Between a Rock and a Hard Place: The CRA–Safety and Soundness Pinch

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Banking entails risk, but can regulators decide how much risk is appropriate?

The rising costs of complying with supervisory demands have brought the issue of regulatory burden to the attention of both lawmakers and bank regulators. But one relatively underappreciated aspect of regulatory burden is the potential for the supervisory process to impose conflicting demands on banks.

In October 1977, Congress passed the Community Reinvestment Act (CRA) as Title VIII of the Housing and Community Development Act. The legislation was designed to encourage commercial banks and thrifts to help meet the credit needs of their communities, including low- and moderate-income neighborhoods, in a manner consistent with safe and sound banking practices. In 1989, the Financial Institutions Reform, Recovery, and Enforcement Act established four possible composite CRA ratings: 1—outstanding; 2—satisfactory; 3—needs to improve; and 4—substantial noncompliance. Federal agencies historically considered twelve factors in deciding how well financial institutions were meeting the goals of the CRA (see Garwood and Smith 1993). Revised regulations announced in April 1995 replaced these factors with three tests—of lending, investment, and service—with the lending test receiving the most weight.[1]

Examiners have always focused on lending activity in determining a bank's CRA rating. The revised CRA rules reflect this focus, as it is difficult for a bank to receive an overall satisfactory rating unless its lending performance is satisfactory. In rating CRA compliance, regulators assess such factors as a bank's overall lending activity in its market area and the degree to which the bank provides credit throughout its market, with particular emphasis on low- and moderate-income neighborhoods and individuals as well as small businesses and farms.

But regulators use very different criteria in assigning safety and soundness ratings to banks. In 1979, federal agencies adopted the Uniform Financial Institutions Rating System. Under this system, ratings originally were derived from on-site evaluations of five factors—capital adequacy (*C*), asset quality (*A*), management (*M*), earnings (*E*), and liquidity (*L*). This CAMEL rating system was revised on January 1, 1997, to include a sixth component.[2] The new *S* component focuses on sensitivity to market risk, such as the risk arising from changes in interest rates. Like the earlier CAMEL ratings, the CAMELS ratings have five levels: 1—basically sound in every respect; 2—fundamentally sound but with modest weaknesses; 3—financial, operational, or compliance weaknesses that cause supervisory concern; 4—serious financial weaknesses

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that could impair future viability; and 5—critical financial weaknesses that render the probability of near-term failure extremely high. (For simplicity, this article applies the term *CAMEL* to both CAMEL and CAMELS ratings.)

Even this brief description of CRA and safety and soundness ratings reveals the potential for conflict. Although safety and soundness is a factor in CRA ratings, banks are encouraged to boost the availability of credit throughout the communities they serve. In contrast, the primary focus of the safety and soundness exam process is the containment of risk in general and credit risk in particular. Lacker (1994) points out some of the potential implications of requiring banks to lend in certain areas or to certain borrowers, including the possibility that regulators might be culpable in the event of large-scale losses on CRA-related loans.

This article formulates and tests hypotheses about the way the potential conflict between CRA objectives and safety and soundness considerations may actually play out in the day-to-day operations of the supervisory process. The next section discusses two types of events involving potential conflict. A framework is then developed for empirically identifying the determinants of CAMEL and CRA ratings, with the goal of testing for conflict between the demands placed on banks by CRA exams, on one side, and safety and soundness exams, on the other. For smaller sized banks in particular, the findings of this exploratory study point to a supervisory process in pursuit of conflicting goals and suggest more thought may be needed regarding the appropriateness of CRA regulations. The article concludes with ideas for further research in this area.

TWO FACES OF BANK REGULATION

One type of potential conflict between CRA objectives and safety and soundness concerns revolves around risks associated with the act's attempt to boost the supply of credit. The second potential conflict discussed in this article involves the resource constraints that arise when a bank has financial problems and is struggling to cope with them.

Aggressive Strategies Hypothesis

To the extent that the CRA exam process rewards aggressive banking strategies, a potential conflict arises with the primary goal of the safety and soundness exam process, which is to contain risk. Increases in lending could tend to help CRA ratings but could hurt CAMEL ratings by triggering asset quality problems. Similarly, if CRA examiners credit banks for pursuing generally aggressive strategies that support high levels of lending but might detract from safety and soundness, the implementation of such strategies could push CAMEL and CRA ratings in opposite directions.

