

The Effects of Bank Lending Practices on CRA Compliance Examination Scheduling and Non-Compliant Banks' Recovery 1990—1998

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This study extends past research examining the Community Reinvestment Act (CRA) compliance examinations. Using the sample period 1990–1998, we assess: 1) if CRA compliance examiners consider a bank's lending practices in scheduling its next examination, 2) if these lending practices influence its ability to recover from a substandard rating by the next examination, and 3) if structural changes in the examination scheduling and recovery probability occur following the 1995 passage of the amendments to the CRA examination criteria. We observe that a bank's current loan levels and loan quality exert significant influence on the scheduling of the next examination. We find some evidence that the probability of non-compliant banks' recovery by the next examination is influenced significantly by its loan levels and loan quality. We also observe the time interval between examinations is significantly longer after 1995, especially for smaller banks. We also find some evidence that the OCC was more lax than other regulators, perhaps in hopes of having more banks seek national charters.

Introduction

Few regulations have generated more controversy among financial institutions than the Community Reinvestment Act (CRA). Its fundamental premise, that

depositories who take deposits from local markets should reinvest in local markets, has led to criticism by both proponents and opponents of the act. While opponents view it as a severe burden on credit allocation decision making, proponents argue that examiners have been overly lenient in their assessment of institutional performance. The latter issue leads directly to the question of whether CRA compliance examination procedures are related to objective, measurable criteria.

The degree of objective versus subjective assessment by compliance officers, given the wide array of institutions operating under different financial conditions and serving vastly different types of communities, has been a big question mark since the passage of the CRA. Studies by Gunther (1999) and Harrison (1999) that find that cross-sectional variation in CRA ratings are linked to bank-specific characteristics support the argument that compliance examination procedures are related to objective, measurable criteria. On the other hand, studies such as Bierman, Fraser, and Zardkoohi (1994) and Thomas (1998) suggest that CRA standards are so vague that supervisors basically can assign any rating they want. Other studies by Garwood and Smith (1993) and Thomas (1993) find that CRA examinations are inconsistent, giving credence to the argument that compliance examination procedures are overly subjective. This concern for excessive subjectivity led to the 1995 revisions of the CRA calling for more explicit performance standards.

More recent studies of safety and soundness examinations by Flannery and Houston (1999), Hirtle and Lopez (1999), and O'Keefe and Dahl (1999) provide mixed evidence of supervisory variation in examination frequency. Other studies examining determinants of CRA ratings by Gunther (1999), Harrison (1999), and Bierman et al. (1994) rely on cross-sectional comparisons at a particular point in time and also provide mixed findings. A study by Dahl et al. (2003) examines how supervisors evaluated bank compliance with the CRA prior to the passage of the new standards in 1995. They find that a bank's loan levels, size, and affiliation status influence both the scheduling and persistence of CRA ratings over the time period 1990 to 1996.

In this paper, we build on past studies of CRA examination practices by examining a sample of 25,146 CRA examinations of banks over the years 1990 through 1998. We first examine if CRA compliance examiners consider a bank's lending practices in scheduling its next examination. We then focus on the 1,265 observations in our sample receiving a substandard CRA rating and examine if the bank's lending practices influence its ability to recover from the substandard rating by the next examination. We also test for structural changes in the examination and recov-

ery process following the 1995 passage of the amendments to the CRA examination criteria.¹

We observe that a bank's loan levels and loan quality exert significant influence on the examination scheduling. We find some evidence that the probability of non-compliant banks' recovery is significantly influenced by its current loan levels and loan quality. We also observe the time interval between examinations is significantly longer after 1995, especially for smaller banks. In addition, we observe that the time interval until the next examination is influenced by a bank's capitalization, current CRA rating, principal regulator, size, and if it is in a SMSA (Standard Metropolitan Statistical Area). We also observe evidence that the probability of non-compliant banks' recovery is significantly influenced by the degree of its non-compliance (3 versus a 4 rating), return on assets, principal regulator, if it is part of a holding company, and if it is in a SMSA.

Evolution of the CRA

The CRA was enacted by Congress, and signed into law in 1977. The act was designed to encourage banks and thrifts to meet the credit needs of the local community, including low- and moderate-income neighborhoods. More specifically, the act defined the local market of the bank or thrift relative to its deposits and required the institution to focus on satisfying the credit demands of that market prior to serving the credit needs of markets outside their area. Financial institutions argued that this restriction would hurt their credit quality, by not allowing them to make credit allocations across different geographical areas. As a result, the final act omitted the explicit credit allocation criteria and simply required the institution to serve the convenience and needs of the community. An emphasis was placed on the credit needs of the community, but this was to be done without sacrificing the safety and soundness of the institution.

