
- Business-lending credit unions' financial risks and returns.
- Asset portfolio compositions.
- Other effects of the financial crisis and the recent recession.

Time-Series/Cross-Section Data (2007–2012, 120 Lenders)

The asset and business loan size distributions of the 120 credit unions that are significant business lenders are not very different from the distributions for all 7,070 credit unions in 2012 (see Figures 2 and 7). The 120 credit unions have 54% of their assets and business loans in institutions that are larger than $1B. A larger percentage of these significant business lenders (14%, 17 of 120) have assets above $1B.

Business Loan Correlations

The correlations between business loans as a percentage of assets and their potential explanatory variables, adjusted for size, are modest. Figure 11 provides correlations between the ratio of business loans to total assets and major asset ratios, the number of institutions and offices within the credit union county markets, the deposits per institution and offices in the county, and county unemployment.

FIGURE 11

BALANCE SHEET CORRELATIONS WITH BL/TA

Year	TA	NW/TA	(Cash + inv)/ TA	Consumer/ TA	ML/TA	Loans/SD	Institutions	Offices	Deposits/ institution	Deposits/ office	U
2012	0.04	0.17	0.16	–0.10	–0.02	0.43	0.05	0.03	0.15	0.20	–0.08
2011	0.05	–0.12	0.11	–0.05	–0.02	0.55	0.09	0.10	0.05	0.05	–0.01
2010	0.16	0.01	0.03	0.21	0.13	0.52	0.17	0.19	0.10	0.06	0.08
2009	0.17	0.09	0.09	0.33	0.11	0.43	0.14	0.15	0.11	0.09	0.00
2008	0.24	0.03	–0.03	0.49	0.31	0.41	0.10	0.11	0.08	0.10	0.02
2007	0.20	0.09	–0.08	0.36	0.37	0.48	0.15	0.14	0.15	0.16	0.08

The business loan ratio (BL/TA) is hardly correlated with total assets or other variables, except for the ratio of loans to share deposits (Loans/SD), where the correlation ranges from 0.41 to 0.55. The only other correlations with business loans above 0.33 are for 2007 and 2008 for the consumer loan ratio and for 2007 mortgage loans (ML/TA).

FIGURE 12

INCOME STATEMENT CORRELATIONS WITH BL/TA

Year	NI	III	IIL	NII	IE	NIE	NI/TA
2012	0.03	0.04	0.02	0.07	0.03	0.04	–0.01
2011	0.00	0.03	0.05	0.10	–0.01	0.09	–0.05
2010	0.07	0.1	0.17	0.23	0.11	0.21	–0.07
2009	–0.03	0.17	0.16	0.20	0.14	0.20	–0.03
2008	–0.13	0.23	0.23	0.19	0.24	0.26	–0.08
2007	0.23	0.18	0.21	0.20	0.21	0.20	0.23

Figure 12 provides correlations between the major income and expense variables and the ratio of business loans to assets. None of these correlations is as high as 0.33. The largest values are for a couple of noninterest income (NII) and noninterest expenses (NIE) between 0.20 and 0.26.

Business Loan Models

A wide variety of time-series/cross-section regression models have been tested to explain the proportion of assets that credit unions allocate to business loans. The cases with the strongest statistical results—judged by coefficients' t-statistics and equations' adjusted R-squares and Durbin-Watson (DW) statistics—are summarized in Figure 13.

FIGURE 13

BLTA CS/TS REGRESSION MODELS (t-STATISTICS)