A good example involves the tendency for growth- and lending-oriented banks to manage their equity positions at lower levels than do more conservative banks. As a result, relatively low capitalization may be a common feature of the strategies that closely conform to the credit-enhancing objectives of the CRA. However, banks that manage their capital in this manner leave themselves with a comparatively small cushion between financial loss and insolvency and so may be viewed less favorably from a safety and soundness perspective. This type of conflict and its various implications can be referred to as the *aggressive strategies hypothesis.*

Necessary Retrenchment Hypothesis

The second hypothesis involves the possibility that financial losses might necessitate a redirection of resources, away from CRA objectives and to the process of financial recovery. When a bank encounters financial problems, current legislation and regulations governing the safety and soundness exam process dictate financial retrenchment and corrective action to avoid possible speculative or fraudulent endgames by bank owners and managers, while, at the same time, facilitating either the bank's financial recovery or, if necessary, its prompt closure. The possibility then arises that the CRA exam process may not take into full account the slowdown in CRA-related activities that the situation requires. If this occurs, the CRA exam process may tend to assign inferior ratings to banks struggling with financial difficulties. In this case, the CRA exam process would conflict with safety and soundness considerations. This type of conflict and its various implications can be referred to as the *necessary retrenchment hypothesis.*

A Clarification

It is important to note that both the aggressive strategies and necessary retrenchment hypotheses can operate on two levels. The first concerns whether examiners rate banks in a manner consistent with the hypotheses. The empirical work that follows addresses this issue.

A second question then arises regarding the extent to which bank behavior can be attributed to the rating schemes examiners use. Even if the CRA exam process does reward aggressive

growth and lending strategies, it cannot be inferred from this alone that aggressively managed banks adopt such strategies in order to attain superior CRA ratings. Other motivations may be at work. Similar reasoning applies to safety and soundness exams.

As a result, the scope of this article is limited to the goals of the supervisory process, leaving the task of assessing the success of supervision in motivating bank behavior to other studies.

EMPIRICAL APPROACH

The statistical model used to test the hypotheses under consideration accommodates a distinguishing feature of CRA and CAMEL ratings. The ratings themselves are not continuous variables. In addition, an unsatisfactory safety and soundness rating corresponds to a CAMEL rating of 3, 4, or 5. The unsatisfactory CRA ratings are 3 and 4. Hence, if the purpose is to identify factors that contribute to unsatisfactory ratings, the variables to be explained are of the either–or type; that is, banks are either satisfactory or unsatisfactory from safety and soundness and CRA perspectives.

Because the ratings are in this way limited to certain categories or levels, as opposed to varying continuously over an unlimited range, the statistical estimation uses so-called limited dependent-variable techniques. More specifically, the probit model is used to assess various factors' influences on CRA and CAMEL ratings. For a description of the probit model, see Greene (1993).

As discussed in the next section, another key element in the approach involves the choice of appropriate variables for inclusion in the model as potential determinants of CRA and CAMEL ratings. To include banks of all sizes and locations in the analysis, data availability considerations necessitate a focus on key financial variables that characterize a bank's overall strategy and condition. Variables that address more specific aspects of bank behavior in relation to CRA objectives are not universally reported. The general or summary nature of the variables used here may make the model most relevant for smaller sized banks, where the types of information available to CRA examiners tend to be relatively limited.

DATA

This section describes the variables the analysis uses and their predicted effects on CRA and CAMEL ratings based on the hypotheses developed above. Sample design is also considered.

Variables

To estimate the model, it is necessary to identify sets of variables upon which the results of safety and soundness and CRA exams may depend. Numerous factors are undoubtedly considered in assigning both types of ratings. However, data availability issues, coupled with the need for a parsimonious specification, suggest the best approach is to focus on key variables capable of neatly summarizing a bank's strategy and condition.[3]

Examiners looking at CRA compliance have always maintained a strong focus on lending activity. If in valuing lending activity CRA examiners knowingly or unknowingly reward aggressive banking strategies, financial characteristics typically associated with such strategies might help predict how well a bank does on its CRA exam.

The model has three proxies for aggressive banking strategies to help explain CRA ratings. The first is the ratio of equity capital to total assets (*CAR*). As discussed earlier, it is natural for growth- and lending-oriented banks to manage their equity positions at lower levels than relatively conservative banks. As a result, relatively low capitalization may be a common feature of the strategies that closely conform to the credit-enhancing objectives of the CRA. High *CAR* values are expected to enhance the chances of receiving a substandard CRA rating. On the other hand, because capital is a buffer protecting a bank's solvency from financial loss, a low capital-to-asset ratio may detract from safety and soundness, so that high values of *CAR* should reduce the likelihood of a substandard CAMEL rating. The hypothesized opposing effects of this variable are implied by the aggressive strategies hypothesis.

The model's second proxy for aggressive banking strategies is the ratio of investment securities to total assets (*SEC*). As with low capital, relatively low holdings of securities, which provide a bank with liquidity, may be a common feature of the strategies that closely conform to the credit-enhancing objectives of the CRA. However, as a measure of liquidity, investment securities should reduce the chances of receiving a substandard CAMEL rating. The hypothesized opposing effects of this variable are implied by the aggressive strategies hypothesis.