Regulators developed twelve factors across five performance categories to judge performance. The five categories included: ascertainment of community credit needs, marketing and types of credit offered and extended, geographic distribution and record of opening and closing offices, discrimination and other illegal credit practices, and community development. The outcome of an examination is a composite performance rating scale. Each of the twelve factors originally was assigned a five-point scale, but later it was changed to a four-point scale. The four-point scale

¹We exclude years following 1998 to focus on the effects of the 1995 legislation without any contaminating effects of Gramm-Leach-Bliley of 1999 which required regulators to study the performance and profitability of lending related to the CRA. See Litan et al. (2000).

consisted of “outstanding,” “satisfactory,” “needs-to-improve,” and “substantial-noncompliance.”

Banks and thrifts were examined periodically for CRA compliance, with mandated maximum intervals between exams. The examination intervals varied by the bank’s prior CRA performance rating. Banks and thrifts rated as outstanding were to have been reexamined within three years, while banks and thrifts rated as satisfactory were to be reexamined within two years, and all others were to be reexamined after one year.

Following the passage of the act in 1977, critics complained that the requirements were vague and that the legislation lacked a specific weighting scheme for the assessment of the five performance categories and the allocation of resources. In addition, community groups continued to complain about inadequate local credit provided by area financial institutions.

In an effort to provide more disclosure relative to CRA performance, a 1990 amendment to the CRA required each bank or thrift to maintain a public file with their CRA performance rating. To address criticism and complaints surrounding more identifiable performance guidelines and outcomes, the act was again amended in 1995. The 1995 amendment was to be implemented over the following two years.

The 1995 amendment stressed performance over effort and introduced a new evaluation system examining three categories consisting of lending, investment, and service. The lending category rates the institution on its ability to meet local credit needs. The regulator examines the number, amount, and distribution of loans across different geographic and income groups. The institution also can claim community development loan credits for loans made to help finance certain revitalization the low- and moderate-income communities. The regulator also evaluates the innovativeness of the institution in reaching low- or moderate-income areas. The investment category examines how well the institution satisfies the needs of the local community through making community investments that benefit the area. The service category evaluates the ability of the institution to meet the credit needs of the community through its retail service delivery system. This includes the distribution of branches, along with ATM, computer, phone, and mail access. Innovativeness in reaching low- to moderate-income groups also is considered and may consist of using tools such as extended office hours or low-balance checking accounts.

Each of the three categories is evaluated on a five-point scale of “outstanding,” “high satisfactory,” “low satisfactory,” “needs to improve,” and “substantial non-compliance.” Each of the three categories has a specific score assigned that varies based on the five-point scale rating. For example, the lending category has the largest performance weighting, carrying 12 points for a rating of outstanding, whereas the investment and service categories carry only 6 points for a rating of outstanding.

This weighting alleviates some of the vagueness surrounding where institutions should place their efforts. The performance in each of the three categories is aggregated to an overall composite rating for the institution, which has a four-point scale. More specifically, for the composite rating, the “high and low satisfactory” groups are combined under one “satisfactory” group, thus creating the four-point scale. The 1995 amendment also provided streamlined standards for small institutions.

Analysis of Bank Lending Practices and Examination Scheduling

Discussion of the Variables

The prior work regarding CRA examination still leaves questions open regarding the objectivity and consistency of the examinations. The introduction of more explicit performance standards in 1995 suggests that these questions may have been well founded. We empirically evaluate the influence of bank loan levels and loan quality at the time of the current examination on the scheduling of the next examination. We then examine whether the bank loan levels and loan quality at the time of the current examination influence the ability of a substandard bank (given a rating of 3 or 4) to recover by the next examination.