Model	TA	MLTA	CONSTA	CINVTA	LNSD	U	DEPBNK	TIME	Adjusted R-square	DW	Others	*
1	2.87	5.33		8.52	13.8	4.92	1.92		0.29	1.92		
2	2.94	5.71		8.96	13.72	5.01			0.29	1.87		
3	3.11	6.37		9.97	13.10				0.26	1.80		
4	3.06	1.03			11.47	6.30	3.25		0.22	1.81		
5	3.74			6.61	14.12	5.55	2.78		0.26	1.88		
6	2.83	5.34		8.34	13.87	4.91	1.89		0.29	1.92	–1.63	RECES*
7	2.60	5.59		8.60	13.87	4.98	1.90		0.29	1.92	–1.81	NWTA*
8	3.33	1.31			11.26	6.37			0.21	1.77	1.52	NWTA
9	2.66	5.97		9.02	13.80	5.07			0.29	1.89	–1.83	NWTA*
10	2.61	5.37		7.66	14.22	2.11	1.81	6.02	0.32	1.95		
11	2.66	5.73		8.05	14.14	2.17		6.06	0.32	1.92		
12	2.69	5.73		8.05	14.11	2.10		6.06	0.32	1.92	–0.41	NI/TA
13	2.61	5.37		7.65	14.19	2.08	1.76	5.97	0.32	1.95	–0.12	NI/TA
14	3.21	5.36		7.64	14.15	1.90	1.66	6.28	0.33	1.95	–1.88	NI
15	3.33	5.69		8.00	14.09	1.94		6.35	0.32	1.93	–2.01	NI*
16	1.88	5.81		8.11	14.15	2.26		5.94	0.32	1.92	–1.02	NW
17		–8.74	–12.31	5.56	16.15			8.98	0.43	1.83		
18		–8.70	–12.17	5.42	16.06	1.46		7.56	0.43	1.85		
19		–8.95	–12.42	5.08	16.28		2.47	8.89	0.43	1.86		
20	1.34	–8.65	–12.04	5.56	15.82			8.86	0.43	1.84		
21		–8.71	–12.26	5.57	16.09			8.64	0.43	1.83	0.99	RECES
22		–8.59	–11.94	5.63	15.70			9.03	0.43	1.84	1.78	III+IIL
23		–8.63	–12.01	5.63	17.79			8.79	0.43	1.84	1.72	III+IIL-IE
24		–12.05	–14.05		17.14			10.37	0.41	1.76		
25			–10.74	9.78	18.13			8.02	0.37	1.90		
26	1.32	–11.95	–13.75		16.79			10.25	0.41	1.77		

Criteria

The models have been developed for three purposes: (1) to test the factors and issues that are hypothesized to influence BLTA, (2) to identify the 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 explain a high percentage of the variance of BLTA without autocorrelation among the error terms.

Preferred Models

A number of models in Figure 13 satisfy the criteria, but models 17 and 19 provide superior statistical explanations for BLTA. In each of these models, 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 the 0.0000 probability level. Among the five variables included in both models 17 and 19, two coefficients' t-statistics in model 17 are slightly higher and three are slightly lower.

For models 17 and 19, the F-statistics are 109.86 and 93.22, respectively, indicating the models' strong explanatory power. The DW statistics are 1.83 and 1.86, respectively, indicating very little autocorrelation in each. The adjusted R-square for each model is 0.43.

An R-square of 0.43 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. There are 120 cross-sections and 6 time-series for each cross-section, a ratio of 20 to 1, and the autocorrelation would not appear to compensate for the variations among the many cross-section units.

Credit union size does not dominate their business lending. Models 1–16 in Figure 13 consistently show that total assets is not a dominant variable to explain business loans as a proportion of total assets. Models 18 and 20–23 test additional factors in combinations that might explain BLTA. Models 5, 8, and 24–26 test the impact of deleting one of the asset factors to explain BLTA. 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 almost 50% to 0.23; the coefficients of MLTA and CONSTA become positive, suggesting complements for business loans, and the coefficient of DEPBNK becomes significant at only the 10% probability level. Models 17 and 19 are preferable to the alternatives without LNSD.

Multicollinearity does not appear to be a major issue for most models in Figure 13. Pair-wise correlation coefficients among the independent variables are provided in Figure 14. Only MLTA and CINVTA are correlated in the 50% 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, chap. 12) illustrated how this may occur.