The model's final proxy for aggressive banking strategies is the loan-to-asset ratio (*LAR*), which provides a direct measure of the

Table 1
Expected Effects of Explanatory Variables

Variable	Definition	Hypothesis	Effect on likelihood of a substandard: CAMEL rating	Effect on likelihood of a substandard: CRA rating
CAR	Ratio of equity capital to assets	*Aggressive strategies*	Reduce	Increase
SEC	Ratio of investment securities to assets	*Aggressive strategies*	Reduce	Increase
LAR	Ratio of total loans to assets	*Aggressive strategies*	Increase	Reduce
TAR	Ratio of past-due loans, nonaccrual loans, and other real estate owned to total loans and other real estate owned	*Necessary retrenchment*	Increase	Increase
ROA	Ratio of net income to average assets	*Necessary retrenchment*	Reduce	Reduce
SIZE	Log of total assets	*Market resources*	Reduce	Reduce
MSA	Equal to 1 if the head office is located in a metropolitan statistical area	*Urban location*	Increase	Increase
ECON	Prior year's logarithmic growth in nominal state gross domestic product	*Economic conditions*	Reduce	Reduce

scale of lending activity. High values for this ratio should reduce the chances of receiving a substandard CRA rating. The aggressive strategies hypothesis would predict that while helping a bank's CRA rating, a high loan-to-asset ratio also might trigger asset quality problems and thereby detract from safety and soundness. The credit risk associated with bank lending has been the primary contributor to financial problems in recent banking downturns.

Measures of bank performance are obvious candidates for inclusion in the model as explanatory variables for CAMEL ratings. As a bank's financial condition deteriorates, its chances of receiving an unsatisfactory CAMEL rating should increase. The model includes two measures of financial condition. The troubled-asset ratio (*TAR*) measures bad outcomes on lending decisions and is expected to increase the likelihood of a substandard CAMEL rating. Troubled assets are defined as loans past due ninety days or more that are still accruing interest, nonaccrual loans, and other real estate owned, which consists primarily of foreclosed real estate. The troubled-asset ratio is troubled assets divided by the sum of total loans and other real estate owned. As such, the ratio primarily reflects the quality of the loan portfolio, but not the scale of bad loan outcomes relative to assets.[4] In addition, the return on assets (*ROA*) indicates the strength of current earnings and so should reduce the chances of a substandard safety and soundness rating. The necessary retrenchment hypothesis would predict that, in hurting a bank's CAMEL rating, deteriorating financial conditions might also necessitate a retrenchment from CRA objectives and result in a substandard CRA rating.

In addition to the variables serving as proxies for financial condition and aggressive banking strategies, the model has three other types of indicators. Bank size is measured by the natural logarithm of total assets (*SIZE*). Large banks may have more financial flexibility than small banks because of greater diversification potential and closer access to financial markets. These types of considerations, which can be called the *market resources hypothesis*, suggest relatively large banks may have less difficulty maintaining satisfactory CAMEL and CRA ratings.

An urban location may subject banks to especially strong competitive pressures, thereby increasing the difficulty of maintaining good ratings. In addition, because such banks may be closer to low-income neighborhoods given priority by the CRA, an urban location may result in greater challenges with respect to CRA compliance, thereby further increasing the difficulty of maintaining a satisfactory rating. The model has an indicator variable (*MSA*) for location in a metropolitan statistical area to control for these potential effects, which can be called the *urban location hypothesis*.

And finally, the prior year's logarithmic growth in nominal state gross domestic product (*ECON*) is included in both equations to control for potential economic effects. By contributing to a favorable operating environment, a strong economy might, under the *economic conditions*

hypothesis, help reduce the chances of receiving a substandard CAMEL or CRA rating. Table 1 summarizes the model's variables and their expected effects on the likelihood of a substandard CAMEL or CRA rating.

Sample Design

Several considerations help shape the sample of regulatory ratings the analysis uses. First, an effort is made to ensure the CAMEL and CRA ratings used were assigned at times as close as possible to the date of the financial variables. Cole and Gunther (1998) show CAMEL ratings can become stale quickly, and the same may be true for CRA ratings. To match up the two types of ratings, the analysis considers only the first safety and soundness or CRA exam opened in a given year. Moreover, if a safety and soundness exam was conducted in a given year but a CRA exam was not, the corresponding CAMEL rating is discarded. Similarly, CRA ratings without companion CAMEL ratings are excluded from the analysis. Financial data are from regulatory reports as of the end of the previous year. Matching up the two types of ratings in this manner provides an opportunity to examine the extent to which CRA and safety and soundness problems coincide.