To construct the sample, we obtain CRA ratings for banks supervised by the Federal Reserve (FED), the Federal Deposit Insurance Corporation (FDIC), and the Office of the Comptroller of the Currency (OCC) from 1990 through 1998. In addition we collect financial data from the Federal Financial Institution Examination Council's year-end Reports of Condition and Income. We observed 36,382 CRA examinations during our sample period. Overall, 18 percent of total examinations done during our sample period were done by the OCC, 68 percent by the FDIC, and 14 percent by the FED. The percentage of examinations done by the OCC increased significantly during the later years of our sample period (6 percent in 1990 versus 25 percent in 1998), while the FDIC percentage declined (82.55 percent in 1990 versus 65.87 percent in 1998), and the FED percentage was fairly stable. We dropped observations where we could not observe the next examination and that did not have data necessary for our analysis. This resulted in a sample of 25,146 observations.

Table 1 presents the statistics associated with segregating our sample based upon the CRA compliance rating given at the time of the current examination and the number of years until the next examination. Almost 95 percent of the examinations in the sample have a CRA compliance rating of outstanding or satisfactory. With respect to examination frequency, 11.80 percent of the banks in the sample are reexamined within one year, and 87.07 percent are reexamined within three years. As expected, the data suggest that examination frequency is a function of the CRA rat-

ing. More specifically, of those institutions receiving a CRA rating of outstanding (1), 9.87 percent (410 of 4156) are reexamined within a year. In contrast, of those receiving a CRA rating of substantial noncompliance (4), 43.12 percent (47 of 109) are reexamined within a year.

Table 1—Banks in Sample Grouped by CRA Compliance Rating and the Number of Years until the Next Examination* 1990 through 1998

CRA Rating Given at Current Examination	Number of Years to Next CRA Examination*					Total
	0 – 1	1 – 2	2 – 3	3 – 4	4 – 5	
1	410 (1.63%)	1409 (5.60%)	1705 (6.78%)	599 (2.38%)	33 (0.13%)	4156 (16.53%)
2	2115 (8.41%)	7597 (30.21%)	7419 (29.50%)	1991 (7.92%)	603 (2.40%)	19725 (78.44%)
3	394 (1.57%)	601 (2.39%)	138 (0.55%)	21 (0.08%)	2 (0.01%)	1156 (4.60%)
4	47 (0.19%)	51 (0.20%)	10 (0.04%)	1 (0.01%)	0 (0.00%)	109 (0.43%)
Total	2966 (11.80%)	9658 (38.41%)	9272 (36.87%)	2612 (10.39%)	638 (2.54%)	25146 (100.00%)

*Number of years to next CRA examination = [(the number of days from the current examination until the next examination)/365]. Numbers in parentheses represent percentages of the total sample. The CRA rating scheme is 1 = outstanding, 2 = satisfactory, 3 = needs to improve, 4 = substantial noncompliance

Discussion of Bank Lending Variables

Loan generation is an important variable in determining CRA performance (Gunther, 1999). Several studies have found that institutions with good CRA ratings are active lenders (Bierman et al., 1994; Gunther, 1999; or Harrison, 1999). Banks that are actively lending may be examined less frequently (longer interval to the next CRA examination). Dahl et al. (2003) find banks with low loan-to-asset ratios, particularly residential mortgage loans, may be likely to be examined more frequently. It is also possible that depositories with small loan portfolios are less likely to get a poor CRA compliance rating. To examine this issue, we use two different measures of loan generation: total loans divided by total assets (Total Loan Ratio) and total residential loans divided by total assets (Residential Loan Ratio).² We hypothesize

²Loan generation refers to generation of loans that banks hold as assets on their balance sheets. Because banks sell a great proportion of their loans, use of a loan sales variable would be worthwhile. Public data from the Call Reports, however, only became available on the amounts of loans sold in 2006, which does not allow us to create a residential loan sale variable that corresponds to our balance sheet measure during the period studied in this paper. We do note that, industry-wide, loans that were sold during the entirety of 2007 represented about 44 per cent of the value of loans outstanding at the end of 2007. Although substantial, it indicates that loans sold were still significantly less than loans held in 2007 lending justification for the use of our variable. Furthermore, the secondary market for loan sales was

these loan level measures will be positively related to the time interval from the current to the next examination.

Banks may adopt sub-optimal portfolios of loans in order to conform to CRA requirements (Bierman et al., 1994; Harrison, 1999; and Gunther, 1999). Further, the quality of loan portfolios may influence CRA examination scheduling. To control for this we use two different measures of loan quality, Bad Total Loan Ratio (past due and non-accrual loans divided by total assets) and Bad Residential Loan Ratio (past due and non-accrual residential mortgage loans divided by total residential mortgage loans). We hypothesize these loan quality measures will be negatively related to the time interval from the current to the next examination.