FIGURE 14

SUPERIOR REGRESSION MODELS

Model 17

Dependent Variable: BLTA
Method: Pooled Least Squares
Date: 04/02/15
Time: 08:23

Sample: 1 120
Included observations: 120
Cross-sections included: 6
Total pool (balanced) observations: 720

Variable	Coefficient	Std. error	t-statistic	Prob.
C	–0.003512	0.006648	–0.528227	0.5975
MLTA	–0.186246	0.021319	–8.736167	0.0000
CONSTA	–0.209328	0.017001	–12.31269	0.0000
CINVTA	0.055069	0.009912	5.555819	0.0000
LNSD	0.226044	0.013996	16.15070	0.0000
TIME	0.005503	0.000613	8.979495	0.0000

R-squared	0.434814	Mean dependent variable	0.102017
Adjusted R-squared	0.430856	S.D. dependent variable	0.035825
S.E. of regression	0.027027	Akaike info criterion	–4.375680
Sum squared resid	0.521538	Schwarz criterion	–4.337519
Log likelihood	1581.245	Hannan-Quinn criterion	–4.360948
F-statistic	109.8600	Durbin-Watson statistics	1.831063
Prob(F-statistic)	0.000000		

Model 19

Dependent Variable: BLTA?
Method: Pooled Least Squares
Date: 04/02/15
Time: 08:43

Sample: 1 120
Included observations: 120
Cross-sections included: 6
Total pool (balanced) observations: 720

Variable	Coefficient	Std. error	t-statistic	Prob.
C	–0.002681	0.006633	–0.404263	0.6861
MLTA	–0.190980	0.021329	–8.953793	0.0000
CONSTA	–0.210397	0.016946	–12.41566	0.0000
CINVTA	0.050891	0.010021	5.078606	0.0000
LNSD	0.227203	0.013954	16.28215	0.0000
TIME	0.005433	0.000611	8.887116	0.0000
DEPBNK	2.45E-06	9.90E-07	2.470136	0.0137

R-squared	0.439609	Mean dependent variable	0.102017
Adjusted R-squared	0.434893	S.D. dependent variable	0.035825
S.E. of regression	0.026931	Akaike info criterion	–4.381423
Sum squared resid	0.517113	Schwarz criterion	–4.336903
Log likelihood	1584.312	Hannan-Quinn criterion	–4.364236
F-statistic	93.22105	Durbin-Watson statistics	1.858287
Prob(F-statistic)	0.000000		

Abbreviations 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
III	interest income from investments
IIL	interest income from loans
II	interest income from investment and loans = III + IIL
NII	noninterest income
TR	total income
IE	interest expenses
NIE	noninterest expenses
NI	net income
Deposits	total bank and savings institution deposits in county
Banks	banks and savings institutions headquartered in county
Offices	bank and savings institution offices in county
U	percentage of unemployment in county headquarters

Variables

BLTA = BL/TA

CINVTA = (CASH + INV)/TA

MLTA = ML/TA

CONSTA = CONSTOT/TA

LNSD = LOANS/SD

DEPBNK = DEPOSITS/INSTITUTIONS = DEPOSITS PER INSTITUTION IN COUNTY

DEPOFF = DEPOSITS/OFFICES = DEPOSITS PER OFFICE IN COUNTY

Endnotes

[1] Autocorrelation is removed and corrections included to obtain heteroscedastic-consistent standard errors for the parameter estimates.

[2] Both of the superior models have an adjusted R-square of 0.43, a strong result for estimating across a 20 to 1 ratio of cross-sections to time periods. The Durbin-Watson statistics are close to 2 and the F-statistics are above 90. The ratio of loans to share deposits is a critical link between credit unions' assets and liabilities and substantially enhances the explanatory power of the models.

[3] Reviewing this literature would require an extensive monograph. The overwhelming evidence—beginning with the studies by Bell and Murphy (1967, 1968), Benston (1970, 1972), Flannery (1974), and Benston, Hanweck, and Humphrey (1982), through the recent studies by Wheelock and Wilson (2011) and Hughes and Mester (2013)—shows that economies of scale are pervasive for most insured depository institutions' products, regardless of the sophisticated or elementary cost or production model that is tested.