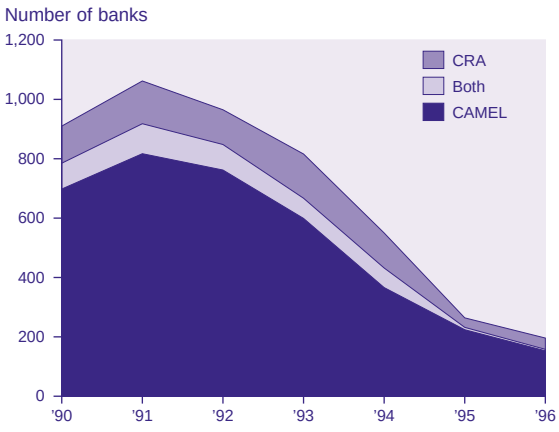
In addition, each bank included in the analysis is required to have been active for at least four years. This restriction is necessary to avoid the atypical financial characteristics of young banks. Also, banks reporting no loans at all are excluded. For consistency, the analysis is limited to banks; savings and loan institutions examined by the Office of Thrift Supervision are not considered. Finally, the limited availability of CRA ratings prevents the analysis from extending prior to 1990, while a paucity of problem CRA ratings precludes meaningful estimation subsequent to 1996. The resulting sample contains 25,424 pairs of CAMEL and CRA ratings.[5] Banks are included in the sample more than once if they received a pair of ratings in more than one year. The 25,424 pairs of CAMEL and CRA ratings used in the analysis represent observations on 10,910 individual banks.

Figure 1 shows the number of problem CAMEL and CRA banks in the sample. The relatively large number of problem banks in the early years of the sample reflects the energy and real estate downturns that adversely affected the banking industry in several regions during that period. There is a noticeable tendency for CAMEL and CRA problems to grow and decline in tandem, suggesting the existence of a direct relationship or common cause. On the other hand, a sizable number of banks with safety and soundness problems avoided substandard CRA ratings. Similarly, many banks with CRA shortcomings nevertheless received favorable CAMEL ratings. The substantial degree of independence in the ratings is consistent with the view that factors exist that either affect only one of the ratings or actually drive the ratings in opposite directions.

Before turning to the estimation results, it is instructive to examine the means of the explanatory variables. Based on the variable means, banks with safety and soundness problems tend to have lower capital and liquidity, more loans, worse asset quality, and lower income than banks with favorable CAMEL and CRA ratings, as shown in the first and second columns of Table 2. Many of these relationships are reversed, though, for banks with CRA problems (column 3). These banks tend to have more capital, more liquidity, and fewer loans than banks with no problem ratings. This is especially true for the banks with substandard CRA ratings but favorable CAMEL ratings, as shown in the fourth column. The banks with both CAMEL and CRA problems (column 5) appear similar in many respects to all banks with CAMEL problems. Finally, banks with substandard CAMEL or CRA ratings tend to be smaller and less rural than problem-free banks, and the problem banks tend to be located in relatively slow-growing states.

This characterization of the relationships between the explanatory variables and problem

Figure 1
Sample of Problem Banks



NOTES: Banks with a CAMEL rating of 3, 4, or 5 are considered safety and soundness problems. Banks with a CRA rating of 3 or 4 are considered CRA problems. The sample is based on data restrictions described in the text.

SOURCES: Board of Governors; Federal Financial Institutions Examination Council.

ratings does not take into account the substantial degree of correlation that exists between the various explanatory variables. The statistical analysis that follows overcomes this shortcoming.

RESULTS

Table 3 shows the estimation results for the probit model of CAMEL and CRA ratings. The model is run separately for each of the seven years considered and for all seven years combined. The CAMEL rating equation is in the upper panel, and the CRA rating equation is in the lower panel.

The bank capital results strongly support the aggressive strategies hypothesis. Higher capital reduces the likelihood of a substandard safety and soundness rating in each of the seven years and in the combined sample, reflecting capital's role as a buffer against financial loss. In contrast, high capital ratios also raise the probability of a substandard CRA rating in five of the seven years and in the combined sample, consistent with the view that relatively low capitalization is common in aggressive strategies that closely conform to the credit-enhancing objectives of the CRA. The opposing signs for *CAR* in the CAMEL and CRA equations highlight the conflict between CRA objectives and safety and soundness standards.

Investment securities, however, do not support the aggressive strategies hypothesis. Securities holdings reduce the likelihood of a substandard CAMEL rating in four of the seven years and in the combined sample, consistent with their liquidity role. However, the variable *SEC* significantly affects CRA ratings in only one of the seven years and with a negative sign. In the combined sample, *SEC* is significant at the 1-percent level, but again with the wrong sign. The insignificance of *SEC* in six of the seven years suggests its effect on CRA ratings is relatively weak.