Discussion of Control Variables

We include many institution-specific variables in our model. We include a variable to account for the current CRA rating. CRA Rating equals one for a rating of outstanding, two for satisfactory, three for needs to improve, or four for substantial noncompliance. We expect institutions with poorer (higher) CRA ratings will be reexamined sooner.

Prior work suggests that the financial condition of an institution may influence examination frequency. Some studies have found that institutions with poor financial condition receive better performance ratings, suggesting that these institutions adopt less profitable portfolios to get higher ratings (Bierman et al., 1994; Harrison, 1999). In contrast, other studies have found institutions with financial problems are more likely to get lower ratings, suggesting that performance and compliance go hand in hand (Gunther, 1999). To measure the financial condition, we include net income divided by total assets (Returns on Assets) and primary equity capital divided by risk-weighted assets (Capital Ratio). The expected sign of these variables is unknown.

Some critics have suggested that there is interagency inconsistency in ratings, compliance standards, and rating procedures (Thomas, 1998; Matasar and Pavelka, 1998). To control for this, dummy variables are used to account for the regulatory agency. FDIC is set to one if the institution is supervised by the FDIC and zero otherwise. FED is set to one if the institution is supervised by the Federal Reserve and zero otherwise. The Office of the Comptroller of the Currency is the excluded set. The expected sign of these variables is inconclusive.

CRA concerns are more pronounced if banks are seeking regulatory approval of a merger. Regulatory approval of mergers is an important tool used by supervisors to

much less developed during our sample period (which ended about ten years earlier), which should lend credence to the use of our loan generation variables.

enforce CRA compliance (Garwood and Smith, 1993). Prior work has found that affiliation with a holding company increases the chances of a bank getting a better CRA performance rating (Bierman et al., 1994; Harrison, 1999). Holding company status is controlled through the use of an indicator variable (Holding Company) that equals one if a member of a holding company and 0 otherwise. The expected sign is positive.

Prior work has found that size is positively related to good CRA performance ratings (Harrison, 1999). This may be a function of larger depositories having better outreach programs to help low-income and minority borrowers. Size also may affect the interval between examinations, as supervisors may target them more frequently under the assumption that they may have a more important impact on the community. To control for size we include the natural log of total assets [$\text{Ln}(\text{Total Assets})$]. All explanatory variables are measured at the end of the year of the current examination. The dependent variable, Days to the Next Examination, is the number of days from the current examination until the next examination.

Table 2 presents the descriptive statistics for our sample. The average CRA performance rating was satisfactory or above.³ On average, loans account for approximately 54 percent of total assets. Residential loans represent 15 percent of the loan portfolio. More than 70 percent of the sample are members of a holding company. The average number of days from the current examination until the next examination is approximately 740.

Empirical Results

We first observe the simple correlations of the number of days to the next examination with our bank lending measures. Table 3 presents the coefficients and p-values for the entire sample and for each regulatory subset to assess any inter-agency inconsistency in the relationship between a bank's lending practices and regulatory examination scheduling (Thomas, 1998; Matasar and Pavelka, 1998). Overall, the findings suggest that banks that are actively lending are examined less frequently (longer interval to the next CRA examination). Banks with lower quality loan portfolios (higher bad loan ratios) are examined more frequently (shorter interval to the next CRA examination). There does appear to be some interagency inconsistency, as the OCC subsample results run counter to the results for the FDIC and the FED. The coefficients of the lending variables for the OCC suggest that lend-

³We lost more observations from the later years in our sample resulting in a proportionately larger loss of observations where the OCC was the principal regulator. This is understandable because the relative proportion of observations with the OCC as principal regulator was much greater in the later years compared to the earlier years of our sample.

Table 2—Descriptive Statistics for the Sample of Banks Examined For CRA Compliance

Variable	Mean	Standard	Maximum	Minimum
		Deviation		
CRA Rating	1.8893	0.4651	4.0000	1.0000
Return on Assets	0.0101	0.0095	0.2213	-0.2617
Capital Ratio	0.0981	0.0383	0.4851	-0.0145
FED Indicator Variable	0.1655	0.3716	1	0
FDIC Indicator Variable	0.7485	0.4338	1	0
OCC Indicator Variable	0.0859	0.2802	1	0
Total Loan Ratio	0.5449	0.1500	0.9953	0.0057
Residential Loan Ratio	0.1532	0.1072	0.8935	0.0001
Bad Total Loan Ratio	0.0141	0.0210	0.3953	0.0000
Bad Residential Loan Ratio	0.0116	0.0311	0.9802	0.0000
Holding Company Indicator Variable	0.7100	0.4538	1	0
SMSA Indicator Variable	0.4065	0.4911	1	0
Ln(Total Assets)	10.8039	1.3665	19.3833	6.9077
Days to Next Examination	740.48	319.51	1950	1