[4] Wheelock and Wilson (2011) estimate a sophisticated log-linear model to examine potential credit union economies of scale for 1989 through 2006. This is particularly relevant for the current study, which employs time-series data immediately following their data set.

[5] Annual balance sheet and income statement data have been collected for each institution from the National Credit Union Administration 5300 Call Report Aggregate Financial Performance Reports. The variables are listed in Appendix 1. The balance sheet variables include the major credit union assets—total assets, cash plus investments (mainly US government securities), total loans, business loans, consumer loans, and mortgage loans—as well as share deposits, total liabilities, and net worth. In some cases, business loan customers use credit union loans to purchase real estate, automobiles, or other business assets. These loans are included as loans for the purchased asset. The income and expense variables include interest and noninterest income and expenses and net income.

6 The scope of this study has definite limitations. The empirical work is limited to 120 institutions that are considered to be significant business lenders in 2012 on the basis of 2007–2012 time-series/cross-section analyses. The study does not offer a complete model for credit unions that are significant business lenders. Models have not been developed to explain the institutions' risk, incomes, or growth. However, the potential impacts of these factors on BLTA have been tested.

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About the Author

David A. Walker

John A. Largay Professor, McDonough School of Business, Georgetown University

David A. Walker is the John A. Largay Professor, McDonough School of Business, Georgetown University and director emeritus of the Capital Markets Research Center. He is an elected member of the Cosmos Club. The Israel Council on Higher Education appointed him to its business school quality assessment team. He is an advisor to the Georgetown University Alumnae & Student Credit Union. His biography appears in *Who's Who in America*.

He joined the Georgetown faculty in 1980 after serving as director of research for the Office of the Comptroller of the Currency and senior financial economist for the FDIC. Previously he taught at Northwestern University, Penn State University, and Iowa State University, where he earned his PhD and MS in quantitative economics.

Dr. Walker chaired the board of trustees and is past president of Financial Management Association International. He served as executive editor of the *Journal of Financial Research*, coeditor of the *Journal of Entrepreneurial Finance*, and board member for seven finance journals.

He has testified in front of the US House of Representatives Financial Services Oversight and Investigations Subcommittee on Debt and Leverage, the House Committee on Small Business Credit Costs, and the US Senate Banking Committee on Financial and Technological Innovation.

Dr. Walker has been a consultant to the World Bank, TREPP LLC, the Promontory Financial Group, Nathan Associates, the US Small Business Administration, and numerous other companies. He has been qualified as an expert economist by eight federal, state, and local courts. He was the expert economist for Dr. Steven Hatfill, who was exonerated and compensated by the Department of Justice as an incorrect person of interest in the anthrax investigation.

Dr. Walker has published 7 books and monographs and 65 scholarly, peer-reviewed articles, and has presented many research and policy studies at professional meetings. The topics include financing and operations of global

financial service firms, financing small companies, mutual fund performance, trade credit demand and supply, and monetary and fiscal policies. His recent published papers include "Market vs. Administered Federal Reserve Policy Rates" (*Journal of Financial Economic Policy*), "Anticipating the 2012 Presidential Election: Do Markets Matter?" (*Journal of Accounting and Finance*), "Impacts of TARP on Commercial Banks" (*Journal of Applied Finance*), and "Long-Run Credit Growth in the US" (*Journal of Economics and Finance*).

He currently teaches courses on global financial markets and institutions and applied micro- and macroeconomics, and has also taught courses in management science, microeconomics, mathematical economics, and statistics. He has lectured and conducted courses in Australia, China, Estonia, Hungary, India, Japan, Poland, the Czech Republic, the Philippines, Portugal, Singapore, and Thailand and was selected for a Fulbright Award in India.

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Filene

612 W. Main Street
Suite 105
Madison, WI 53703

p 608.661.3740
f 608.661.3933

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