The loan-to-asset ratio results support the aggressive strategies hypothesis. For six of the seven years and in the combined sample, the ratio of loans to total assets, *LAR*, has the expected negative influence on the chances of a substandard CRA rating. This result supports the view that favorable CRA ratings are associated with high loan concentrations. In addition, *LAR* is significant in the CAMEL rating equation in five separate years and in the combined sample. Its sign is positive for each of the seven years and the combined sample, consistent with the aggressive strategies hypothesis, which implies that high lending activity, and therefore a strong CRA rating, can lead to substandard financial performance.

Table 2
Means of Explanatory Variables

	Type of problem				
	None	Safety and soundness	CRA	CRA only	Both
CAR	9.49	7.35	10.06	11.46	7.66
SEC	32.52	22.74	33.39	40.39	21.37
LAR	52.71	57.81	47.41	41.60	57.39
TAR	1.77	6.67	4.56	2.55	7.99
ROA	1.14	.05	.52	1.03	–.35
SIZE	11.03	10.86	10.80	10.84	10.73
MSA	39.96	55.97	64.86	59.61	73.87
ECON	5.50	5.10	5.01	5.06	4.92
Observations	20,661	4,040	1,144	723	421

NOTE: All the variables except *SIZE* are multiplied by 100. See notes to Figure 1.

SOURCES: Board of Governors; Federal Financial Institutions Examination Council.

The empirical results also strongly support the necessary retrenchment hypothesis. The troubled-asset ratio, *TAR*, and the return on assets, *ROA*, have the expected effects in the CAMEL rating equation in each of the seven periods and in the combined sample. High levels of *TAR* and low levels of *ROA* are associated with substandard CAMEL ratings. Moreover, *TAR* has the expected effect in the CRA rating equation in five of the seven years and in the combined sample. *ROA* significantly affects CRA ratings in four separate years and in the combined sample. The positive effect of financial problems on both the likelihood of receiving a substandard CAMEL rating and the chances of a substandard CRA rating is consistent with the necessary retrenchment hypothesis.

An alternative explanation for the positive association between financial problems and substandard CRA ratings is bad management. According to this view, if its management is bad, a bank is likely to perform poorly in all dimensions, including CRA compliance. If this view is correct, financial problems do not lead to substandard CRA performance; rather, financial and CRA problems reflect a common factor—bad management.

One way to test the role of management is to analyze the timing of CRA and safety and soundness problems. If both types of problems simply reflect bad management, then they would tend to occur at the same time. On the other hand, if the necessary retrenchment hypothesis is correct, then safety and soundness problems might occur first, followed by problems with CRA compliance.

Table 3

Estimation Results for a Probit Model of CAMEL and CRA Ratings

Index for Probability of Safety and Soundness Problems (CAMEL rating of 3, 4, or 5)

Year	*Constant*	*CAR*	*SEC*	*LAR*	*TAR*	*ROA*	*SIZE*	*MSA*	*ECON*
1990	.125	–13.910*	–.926†	2.240*	21.368*	–65.139*	–.079*	–.131	1.122
	(.460)	(1.574)	(.415)	(.418)	(1.213)	(5.526)	(.031)	(.077)	(2.086)
1991	.096	–11.801*	–1.401*	1.549*	21.747*	–70.175*	–.064†	–.030	4.769*
	(.435)	(1.408)	(.379)	(.388)	(1.157)	(5.020)	(.026)	(.069)	(1.517)
1992	.301	–14.573*	–.952*	2.594*	20.753*	–52.388*	–.140*	.003	2.601
	(.425)	(1.516)	(.367)	(.383)	(1.040)	(4.343)	(.026)	(.066)	(1.681)
1993	.616	–10.344*	–.648	1.918*	20.235*	–61.753*	–.157*	–.067	–1.259
	(.415)	(1.303)	(.405)	(.413)	(1.013)	(4.664)	(.026)	(.066)	(1.524)
1994	1.414*	–9.609*	–1.031†	.848	21.322*	–61.747*	–.201*	.182†	–.101
	(.522)	(1.669)	(.477)	(.499)	(1.296)	(5.070)	(.032)	(.078)	(1.902)
1995	1.290	–6.750*	–.817	.994	23.974*	–44.975*	–.235*	.183	–3.569
	(.715)	(1.697)	(.654)	(.664)	(1.701)	(5.185)	(.042)	(.096)	(2.313)
1996	.544	–4.700*	–1.426	1.480†	19.486*	–80.652*	–.199*	.027	4.752
	(.794)	(1.754)	(.752)	(.755)	(1.898)	(8.033)	(.049)	(.110)	(4.172)
All years, all banks	1.122*	–12.208*	–1.354*	1.291*	21.779*	–61.524*	–.150*	–.011	.170
	(.176)	(.568)	(.163)	(.165)	(.455)	(1.917)	(.011)	(.028)	(.607)
All years, small banks	1.041*	–11.663*	–1.295*	1.293*	21.105*	–62.765*	–.146*	–.007	.428
	(.208)	(.580)	(.176)	(.180)	(.473)	(2.063)	(.017)	(.029)	(.635)
All years, large banks	1.090	–24.797*	–1.748*	2.055*	31.371*	–47.265*	–.148*	.074	–.784
	(.797)	(2.754)	(.553)	(.502)	(1.830)	(5.595)	(.040)	(.168)	(2.184)

