Thrift Involvement in Commercial and Industrial Lending

Steven J. Pilloff and Robin A. Prager, of the Board's Division of Research and Statistics, prepared this article. Michael Howell provided research assistance.

The rapid pace of mergers and acquisitions among financial institutions in recent years has heightened the need to understand competition in banking markets. Questions often arise as to the most appropriate ways to measure competition. One particular issue that has received attention from the bank regulators and antitrust officials who analyze the competitive effects of proposed bank mergers is the weight that should be given to thrift institutions as actual or potential competitors of commercial banks in the provision of financial services. The question arises because, historically, the menu of financial services offered by thrift institutions has been more limited than that offered by commercial banks.

Thrift institutions (savings and loan associations and savings banks) are financial intermediaries that raise funds primarily through time and savings deposits and invest principally in residential mortgages and consumer loans. Their focus on consumer accounts and loans, as opposed to business accounts and loans, is largely attributable to historical factors. Thrift institutions arose in the early nineteenth century to satisfy an unmet demand for small savings accounts and home mortgages in an era when commercial banks had little interest in these lines of business.

Savings and loan associations (originally called building and loan societies) were established to enable wage earners to obtain funds to build or purchase homes. Their balance sheets consisted primarily of residential mortgages on the asset side and savings shares on the liability side. Savings banks were established to encourage savings by poorer members of the working class. Their liabilities consisted mainly of savings deposits, and their assets were somewhat more diversified than those of savings and loan associations, including consumer loans in addition to residential mortgages. Subsequent regulations, at both the state and federal levels, limited the types of deposit accounts that thrifts were permitted to offer and the extent to which they were allowed to invest in non-mortgage assets. The relaxation of federal restrictions (particularly those affecting commercial and industrial lending) starting in the early 1980s has led to greater portfolio diversification by many thrift institutions; however, few thrifts have taken full advantage of their expanded powers.[1]

The limited range of financial services typically offered by thrift institutions compared with commercial banks raises a challenging question for those responsible for assessing the competitive effects of proposed bank mergers and acquisitions.[2] Should thrifts and commercial banks be treated as equal competitors in local banking markets, or should the role of thrifts be discounted because of their less extensive involvement in the provision of commercial and industrial (C&I) loans and other business services?[3] Although the degree of actual competition

---

1. Several key pieces of legislation included provisions that expanded the commercial lending powers of federally chartered thrift institutions. The Depository Institutions Deregulation and Monetary Control Act of 1980 permitted federally chartered savings banks to engage in commercial and industrial (C&I) lending, up to 5 percent of their assets. The Garn–St Germain Act of 1982 empowered federally chartered savings and loan associations to engage in C&I lending, up to 10 percent of their assets, and increased the limit on federally chartered savings banks' C&I lending authority to 10 percent of their assets. More recently, the Economic Growth and Regulatory Paperwork Reduction Act of 1996 increased the C&I lending limits for federally chartered thrift institutions to 20 percent of assets, with the stipulation that all C&I lending in excess of 10 percent of assets must be small business loans.

For a discussion of changes over time in thrift activities, see Jim Burke and Stephen A. Rhoades, "Commercial and Consumer Lending by Thrift Institutions," *Journal of Commercial Bank Lending* (May 1991), pp. 15–24; and Peter S. Rose, *The Changing Structure of American Banking* (Columbia University Press, 1987), pp. 303–24.

2. All proposed bank mergers and acquisitions must be approved by one of three federal banking regulators—the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), or the Federal Reserve. The charter type and Federal Reserve System membership status of the resulting institution and the type of acquiring firm (whether or not it is a bank holding company) determine which federal regulator has jurisdiction. In addition, all proposed bank mergers and acquisitions are subject to review by the Department of Justice, whose antitrust authority applies to most industries.

3. Federal regulators do not take a uniform approach to the treatment of thrift institutions in antitrust analysis. Whereas the FDIC and the OCC tend to treat thrifts and commercial banks equally, the Federal Reserve and the Justice Department in many instances discount the role of thrifts as competitors in the market for banking services. For example, in analyzing the competitive effects of proposed bank mergers, the Federal Reserve constructs measures of

provided by thrifts in the area of C&I lending may be modest, their role as potential competitors could be important. A thrift institution that is actively involved in residential mortgage and consumer lending in a local market could, at least in theory, quickly shift resources into commercial lending if it determines that the risk-adjusted profits to be derived from commercial lending exceed those associated with more traditional thrift activities. Likewise, a thrift that is involved in commercial lending to a very limited extent could increase its involvement in response to profitable lending opportunities. In practice, however, the specialized expertise needed to engage in C&I lending and the perceived need to offer a broad menu of financial services to commercial banking customers may inhibit thrifts from aggressively pursuing commercial lending opportunities.

This article assesses the role played by thrift institutions as competitors of commercial banks in the provision of commercial and industrial loans by examining variations in bank and thrift involvement in C&I lending both over time and across institutions and markets having different characteristics. Two aspects of involvement are examined. ''Participation'' is examined by looking at the proportions of commercial banks and thrifts that have some of their assets in C&I loans, as well as the proportions whose C&I loan-to-asset ratios are above 1 percent and above 5 percent. And ''extent of involvement'' is examined by looking at the average ratios of C&I loans to assets for banks and thrifts that engage in C&I lending. Also examined are the ways in which the change between 1991 and 1997 in an institution's involvement in C&I lending is related to certain institutional characteristics.

Patterns of C&I Lending Activity

To examine patterns of commercial and industrial lending, we looked at variations in lending activity over the period 1991 through 1997 and at the relationship between 1997 lending activity and such variables as institution size, ownership status, and geographic location.[4] The initial sample consisted of commercial banks and thrift institutions that filed either a midyear Report of Condition and Income (Call Report) or a midyear Thrift Financial Report. With certain exceptions, an institution that filed a report was included in the sample if its total assets were reported to be greater than zero and an amount was reported for total loans. Institutions that held more than 25 percent of their assets in credit card loans were excluded because institutions that are heavily involved in such lending often specialize in that activity and do not provide, and therefore do not compete for, many of the retail banking products and services typically provided by commercial banks. (The Federal Reserve typically excludes credit card banks from its analysis of the competitive effects of proposed bank mergers.) Data are as of June 30 of each year.

The two types of thrift institutions included in the analysis, savings banks and savings and loan associations (S&Ls), were examined separately because differences in their origins and in the regulatory restrictions applied to them might have caused them to behave differently with respect to C&I lending.[5]

Variations in C&I Lending Activity over Time

Over the period 1991–97, the number of commercial banks and thrift institutions declined substantially as a result of mergers, acquisitions, and, particularly in the early part of the period, failures.[6] Each year, banks were four to five times as numerous as thrifts (table 1). Within the thrift population, the number of savings banks remained virtually unchanged but the number of savings and loan associations declined more than 60 percent, with many S&Ls converting to savings banks.

Nearly all banks (more than 98 percent) had some of their assets in C&I loans each year, and at least 96 percent had more than 1 percent of their assets in such loans. The share of banks with at least 5 percent of their assets in C&I loans exhibited cyclical behavior, declining from 72 percent in 1991 to less than 69 percent in 1993 as the economy slowed, and then rising during the recovery to reach a level of nearly 76 percent in 1997.

market structure based on the shares of deposits held by institutions in a local geographic market. These measures include 100 percent of commercial bank deposits, but typically only 50 percent of thrift deposits (though in certain cases, they include 100 percent of thrift deposits).

4. The choice of time period was dictated by concerns about the data. The thrift crisis of the 1980s adversely affected the quantity and quality of data available for thrift institutions for several years before 1991.

5. Although credit unions are sometimes included in the definition of thrift institutions, they were excluded from the analysis because of their specialized nature. Credit unions are restricted to serving a group of people with a ''common bond,'' such as membership in a fraternal organization or employment by the same employer. As such, their ability to compete with commercial banks, savings banks, and savings and loan associations is somewhat limited.

6. For brevity, we hereafter refer to commercial banks as ''banks''; when the subject is savings banks, we use the full term.

1. C&I lending by banks and thrift institutions, 1991–97

Type of institution and year	Number of institutions	Institutions with some assets in C&I loans (percent)	Institutions with more than 1 percent of assets in C&I loans (percent)	Institutions with more than 5 percent of assets in C&I loans (percent)	C&I loans as a percent of assets[1]	
					Simple average	Asset-weighted average
COMMERCIAL BANKS						
1991	11,933	99.0	96.4	72.3	10.2	16.6
1992	11,484	99.0	96.4	69.8	9.6	15.0
1993	11,021	99.1	96.4	68.5	9.1	14.2
1994	10,557	99.1	96.8	69.9	9.2	14.0
1995	10,008	99.1	97.0	73.1	9.5	15.3
1996	9,526	99.0	97.2	74.5	9.9	15.3
1997	9,156	98.8	97.0	75.5	10.1	15.7
SAVINGS BANKS						
1991	1,253	76.2	41.7	13.0	2.6	3.4
1992	1,203	74.7	38.4	9.0	2.1	2.5
1993	1,288	71.1	34.9	7.9	2.0	1.5
1994	1,308	69.7	35.5	8.0	2.1	1.4
1995	1,289	71.5	38.3	9.1	2.2	1.7
1996	1,244	74.9	41.4	12.3	2.4	1.9
1997	1,178	77.3	45.2	13.9	2.7	2.0
SAVINGS AND LOAN ASSOCIATIONS						
1991	1,510	51.9	20.7	4.4	1.6	1.6
1992	1,239	48.4	18.8	2.7	1.4	1.1
1993	1,003	49.5	18.1	3.2	1.4	.8
1994	823	48.6	16.6	2.3	1.2	.7
1995	699	48.4	16.7	2.9	1.3	.6
1996	642	51.1	19.2	3.3	1.4	.8
1997	579	53.2	22.5	4.1	1.6	1.0

1. For institutions with some assets in C&I loans. See text note 8 for an explanation of simple and asset-weighted averages.

Although the proportion of thrift institutions engaged in C&I lending was smaller than the proportion of banks, it was still substantial (approximately three-quarters of the savings banks and half the S&Ls engaged in some C&I lending). However, many of these institutions had only a small share of their assets invested in C&I loans: In each year, only about half the thrifts that engaged in some C&I lending had ratios of C&I loans to assets greater than 1 percent. In contrast, the vast majority of banks that engaged in C&I lending had ratios greater than 1 percent. Moreover, the share of thrifts having ratios greater than 5 percent was quite low (less than 15 percent of savings banks and less than 5 percent of S&Ls).

Each of the three C&I lending participation measures for thrift institutions generally followed a pattern of declining and then rising over the study period, in most cases reaching the highest level for the period in 1997. This pattern may simply reflect the cyclical nature of business borrowing. However, the increase in thrift participation in the mid-to-late 1990s may, to some degree, reflect a change in thrift strategy toward greater involvement in such lending, which some analysts attribute to rising competition in residential mortgage lending from nondepository institutions. Support for the latter interpretation of the data is provided by the observation that many thrifts have in recent years eliminated the word ''savings'' from their organizations' names so as to convey to their current and potential customers the message that they now offer a broader array of products than has traditionally been offered by ''savings'' institutions.[7]

Of those institutions that engaged in some C&I lending, banks had annual simple average ratios of C&I loans to assets of 9.1 percent to 10.2 percent over the 1991–97 period, whereas savings banks and S&Ls had simple average ratios of only 2.0 percent to 2.7 percent and 1.2 percent to 1.6 percent respectively.[8] Like the participation ratios, the simple average ratios of C&I loans to assets first declined and then increased over the period. The annual asset-weighted average ratios of C&I loans to assets for banks were typically about 50 percent higher than the simple average ratios, while the weighted aver-

7. Matt Andrejczak, ''Thrifts, Shifting Financial Roles, Find a Name Change Helps the Transition,'' *American Banker*, July 6, 1998.

8. Two types of averages for the ratio of C&I loans to assets were calculated—a simple average and an asset-weighted average. The simple average is the mean of the ratios of C&I loans to assets for all institutions of each charter type that had some assets in C&I loans; it can be viewed as an unweighted average because the C&I lending ratio of each institution receives equal weight in its computation. The asset-weighted average is total C&I loans for all institutions of each charter type divided by total assets for all institutions of each charter type that had some assets in C&I loans; it is a weighted average because an institution's influence on the average is proportional to its size, as measured by assets.