Index for Probability of CRA Shortcomings (CRA rating of 3 or 4)

Year	*Constant*	*CAR*	*SEC*	*LAR*	*TAR*	*ROA*	*SIZE*	*MSA*	*ECON*
1990	–.358	2.742†	–.436	–1.217*	.992	–9.997*	–.091†	.580*	2.669
	(.490)	(1.075)	(.409)	(.421)	(.949)	(3.865)	(.037)	(.083)	(2.305)
1991	–1.197*	3.484*	–.177	–1.045*	2.297†	–12.006*	–.009	.481*	–2.002
	(.459)	(.917)	(.382)	(.404)	(.894)	(3.630)	(.029)	(.076)	(1.658)
1992	–1.177†	4.496*	–.195	–.720	2.285†	–14.695*	–.053	.653*	–4.613
	(.489)	(.989)	(.406)	(.423)	(.931)	(3.757)	(.033)	(.082)	(2.370)
1993	–.712	5.479*	–.127	–1.008†	2.767*	–16.245*	–.086*	.588*	–5.086*
	(.454)	(.894)	(.415)	(.433)	(.897)	(3.862)	(.031)	(.079)	(1.638)
1994	.145	2.557*	–.771	–2.193*	4.592*	–5.630	–.090*	.584*	–3.017
	(.506)	(.938)	(.424)	(.458)	(.987)	(3.444)	(.032)	(.085)	(2.036)
1995	.284	2.180	–1.459†	–3.724*	5.444*	–5.948	–.087	.501*	2.371
	(.919)	(1.412)	(.675)	(.726)	(1.869)	(5.150)	(.060)	(.157)	(3.779)
1996	1.523	1.230	.010	–4.427*	2.912	–10.311	–.129	.580*	–13.143†
	(1.021)	(1.248)	(.738)	(.854)	(2.318)	(7.308)	(.067)	(.179)	(5.995)
All years, all banks	–.057	2.807*	–.604*	–1.738*	3.197*	–11.080*	–.084*	.537*	–3.733*
	(.191)	(.368)	(.164)	(.171)	(.379)	(1.474)	(.013)	(.033)	(.711)
All years, small banks	.185	2.712*	–.786*	–1.954*	2.837*	–12.401*	–.089*	.532*	–3.519*
	(.232)	(.383)	(.179)	(.189)	(.401)	(1.561)	(.019)	(.034)	(.752)
All years, large banks	–1.503	2.821	.725	–.342	6.238*	2.277	–.072	.577†	–5.900*
	(.826)	(1.447)	(.501)	(.488)	(1.215)	(4.909)	(.045)	(.227)	(2.274)

NOTES: Standard errors are in parentheses. Small banks have total assets of less than $250 million. Significance levels: † 5 percent, * 1 percent.

For the banks in the sample that experienced both CAMEL and CRA problems simultaneously, which type of problem occurred first, or did they begin at the same time? There are 421 observations, representing 355 individual banks, in the combined sample for which both the CAMEL rating and the CRA rating are substandard. Taking the first year in which these banks experienced both types of problems as the base year, 104 of these 355 banks are represented in the combined sample at some earlier point in time. For each of these 104 banks, then, it is possible to examine a pair of ratings received prior to the development of joint CAMEL–CRA problems.

Looking at the first preceding pair of ratings available, 66 of the 104 banks, or 63 percent, had CAMEL problems prior to developing both CAMEL and CRA problems. In contrast, only 13 of the 104 banks, or about 12 percent, had CRA problems prior to developing both types of problems. Based on these data, safety and soundness problems, but not CRA compliance problems, tend to precede the development of simultaneous CAMEL–CRA problems. This finding gives further support to the necessary retrenchment hypothesis.