2. C&I lending by banks and thrift institutions, by size of institution, 1997

Type of institution and level of assets (millions of dollars)	Number of institutions	Institutions with some assets in C&I loans (percent)	Institutions with more than 1 percent of assets in C&I loans (percent)	Institutions with more than 5 percent of assets in C&I loans (percent)	C&I loans as a percent of assets[1]	
					Simple average	Asset-weighted average
COMMERCIAL BANKS						
0–25	1,510	96.7	92.8	62.5	8.2	8.3
26–50	2,150	99.3	97.5	73.4	9.4	9.4
51–100	2,334	99.3	97.9	77.0	10.3	10.2
101–250	1,975	99.4	98.1	79.6	10.7	10.7
251–1,000	856	98.5	98.1	84.3	11.6	11.6
More than 1,000	331	98.8	97.3	89.4	15.4	17.3
SAVINGS BANKS						
0–25	70	42.9	24.3	11.4	3.5	3.8
26–50	128	68.0	43.0	19.5	3.4	3.4
51–100	211	73.9	47.4	13.7	3.0	3.0
101–250	322	78.3	44.4	12.7	2.4	2.5
251–1,000	311	83.9	47.9	11.3	2.4	2.4
More than 1,000	136	91.2	50.0	19.1	2.5	1.8
SAVINGS AND LOAN ASSOCIATIONS						
0–25	70	21.4	12.9	4.3	2.8	2.9
26–50	111	42.3	17.1	5.4	1.8	1.9
51–100	153	52.9	25.5	4.6	1.6	1.7
101–250	145	62.1	26.9	2.1	1.5	1.5
251–1,000	81	72.8	23.5	4.9	1.1	1.0
More than 1,000	19	84.2	26.3	5.3	1.6	.7

1. See note 1 to table 1.

age ratios for thrifts were typically below the simple average ratios. This pattern suggests that among banks engaged in C&I lending, larger institutions are more heavily involved in commercial lending than smaller ones, while the opposite is true for thrifts.

Cross-Sectional Variations in C&I Lending Activity

To get a clearer picture of commercial and industrial lending by thrift institutions, lending activity in 1997 was examined in greater detail. Of interest were several factors that might be expected to be associated with cross-sectional variations in lending activity—institution size and ownership status, geographic region, local banking market concentration and type, and firm market share.

Institution Size

Institution size might be expected to influence thrift involvement in C&I lending, though the direction of influence is unclear. Larger thrifts might be more likely than smaller ones to diversify into nontraditional activities such as C&I lending, partly because they may have the financial resources needed to incur the substantial fixed costs often associated with entering a new line of business. Larger thrifts may also be more visible than smaller thrifts, so that businesses view them as more likely sources of commercial loans. However, though participation and the absolute level of involvement may increase with thrift size, C&I lending may not increase proportionally to other aspects of an institution's business. Thus, if the extent of involvement is measured as C&I loans as a share of assets, C&I lending may not be seen to increase with size. Indeed, the data do show that although thrift participation in C&I lending increases with size, average ratios of C&I loans to assets (for those institutions engaged in C&I lending) generally decrease with size (table 2).

For banks having assets of more than $25 million, participation in C&I lending does not vary significantly with institution size; participation is slightly (but statistically significantly) lower for banks having assets of $25 million or less. The proportion with more than 1 percent of their assets in C&I loans also does not vary with size for banks having assets of more than $25 million; however, the proportion with more than 5 percent of assets in such loans increases monotonically with size, from a low of 63 percent to a high of 89 percent.

Thrift participation in C&I lending varies far more with institution size than bank participation does. The proportion of savings banks participating in C&I lending rises with size, from a low of 43 percent for those having assets of $25 million or less to a high of

3. C&I lending by banks and thrift institutions, by ownership status, 1997

Type of institution and ownership status	Number of institutions	Institutions with some assets in C&I loans (percent)	Institutions with more than 1 percent of assets in C&I loans (percent)	Institutions with more than 5 percent of assets in C&I loans (percent)	C&I loans as a percent of assets[1]	
					Simple average	Asset-weighted average
COMMERCIAL BANKS						
Independent	2,048	98.1	94.6	65.1	9.3	10.0
Owned by bank holding company (no thrifts)	6,645	99.2	97.9	78.5	10.4	15.0
Owned by bank holding company (with thrifts)	463	95.9	94.6	78.2	10.9	17.5
SAVINGS BANKS						
Independent	885	74.7	41.8	12.0	2.5	1.6
Owned by thrift holding company	186	80.6	48.4	15.1	2.7	1.6
Owned by bank holding company	107	92.5	67.3	28.0	4.1	3.9
SAVINGS AND LOAN ASSOCIATIONS						
Independent	547	51.6	21.9	4.0	1.6	1.0
Owned by thrift holding company	20	75.0	20.0	.0	.9	.9
Owned by bank holding company	12	91.7	50.0	16.7	2.8	1.6

1. See note 1 to table 1.

91 percent for those having assets of more than $1 billion. A similar monotonic relationship between participation in C&I lending and institution size exists for S&Ls, with the participation rate rising from 21 percent to 84 percent with increasing size. For both types of thrifts, differences in the participation rate between the largest and smallest institutions are highly statistically significant, as are many of the differences between adjacent size categories. The share of thrifts with C&I loan-to-asset ratios greater than 1 percent and 5 percent varies somewhat irregularly with institution size.

For banks involved in C&I lending, average ratios of C&I loans to assets (both simple and weighted) increase with size, with the ratios for the largest institutions (simple average of 15.4 percent, weighted average of 17.3 percent) being approximately double those for the smallest institutions (simple average of 8.2 percent, weighted average of 8.3 percent). (The difference in simple averages between the smallest and largest size categories is significant at the 0.01 level.) In contrast, for thrifts involved in C&I lending, average ratios of C&I loans to assets tend to decrease with size, with the simple average ratio ranging from 3.5 percent to 2.4 percent for savings banks and from 2.8 percent to 1.1 percent for savings and loan associations. (For savings banks, the difference in simple averages between the smallest and largest size categories is significant at the 0.10 level, but for S&Ls the difference is not statistically significant.) Thus, whereas the extent of bank involvement in C&I lending (as a share of assets) is positively related to institution size, the extent of thrift involvement is, for the most part, negatively related to size.

Ownership Status

Ownership status may also influence thrift involvement in C&I lending. Thrifts owned by bank holding companies might be expected to behave more like banks, and thus to be more heavily involved in C&I lending, than independent thrifts or those owned by thrift holding companies. Managers of thrifts affiliated with bank holding companies are likely either to have commercial lending expertise themselves or to have access to others in the holding company who have such expertise.[9]

Bank participation in C&I lending does not vary much with ownership status, except that independent banks are less likely than banks owned by holding companies to have more than 5 percent of their assets in C&I loans (table 3). Nearly all banks, regardless of their ownership status, hold at least 1 percent of their assets in such loans.

Thrift participation in C&I lending, in contrast, does vary with ownership status. Independent thrifts are less likely than those owned by holding companies to engage in some C&I lending; and thrifts owned by thrift holding companies are substantially less likely than those owned by bank holding companies to engage in C&I lending at each of the three

9. In competitive analyses of proposed bank mergers, the Federal Reserve typically treats thrift institutions owned by bank holding companies the same as commercial banks because the expertise of managers of bank holding companies is likely to make thrifts affiliated with them strong potential competitors for many bank products and services.

participation levels.[10] Thus, the data suggest that thrift institutions that are owned by bank holding companies tend to behave more like commercial banks than those under other types of ownership.

The simple average ratio of C&I loans to assets for banks operating under a holding company structure is unaffected by the presence or absence of thrift subsidiaries; the weighted average is slightly higher for banks owned by holding companies that also own thrifts than for banks owned by holding companies that do not own any thrifts. Independent banks have lower average C&I loan-to-asset ratios (simple and weighted) than do banks owned by holding companies.

Average C&I loan-to-asset ratios (both simple and weighted) are higher for thrifts under a bank holding company structure than for independent thrifts and those under a thrift holding company structure. The simple average ratios for thrifts owned by bank holding companies—4.1 percent for savings banks and 2.8 percent for S&Ls— are substantially greater than those for similar institutions not owned by bank holding companies. (Except for the difference between S&Ls owned by bank holding companies and independent S&Ls, these differences are statistically significant at the 0.05 level.) This finding provides further evidence that thrifts owned by bank holding companies behave more like commercial banks than other thrift institutions do.

Geographic Region

C&I lending by thrift institutions might be expected to vary across regions of the country as a result of cultural, historical, or regulatory differences that influence the behavior of depository institutions or their customers. For example, the New England states began to expand the range of activities permissible for state-chartered thrifts in the early 1970s, almost a decade before federal legislation granted expanded powers to thrifts nationwide.[11] This difference might cause New England thrifts to behave more like commercial banks than thrifts in other parts of the country.

For banks, participation in C&I lending varies little across geographic regions (table 4).[12] Although regional differences in C&I lending participation are more pronounced among thrift institutions than among banks, the differences are not consistent across the three participation measures. For example, whereas S&Ls headquartered in the Pacific region are the most likely to engage in some C&I lending, they are the least likely to have C&I loan-to-asset ratios greater than 1 percent and greater than 5 percent.

For banks, the simple average C&I loan-to-asset ratio is around 9 percent or 10 percent everywhere except the Mountain (12.1 percent) and Pacific (15.3 percent) regions. The weighted average ratio is more variable, ranging from just over 11 percent in the Mountain states to nearly 20 percent in New England.

For thrift institutions, simple average C&I loan-to-asset ratios are highest in the East South Central and West North Central regions. Both types of averages are lowest in the Pacific and Middle Atlantic regions. For savings banks, the weighted average ratio for the New England region (4.6 percent) far exceeds that for any other region, with the East South Central region having the second highest (2.6 percent); for S&Ls, it is highest for the East South Central region.

Overall, analysis reveals no consistent pattern of regional differences in the degree to which thrift institutions are involved in commercial lending. Although the weighted average ratio of C&I loans to assets suggests that New England savings banks do substantially more C&I lending than thrift institutions headquartered in other regions of the country, other measures of involvement do not support that conclusion. The unusually high weighted average ratio for New England savings banks appears to be attributable to the behavior of a small number of very large institutions.[13] This finding is particularly interesting, given that previous research on C&I lending by thrift institutions has focused on the weighted average ratio and concluded that New England thrifts behave substantially more like commercial banks than thrifts in other parts of the country do.[14]

10. Among savings banks, differences between independent institutions and those owned by bank holding companies are, for two of the three participation measures, statistically significant at the 0.01 level; the same is true for differences between savings banks owned by thrift holding companies and those owned by bank holding companies, but differences between independent savings banks and those owned by thrift holding companies generally are not significant. For S&Ls, differences between independent institutions and those owned by bank holding companies are, for two of the participation measures, statistically significant at the 0.05 level, but differences between other categories of S&Ls are not statistically significant.

11. For a detailed examination of C&I lending by New England savings banks, see Constance Dunham, ''Mutual Savings Banks: Are They Now or Will They Ever Be Commercial Banks?'' *New England Economic Review* (May/June 1982), pp. 51–72.

12. The regions are equivalent to the divisions used by the Bureau of the Census. Each institution was assigned to the region in which it was headquartered. For a list of states included in each region, see the general note to table 4.

13. The weighted average ratio for the 23 New England savings banks with assets of more than $1 billion is 6.2 percent, compared with 2.6 percent for the 189 New England savings banks with assets of $1 billion or less.

14. See, for example, Jim Burke and Stephen A. Rhoades, ''Commercial and Consumer Lending by Thrift Institutions,'' *Journal of Commercial Bank Lending* (May 1991), pp. 15–24.

4. C&I lending by banks and thrift institutions, by geographic region, 1997

Type of institution and geographic region	Number of institutions	Institutions with some assets in C&I loans (percent)	Institutions with more than 1 percent of assets in C&I loans (percent)	Institutions with more than 5 percent of assets in C&I loans (percent)	C&I loans as a percent of assets[1]	
					Simple average	Asset-weighted average
COMMERCIAL BANKS						
New England	144	93.8	92.4	75.7	10.6	19.8
Middle Atlantic	444	96.2	93.2	65.5	9.6	14.7
South Atlantic	1,125	98.4	95.9	74.5	10.3	14.1
East North Central	1,768	99.0	97.2	74.4	10.3	19.2
East South Central	791	98.9	97.3	72.4	9.0	13.3
West North Central	2,336	99.5	98.5	77.4	9.5	13.3
West South Central	1,579	99.6	97.3	73.6	9.4	16.1
Mountain	529	97.5	94.9	80.9	12.1	11.2
Pacific	440	97.5	96.8	87.7	15.3	16.4
SAVINGS BANKS						
New England	212	90.6	62.7	17.0	3.0	4.6
Middle Atlantic	210	70.0	28.1	7.6	2.0	1.4
South Atlantic	204	76.0	49.0	14.2	2.9	2.5
East North Central	261	66.7	35.6	10.3	2.3	1.8
East South Central	64	85.9	64.1	20.3	3.3	2.6
West North Central	81	82.7	49.4	25.9	3.6	1.8
West South Central	64	89.1	57.8	20.3	3.0	2.0
Mountain	29	89.7	51.7	13.8	2.7	1.9
Pacific	53	69.8	26.4	9.4	1.6	1.2
SAVINGS AND LOAN ASSOCIATIONS						
New England	25	60.0	24.0	4.0	1.4	1.3
Middle Atlantic	98	59.2	18.4	3.1	1.1	.7
South Atlantic	87	48.3	27.6	3.4	1.7	1.1
East North Central	173	49.7	22.0	2.9	1.5	1.4
East South Central	29	41.4	20.7	3.4	2.1	2.0
West North Central	58	56.9	27.6	10.3	2.4	1.6
West South Central	50	54.0	28.0	6.0	2.0	.9
Mountain	17	47.1	17.6	5.9	1.6	1.8
Pacific	42	64.3	11.9	2.4	1.0	.7