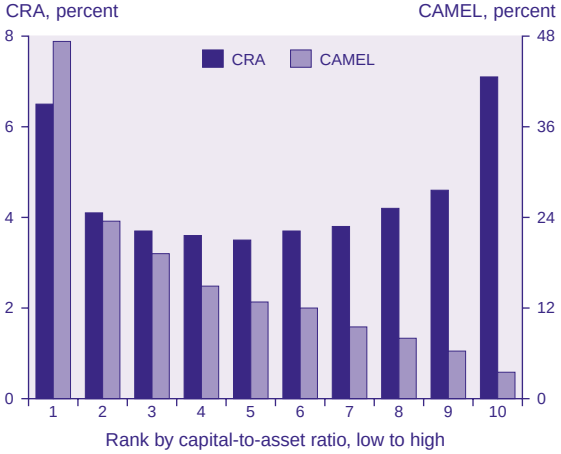
Two other variables included in the model—*SIZE* and *MSA*—also generate some interesting findings. In each of the seven years and in the combined sample, *SIZE* reduces the chances of receiving a substandard CAMEL rating, as the market resources hypothesis predicts. *SIZE* also significantly reduces the chances of receiving a substandard CRA rating in three of the years and in the combined sample. Moreover, while *SIZE* is significant in only three periods, its sign is negative for each of the seven years. *MSA* is significant and positive in the CAMEL rating equation for only one period. However, an urban location consistently raises the likelihood of receiving a substandard CRA rating, as the urban location hypothesis suggests.

The variable measuring economic conditions, *ECON*, is significant in the CAMEL rating equation for only one period, and contrary to expectations, its sign is positive. In the CRA rating equation, *ECON* is significant for two of the seven years and for the combined sample, with a negative sign, consistent with the economic conditions hypothesis.

The last two rows in the upper and lower panels of Table 3 show the results of estimating the CAMEL and CRA rating equations for small banks and large banks separately. Small banks are defined as having total assets under $250 million.[6] For both the CAMEL and CRA rating equations, the small bank results are qualitatively identical to the results for all banks. There are disparities, however, in the results for the large banks. While the estimated CAMEL rating equation for the large banks is very similar to the estimated CAMEL rating equation for all banks, the CRA rating equation does not appear well specified for the large banks. In particular, only *TAR*, *MSA*, and *ECON* are significant in the CRA rating equation for large banks. *LAR*, which is a key variable in the CRA rating equation for small banks, is insignificant in the CRA rating equation for large banks. These disparities suggest the results of the analysis for all banks are driven primarily by smaller banks. Because detailed data on lending to particular neighborhoods and borrowers tend to be more readily available at large banks, CRA examiners may place less weight on a large bank's overall level of lending and focus more on the distribution of lending across neighborhoods and borrowers of different income levels.

To help understand the implications of the estimation results reported in Table 3, it is useful to examine the predicted probabilities of substandard CAMEL and CRA ratings for different groups of banks. Figure 2 uses the estimation results for the entire combined sample to show these probabilities for ten equally sized groups of banks sorted by the capital-to-asset ratio. The first group contains the most thinly capitalized banks; that is, it contains the first 10 percent of the observations based on the banks'

Figure 2
Average Probability of Problem Status, by Capital-to-Asset Ratio

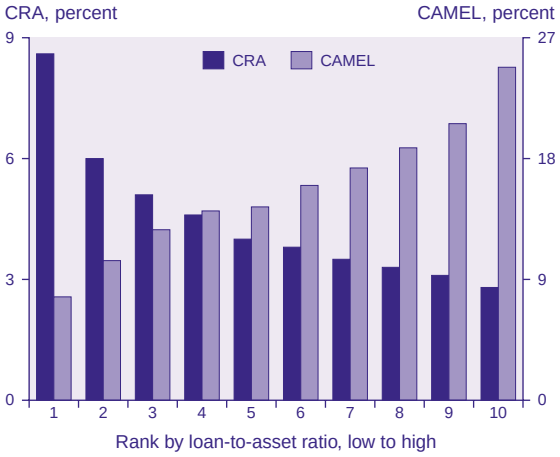


NOTES: See notes to Figure 1.

SOURCES: Board of Governors; Federal Financial Institutions Examination Council.

Figure 3

Average Probability of Problem Status, by Loan-to-Asset Ratio



NOTES: See notes to Figure 1.

SOURCES: Board of Governors; Federal Financial Institutions Examination Council.

capital-to-asset ratios. The tenth group contains the top 10 percent of the observations based on the capital-to-asset ratio. Capitalization is chosen as the measure by which to sort the observations in appreciation of the fundamental role of capital, both in the characterization of bank risk and in the structuring of supervisory actions. As discussed earlier, low capital typically reflects relatively high risk, while high capital usually is part of an overall conservative banking strategy.