NOTE. Geographic regions are the divisions used by the Bureau of the Census. The states in each division are as follows: *New England:* Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont; *Middle Atlantic:* New Jersey, New York, Pennsylvania; *South Atlantic:* Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia; *East North Central:* Illinois, Indiana, Michigan, Ohio, Wisconsin; *East South Central:* Alabama, Kentucky, Mississippi, Tennessee; *West North Central:* Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota; *West South Central:* Arkansas, Louisiana, Oklahoma, Texas; *Mountain:* Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming; *Pacific:* Alaska, California, Hawaii, Oregon, Washington.

1. See note 1 to table 1.

Market Concentration

The generally low level of thrift institution involvement in C&I lending (compared with banks) suggests that there may be significant costs associated with thrift diversification into this line of business, even in markets in which thrifts already do a considerable amount of mortgage and other lending. If this is true, thrifts would be more likely to incur the costs associated with C&I lending in markets in which such lending is especially profitable. One source of high profitability would be high interest rates on commercial loans. Numerous empirical studies have found bank profits or loan interest rates to be positively related to market concentration.[15] To the extent that commercial loan rates are higher (and commercial lending is more profitable) in highly concentrated markets than in less concentrated markets, we would expect to find a positive relationship between market concentration and thrift involvement in C&I lending.

For this analysis, the level of market concentration was measured by the Herfindahl–Hirschman index (HHI).[16] The HHI was calculated as the sum of the squares of the deposit market shares of all banks operating in a particular geographic market.[17] Ideally,

15. See, for example, Timothy H. Hannan, "Bank Commercial Loan Markets and the Role of Market Structure: Evidence from Surveys of Commercial Lending," *Journal of Banking and Finance* (February 1991), pp. 133–49; Timothy H. Hannan and J. Nellie Liang, "The Influence of Thrift Competition on Bank Business Loan Rates," *Journal of Financial Services Research* (June 1995), pp. 107–22; Stephen A. Rhoades, *Structure–Performance Studies in Banking: A Summary and Evaluation*, Staff Studies 92 (Board of Governors of the Federal Reserve System, 1977); and Stephen A. Rhoades, *Structure–Performance Studies in Banking: An Updated Summary and Evaluation*, Staff Studies 119 (Board of Governors of the Federal Reserve System, 1982).

16. For a discussion of the HHI, see Stephen A. Rhoades, "The Herfindahl–Hirschman Index," *Federal Reserve Bulletin*, vol. 79 (March 1993), pp. 188–89.

17. Banking markets were defined as metropolitan statistical areas (MSAs) or non-MSA counties. Considering markets to be local in extent is appropriate because many banking customers, including

5. C&I lending by banks and thrift institutions, by deposit market concentration, 1997

Type of institution and level of deposit market concentration[1]	Number of institutions	Institutions with some assets in C&I loans (percent)	Institutions with more than 1 percent of assets in C&I loans (percent)	Institutions with more than 5 percent of assets in C&I loans (percent)	C&I loans as a percent of assets[2]	
					Simple average	Asset-weighted average
COMMERCIAL BANKS						
Unconcentrated	658	99.4	98.2	79.0	11.9	21.7
Moderately concentrated	2,860	98.6	96.7	75.3	10.6	15.3
Highly concentrated	1,726	98.3	96.8	77.5	10.9	16.3
Very highly concentrated	3,900	99.3	97.4	74.3	9.1	14.4
SAVINGS BANKS						
Unconcentrated	75	52.0	25.3	5.3	2.0	.9
Moderately concentrated	385	73.5	37.9	12.5	2.3	1.7
Highly concentrated	281	80.1	44.5	11.0	2.3	1.4
Very highly concentrated	435	83.2	55.4	18.6	3.3	3.5
SAVINGS AND LOAN ASSOCIATIONS						
Unconcentrated	37	29.7	8.1	2.7	1.0	.5
Moderately concentrated	222	52.0	20.3	2.3	1.3	.8
Highly concentrated	105	54.3	21.0	2.9	1.2	.4
Very highly concentrated	215	58.1	27.9	7.0	2.0	1.9

1. Concentration categories are based on bank-only deposit-based Herfindahl–Hirschman index values, as follows: Unconcentrated, HHI values of 0–1000; Moderately concentrated, 1001–1800; Highly concentrated, 1801–2200; Very highly concentrated, 2201–10,000.

2. See note 1 to table 1.

the HHI would measure concentration on the basis of C&I lending rather than deposits and would be calculated using shares of the C&I lending market. However, market-level data on each institution's C&I lending activity were not available.[18] Therefore, deposit market shares were used as a proxy for C&I lending shares. Because thrift institutions generally do far less C&I lending than banks, thrift deposits were excluded from the calculation of the HHI.[19]

many commercial borrowers, are dependent on local institutions. For evidence supporting the local nature of retail banking markets, see Myron L. Kwast, Martha Starr-McCluer, and John D. Wolken, "Market Definition and the Analysis of Antitrust in Banking," *Antitrust Bulletin*, vol. 42 (Winter 1997), pp. 973–95; Gregory E. Elliehausen and John D. Wolken, "Banking Markets and the Use of Financial Services by Small and Medium-Sized Businesses," *Federal Reserve Bulletin*, vol. 76 (October 1990), pp. 801–17; and Gregory E. Elliehausen and John D. Wolken, "Banking Markets and the Use of Financial Services by Households," *Federal Reserve Bulletin*, vol. 78 (March 1992), pp. 169–81. For firms operating in more than one local banking market, the HHI was calculated as a deposit-weighted average of the HHIs in the markets they served.

18. Geocoded data on the small-business-lending activities of depository institutions reporting under the Community Reinvestment Act have recently become available for analysis. Although these data do permit the calculation of HHIs based on commercial lending, they are of limited value in analyzing cross-sectional patterns of C&I lending behavior because they reflect the activities of a small fraction of depository institutions (1,460 commercial banks and 411 thrifts in 1996) and include only C&I loans of $1 million or less. See Anthony W. Cyrnak, "Bank Merger Policy and the New CRA Data," *Federal Reserve Bulletin*, vol. 84 (September 1998), pp. 703–15, for a detailed analysis employing these data.

19. When HHIs were calculated including thrift deposits—first including 50 percent of thrift deposits (as is often done in Federal Reserve Board analysis of the competitive implications of proposed bank mergers) and then 100 percent of thrift deposits—the results were similar.

Commercial bank participation in C&I lending is unrelated to local banking market concentration, but participation by both savings banks and S&Ls (at each of the three measured participation levels) tends to rise as market concentration increases (table 5).[20] Extent of involvement (as measured by ratios of C&I loans to assets) generally declines with increasing market concentration for banks and rises with increasing concentration for thrifts. (Differences in the simple average ratio of C&I loans to assets between institutions in markets with an HHI above 1800 and those in markets with an HHI of 1800 or less are statistically significant at the 0.01 level for all three types of institutions.) These findings are consistent with our expectations, given the well-established empirical relationship between market concentration and profits.

Urban vs. Rural Markets

Thrift involvement in C&I lending might be expected to differ between urban and rural markets. On the one hand, urban markets are likely to provide greater commercial lending opportunities than rural markets, leading to greater C&I lending activity. On the other

20. The analyses involving market-level variables (tables 5 and 6) are based on data on institutions that reported branch-level deposit data to the FDIC (Summary of Deposits) or the Office of Thrift Supervision (Branch Office Survey). Because branch-level data were not available for all institutions that filed Call Reports or Thrift Financial Reports, the number of institutions included in these analyses is slightly smaller than the number in the preceding analyses.

6. C&I lending by banks and thrift institutions, by type of market and market share, 1997

Type of institution and type of market	Number of institutions	Institutions with some assets in C&I loans (percent)	Institutions with more than 1 percent of assets in C&I loans (percent)	Institutions with more than 5 percent of assets in C&I loans (percent)	C&I loans as a percent of assets[1]	
					Simple average	Asset-weighted average
COMMERCIAL BANKS						
Urban						
All institutions	3,968	98.0	96.4	79.4	12.1	16.5
By market share (percent)						
0.0–0.5	1,632	96.4	94.4	76.9	12.7	15.3
0.6–1.0	517	99.0	96.7	76.8	11.8	15.0
1.1–5.0	1,087	98.8	97.3	78.2	11.2	13.5
5.1–10.0	310	99.7	99.4	85.5	12.4	16.9
Greater than 10.0	422	99.5	99.1	90.5	12.5	17.1
Rural						
All institutions	5,176	99.6	97.7	72.7	8.6	9.4
By market share (percent)						
0.0–5.0	682	99.0	95.0	63.1	8.1	8.6
5.1–10.0	880	99.8	97.4	71.7	8.6	8.9
10.1–20.0	1,341	99.9	98.5	75.8	9.0	9.7
Greater than 20.0	2,273	99.6	98.1	74.0	8.6	9.4
SAVINGS BANKS						
Urban						
All institutions	857	75.6	41.9	12.5	2.5	1.9
By market share (percent)						
0.0–0.5	360	63.3	28.9	8.6	2.2	1.7
0.6–1.0	109	79.8	42.2	10.1	2.1	2.1
1.1–5.0	225	78.7	48.0	14.7	2.7	2.1
5.1–10.0	105	95.2	52.4	15.2	2.4	1.4
Greater than 10.0	58	96.6	79.3	27.6	3.4	2.8
Rural						
All institutions	319	81.8	53.9	17.9	3.2	3.2
By market share (percent)						
0.0–5.0	44	56.8	38.6	13.6	3.1	2.3
5.1–10.0	76	82.9	50.0	11.8	2.3	1.8
10.1–20.0	125	84.8	54.4	18.4	3.2	3.0
Greater than 20.0	74	90.5	66.2	25.7	4.0	4.4
SAVINGS AND LOAN ASSOCIATIONS						
Urban						
All institutions	373	50.7	18.2	2.7	1.3	.8
By market share (percent)						
0.0–0.5	191	36.6	14.1	1.6	1.3	1.4
0.6–1.0	53	50.9	15.1	.0	.7	.5
1.1–5.0	93	69.9	24.7	5.4	1.4	.5
5.1–10.0	26	73.1	19.2	7.7	1.6	1.8
Greater than 10.0	10	80.0	50.0	.0	1.7	1.7
Rural						
All institutions	206	57.8	30.1	6.8	2.1	1.8
By market share (percent)						
0.0–5.0	43	30.2	11.6	2.3	2.1	1.2
5.1–10.0	59	54.2	33.9	8.5	2.3	2.0
10.1–20.0	56	75.0	35.7	5.4	1.9	1.6
Greater than 20.0	48	66.7	35.4	10.4	2.0	2.0

NOTE. Institutions are classified as urban if the majority of their deposits are held in branches located in metropolitan statistical areas and rural if the majority of their deposits are held in branches located in non-MSA counties. Market share is based on deposits.

1. See note 1 to table 1.

hand, concentration levels tend to be lower in urban markets than in rural markets, rendering thrift involvement in C&I lending in urban markets less attractive (because of lower profitability).

The data indicate that thrifts are more extensively involved in C&I lending in rural markets than in urban markets, while the opposite is generally true for banks (table 6).[21] Although most of the differences between urban and rural markets apparent in table 6 are statistically significant, they may be driven by systematic differences in concentration levels or in market shares.[22]

21. Local banking markets were considered urban if they were MSAs and rural if they were non-MSA counties. For an institution operating in both types of markets, the proportion of deposits held in each type was calculated and the institution was classified as operating in the type in which it held the larger share of its deposits. Assigning institutions to one type of market when they had deposits in both types should not have influenced the results because most institutions operated primarily in a single market. The market in which an institution had the greatest share of its deposits was home, on average, to 92 percent of its total deposits.