As shown in Figure 2, banks with very low capital tend to have relatively high probabilities of receiving substandard CAMEL and CRA ratings. Many of these banks have severe financial problems, which, as predicted by the necessary retrenchment hypothesis, tend to spill over into the area of CRA compliance. The chances of receiving substandard ratings subsequently fall with increases in capital, but only up through the fifth group of banks. After that point, further increases in capitalization actually increase the likelihood of a substandard CRA rating, even while the chances of a substandard CAMEL rating continue to fall. The divergence in the paths of the two probabilities as capital moves from its median to higher values portrays the aggressive strategies hypothesis at work. The results in Figure 2 indicate that banks with the best CRA ratings tend to fall in the middle of the risk spectrum. While the majority of banks in each of the ten capital groups are likely to avoid problem status, the probability of CRA problems is nevertheless distributed away from the sample median.

Figure 3 is constructed in a manner similar to Figure 2, except the observations are now ranked according to the loan-to-asset ratio rather than the capital-to-asset ratio. The average probability of a substandard CRA rating declines as the loan-to-asset ratio increases, whereas the probability of a substandard CAMEL rating rises along with the loan-to-asset ratio. The opposing paths of the two probabilities again show the aggressive strategies hypothesis at work.

CONCLUSION

The empirical analysis presented here provides evidence of conflict for small banks between the enforcement of safety and soundness standards and CRA compliance. High loan concentrations tend to help CRA ratings while hurting CAMEL ratings. Bank capital, the centerpiece of safety and soundness supervision and regulation, is associated with favorable CAMEL ratings but increases the likelihood of a substandard CRA rating. Finally, banks with financial problems are more likely to be downgraded by the CRA exam process, even though a shift away from CRA objectives may be necessary to facilitate financial recovery.

Several important areas of research remain. The revised CRA regulations announced in April 1995 were not fully implemented for small banks until the beginning of 1996 and for large banks until July 1997. Relationships under the earlier regulations may not fully carry over to the new regulatory regime. A full assessment of this issue would, unfortunately, require a new round of financial problems, with the revised regulations in place. In addition, it would be useful to introduce where possible more detailed data on lending to various income classes of neighborhoods and borrowers. This effort may yield additional insights on the determinants of CRA ratings, particularly for large banks.

Nevertheless, the findings of this study, which provide a first look at CAMEL–CRA rating pairs, point to a supervisory process in pursuit of conflicting goals, particularly at smaller sized banks. Banking entails risk, but can regulators decide how much risk is appropriate? From the safety and soundness perspective, regulators are concerned with the potential for excessive risk. From the CRA perspective, it appears that the exam process rewards aggressive banking strategies. These opposing supervisory forces represent a pinch for banks seeking to establish relatively conservative risk postures, in that the chances of receiving a substandard CRA rating increase as risk is reduced. Similarly, it also appears that the CRA exam process does not

take into full account the resource constraints associated with financial problems. This tension between CRA objectives and safety and soundness standards has been an underappreciated cost of the CRA and suggests further thought is necessary regarding the appropriateness of CRA regulations.

NOTES

The author would like to thank, without implicating, Bob Avery, Raphael Bostic, Glenn Canner, Tom Saving, and Nancy Vickrey for helpful discussions and comments.

1 For an overview of the revised regulations, see Federal Reserve Board (1995).

2 For an overview of the revised rating system, see *Federal Register* (1996).

3 With respect to CRA ratings, a detailed approach to specification, as opposed to the summary approach used here, requires knowledge of the geographic areas constituting the CRA assessment communities for individual banks, as well as data on community development loans, lending to low- and moderate-income neighborhoods and individuals, and lending to small businesses and farms. Such data are not generally available for the banks and periods this analysis uses. See Bostic and Canner (1998) for a description of the detailed CRA data large banks began reporting in 1996.

4 The safety and soundness effect of loan quality, as measured by *TAR*, generally depends on the scale of lending activity. The loan-to-asset ratio, *LAR*, is included in the model to capture this scale effect. The nonlinearity inherent in the probit model allows for an influence of *LAR* on the safety and soundness effect of *TAR*.

5 The data for 1990 include 2,796 observations, with 785 CAMEL problem banks and 212 CRA problem banks. The corresponding data for 1991 are 3,267, 918, and 245; 1992—3,804, 848, and 203; 1993—4,656, 667, and 217; 1994—4,299, 432, and 184; 1995—3,624, 232, and 40; and 1996—2,978, 158, and 43.

6 The combined sample includes 22,733 small-bank observations, with 3,642 CAMEL problems and 1,036 CRA problems. There are 2,691 large-bank observations, with 398 CAMEL problems and 108 CRA problems.

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