22. Regression results reported in the technical appendix indicate that when variations in concentration levels and market shares are controlled for, differences between urban and rural markets disappear.

Market Share

A firm's share of market deposits provides a measure of the strength of its presence in the market(s) in which it operates. A thrift institution that captures a large share of market deposits, and hence is locally prominent, may have greater commercial lending opportunities than a similar institution having only a small market share because it is more visible to commercial borrowers. Thus, we would expect to find a positive relationship between a thrift's market share and its C&I lending activity.[23]

For this analysis, institutions in urban and rural markets were treated separately because the number of firms, and hence the ''typical'' market share, tends to be quite different in these two settings. Bank participation in C&I lending does not vary much with market deposit share (table 6). For both savings banks and S&Ls, and in both urban and rural markets, participation is higher among firms having larger shares of market deposits than among those having smaller shares. For banks and S&Ls, extent of involvement is not related to market share; among savings banks, involvement is substantially greater for those in the largest market share category than for those in any other category, with the difference being statistically significant within urban banking markets.

Summary of Cross-Sectional Variations

In summary, although more than two-thirds of all thrift institutions engage in some C&I lending, their level of involvement is generally quite low relative to that of banks. Their participation generally increased over the mid-to-late 1990s after having trended downward earlier in the decade. For both banks and thrifts, participation rates and levels of involvement appear to vary with institution size, ownership status, geographic region, local banking market concentration, and firm market share and between urban and rural areas. Larger thrifts, thrifts owned by bank holding companies, those operating in more concentrated banking markets, those that have captured a larger share of local market deposits, and those operating in rural areas are most likely to be involved in C&I lending.

For those thrift institutions that do engage in C&I lending, the extent of their involvement, as measured by the proportion of their assets invested in C&I loans, tends to decrease with institution size, to increase with market concentration, and to be unrelated to deposit market share; involvement tends to be greater for thrifts owned by bank holding companies and for those operating in rural markets.

23. For firms operating in more than one local banking market, the market share was calculated as a deposit-weighted average of the firm's market shares in all markets that it served.

Changes in an Institution's C&I Lending Activity over Time

Cross-sectional analysis of the C&I lending behavior of banks and thrift institutions leads naturally to some questions about the dynamic aspects of thrift involvement in such lending. For instance, are changes over time in charter type or ownership status associated with changes in an institution's level of C&I lending activity? To address such questions, we examined the average change between 1991 and 1997 in the ratio of C&I loans to assets for firms with different types of ownership and charters.

The sample consisted of all organizations that existed in 1991 as thrifts and were still operating in 1997, either as thrifts or as commercial banks. Of the 2,664 thrifts that reported both financial and branch-level deposit data in 1991, 1,688 were still operating in 1997. Data for 123 of these 1,688 institutions were merger-adjusted, to make the 1991 and 1997 figures comparable.[24] Sixty-four of the surviving institutions were dropped from the sample because they had engaged in at least one acquisition in which only part of an organization was purchased (data for the partial institution could not be obtained, so adjusted 1991 data that would be comparable with the 1997 data could not be constructed). The change in the ratio of C&I loans to assets from 1991 to 1997 was calculated for each of the 1,624 institutions in the final sample. The institutions were then grouped according to their ownership status and charter type in 1991 and 1997, and the (simple) average change in the ratio for each subgroup was calculated.

For most subgroups of thrift institutions, the ratio of C&I loans to assets increased over the period (table 7). Thrifts that converted to bank charters between 1991 and 1997 showed, on average, the largest increases. Although the direction of causality cannot be determined (that is, whether charter changes prompted increases in C&I lending or whether a desire to do more C&I lending led to

24. For each of the merger-adjusted institutions, the procedure involved aggregating financial data for the 1991 institution and for all institutions that were merged into it between 1991 and 1997. For example, if thrift A acquired thrift B in 1993, the 1997 data for thrift A were compared with the 1991 data for the hypothetical combination of thrifts A and B.

7. Change from 1991 to 1997 in ratio of C&I loans to assets, by thrift institution ownership status and charter type

Ownership status and charter type in 1991	Ownership status and charter type in 1997							
	Independent savings bank	Savings bank owned by thrift holding company	Savings bank owned by bank holding company	Independent S&L	S&L owned by thrift holding company	S&L owned by bank holding company	Independent commercial bank	Commercial bank owned by bank holding company
Independent savings bank	.66*** (497)	.71* (48)	2.39** (35)	. . . (0)	. . . (0)	. . . (0)	9.35 (4)	5.71*** (22)
Savings bank owned by thrift holding company	−.85 (3)	.77 (28)	.05 (5)	. . . (0)	. . . (0)	. . . (0)	. . . (0)	1.94 (3)
Savings bank owned by bank holding company	. . . (0)	. . . (0)	2.65 (11)	. . . (0)	. . . (0)	. . . (0)	. . . (0)	3.20** (5)
Independent savings and loan association (S&L)	.51*** (290)	.83** (58)	3.16* (12)	.26*** (536)	.11** (10)	2.36 (6)	6.96* (6)	4.40*** (17)
Savings and loan association owned by thrift holding company	. . . (0)	1.33 (5)	−1.25 (3)	. . . (0)	.50 (9)	−1.72 (3)	. . . (0)	. . . (0)
Savings and loan association owned by bank holding company	. . . (0)	.02 (1)	2.93* (3)	. . . (0)	. . . (0)	2.00 (3)	. . . (0)	12.80 (1)

NOTE. Each table entry, consisting of a pair of figures, represents a unique combination of 1991 and 1997 ownership status and charter type. The top number in each pair of figures is the average change in the ratio of C&I loans to assets, in percentage points, across all institutions in that group; the number in parentheses is the number of institutions in that group. For example, four thrift institutions in the sample that were independent savings banks in 1991 converted to independent commercial banks during the study period; the average ratio of C&I loans to assets for this group of institutions increased 9.35 percentage points over the period.

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 levels.

charter conversion), inspection of the annual C&I loan-to-asset ratios of individual thrifts undergoing charter conversion suggests that increased C&I lending generally followed rather than preceded charter conversion. Thrifts that in 1991 were independent or owned by a bank holding company and in 1997 were owned by a bank holding company also showed fairly large average increases in C&I loan-to-asset ratios.

CONCLUSION

Our analysis confirms that thrift institutions are less likely than commercial banks to engage in commercial and industrial lending and that the extent of involvement of thrifts that do engage in such lending is generally low compared with that of banks. We also identified several factors that are related either to the level of thrift involvement in C&I lending at a given time or to the change over time in the level of such involvement.

Among thrift institutions, savings banks are much more heavily involved in C&I lending than savings and loan associations. Ownership status is also strongly associated with the C&I lending activity of thrifts: Involvement is greater among those owned by bank holding companies than among either independent thrifts or those owned by thrift holding companies.

Although larger thrifts are more likely than smaller thrifts to be involved in C&I lending, for those that are involved in such lending, the proportion of assets invested in C&I loans tends to decline with increasing institution size. Thrifts operating primarily in rural markets tend to be more heavily involved in C&I lending than those operating primarily in urban markets.

Perhaps our most interesting finding is that higher levels of market concentration are associated with greater thrift involvement in C&I lending. This finding has potential implications for antitrust policy. It suggests that a merger that substantially increases concentration in a local banking market may lead to greater C&I lending activity by thrifts operating in that market, thereby mitigating, to some degree, the potential competitive harm (to business customers) resulting from the merger. The effect may be particularly important if the market and the thrifts operating in it have other characteristics associated with greater thrift involvement in C&I lending.

Charter type and ownership status also influence the growth of C&I lending activity over time: Conversion from a thrift charter to a bank charter is associated with a large, statistically significant increase in C&I lending relative to institutions that retain their thrift charters. Among thrifts that retained their thrift charters, those that changed from independent status to bank holding company ownership during the study period and those that were under bank holding company ownership throughout the period showed significantly greater growth in C&I lending activity than did thrifts that were independent or were under thrift holding company ownership at the end of the period.

Our findings indicate that thrift institutions in general are far less involved in commercial and industrial lending than commercial banks but that the extent of involvement varies considerably and systematically with characteristics of the thrift institution and the market(s) it serves. If thrift involvement in C&I lending is taken to be a reasonable indicator of the extent to which thrifts should be treated as equal competitors of commercial banks for purposes of antitrust analysis, our findings support an approach to merger analysis that generally gives reduced weight to thrifts as competitors but allows the weight to be increased for thrift institutions that are unusually active in C&I lending.

Appendix: Regression Analysis

In addition to the univariate analysis presented in tables 1–6, we ran ordinary least squares (OLS) regressions to further examine the relationship between commercial and industrial lending by thrift institutions and various market and firm characteristics. Regression analysis makes it possible to determine whether the relationships observed in the univariate analysis persist when the influence of other co-varying factors is taken into account. The regression equation was estimated for two groups—the 1,755 thrift institutions that reported both branch (Summary of Deposits or Branch Office Survey) and financial (Call Report or Thrift Financial Report) data in 1997 and the 1,217 thrifts in that group that had some assets in C&I loans. Variables were measured as of June 30, 1997, and correspond to those examined in the univariate analysis.

The results of the regression analysis (table A.1) are generally consistent with those of the univariate analysis. In every instance but one, the sign of the coefficient estimate indicates a relationship between the variable and C&I lending similar to that indicated by the univariate analysis. The exception is that regression analysis yields a positive (but statistically insignificant) coefficient on the urban market variable, indicating that thrifts operating primarily in urban areas are more involved in C&I lending than those operating primarily in rural areas, whereas univariate analysis (table 6) indicates the opposite. This discrepancy may be due to the fact that regression analysis controls for other factors that are typically higher in rural markets than in urban markets and are positively related to the extent of C&I lending by thrifts, such as market concentration and the thrift's share of deposits in the market(s) in which it operates (tables 5 and 6). Therefore, the differences between thrift C&I lending in urban and rural areas shown in table 6 may be largely attributable to thrifts in rural markets having larger market shares and

A.1. Estimated coefficients from regression equation explaining ratio of C&I loans to assets for thrift institutions, 1997

Variable	All thrifts	Thrifts with some assets in C&I loans
Intercept	−.004 (.01)	2.874*** (2.94)
Institution characteristics		
Savings bank[1]	.935*** (6.59)	.924*** (4.50)
Size[2]	.037 (.67)	−.186** (2.46)
Ownership status		
Thrift holding company[3]	.282 (1.37)	.362 (1.38)
Bank holding company[4]	1.763*** (6.87)	1.542*** (5.05)
Market share[5]	.043*** (3.58)	.034** (2.26)
Geographic location[6]		
Middle Atlantic	−.725*** (2.96)	−.488 (1.55)
South Atlantic	−.292 (1.14)	.049 (.15)
East North Central	−.620** (2.57)	−.340** (1.10)
East South Central	−.257 (.76)	−.083 (.19)
West North Central	.264 (.85)	.679* (1.71)
West South Central	.004 (.01)	.123 (.30)
Mountain	−.570 (1.30)	−.408 (.72)
Pacific	−1.069*** (3.24)	−.766* (1.74)
Market characteristics		
Market concentration[7]	2.02×10^{-4}*** (2.99)	2.47×10^{-4}*** (2.84)
Urban market[8]	.186 (.84)	.313 (1.03)
Adjusted R-square	.119	.083
Number of observations	1,755	1,217

Note. Numbers in parentheses are *t* statistics.

1. Dummy variable equal to 1 if the thrift is a savings bank, and 0 if it is a savings and loan association.
2. As measured by the natural log of total assets held by the thrift.
3. Dummy variable equal to 1 if the thrift is owned by a thrift holding company, and 0 otherwise.
4. Dummy variable equal to 1 if the thrift is owned by a bank holding company, and 0 otherwise.
5. Deposit-weighted average of the thrift's market share in the market(s) in which it operates.
6. Dummy variable equal to 1 if the thrift is headquartered in the named region (based on divisions used by the Bureau of the Census), and 0 otherwise. New England is the omitted region.
7. Deposit-weighted average of the bank-only deposit-based Herfindahl–Hirschman index in the market(s) in which the thrift operates.
8. Share of thrift's total deposits held in banks located in metropolitan statistical areas.

*, **, *** Significantly different from zero at the 0.10, 0.05, and 0.01 levels.

operating in more concentrated markets than thrifts in urban areas.

Interestingly, the estimated coefficient on the thrift size variable is positive (but statistically insignificant) for the full sample and negative for the sample of thrifts having at least some assets in C&I loans. These findings are consistent with the univariate analysis, which found that participation in C&I lending increases with size but that for those thrifts engaged in C&I lending, the extent of involvement, as measured by the ratio of C&I loans to assets, declines with size. □