CRA Rating equals 1 = outstanding, 2 = satisfactory, 3 = needs to improve, 4 = substantial noncompliance; Return On Assets = net income/total assets; Capital Ratio = primary capital/risk-weighted assets; FED = 1 if Federal Reserve is principal regulator, 0 otherwise; FDIC = 1 if FDIC is principal regulator, 0 otherwise; OCC = 1 if OCC is principal regulator, 0 otherwise; Total Loan Ratio = the bank's total loans/total assets; Residential Mortgage Loan Ratio = the bank's total residential mortgage loans/total assets during the year of the examination; Bad Total Loan Ratio = past due and nonaccrual loans/total loans; Bad Residential Loan Ratio = past due and nonaccrual residential mortgage loans/residential mortgage loans; Holding Company = 1 if the bank is a part of a bank holding company; 0 otherwise; Ln(Total Assets) = the natural log of the total assets; SMSA Variable = 1 if bank in an MSA, 0 otherwise; Days To Next Examination = the number of days from the current examination for CRA compliance until the next examination. All variables (except Days To Next Examination) are measured at the end of the year of the current examination

ing activity has no effect on the frequency of reexamination and the OCC-supervised banks with lower quality loan portfolios (higher bad loan ratios) are examined less frequently (longer interval to the next CRA examination).

We further examine the relationship between CRA examination frequency and bank lending behavior in Table 4 in the OLS estimates of the days to the next examination. We find that the larger either of the loan ratios (Total Loan Ratio in Regression 4.1 or Residential Loan Ratio in Regression 4.2), the longer the examination interval. In addition, the higher the bad loan ratios (Bad Total Loan Ratio in Regression 4.1 or Bad Residential Loan Ratio in Regression 4.2), the sooner banks are scheduled for reexamination. In Regression 4.3, we test for the interagency differences we observed in Table 3 by interacting the FDIC and FED dummy variables with the total loan ratio and the bad total loan ratio. The OCC is the excluded set. The findings support the results shown in Table 3.

Table 3—Pearson Correlation Coefficients Comparing Number of Days until the Next Examination* with Key Bank Lending Variables Grouped by Principal Examiner

Bank Loan Measure	All Regulators Correlation (p-value)	OCC Correlation (p-value)	FRB Correlation (p-value)	FDIC Correlation (p-value)
Total Loan Ratio	0.055 (0.001)	-0.018 (0.409)	0.054 (0.001)	0.083 (0.001)
Residential Loan Ratio	0.039 (0.001)	0.032 (0.140)	0.022 (0.163)	0.068 (0.001)
Bad Total Loan Ratio	-0.062 (0.001)	0.063 (0.004)	-0.120 (0.001)	-0.080 (0.001)
Bad Residential Loan Ratio	-0.043 (0.001)	0.041 (0.059)	-0.054 (0.001)	-0.055 (0.001)

*The number of days from the current examination until the next examination. P-values for significance of coefficient difference from zero in parentheses. Total Loan Ratio = the bank's total loans/total assets; Residential Mortgage Loan Ratio = the bank's total residential mortgage loans/total assets during the year of the examination; Bad Total Loan Ratio = past due and nonaccrual loans/total loans; Bad Residential Loan Ratio = past due and nonaccrual residential mortgage loans/residential mortgage loan

The FDIC and the FED appear to scrutinize bank's lending practices much more so than the OCC.⁴ In regression 4.1, we add an indicator variable (Post 1995 Indicator Variable) that equals one for the post 1995 time period and zero otherwise. We find that after 1995 depositories have longer intervals between examinations than they did prior to 1996. This would suggest that the 1995 amendment that created more identifiable performance guidelines and outcomes and streamlined the performance standards for small institutions influenced regulators to lengthen the examination interval.

In regression 4.2, we include the Post 1995 Size Indicator Variable. The variable is product of the Post 1995 Indicator Variable and the Ln(Total Assets). It is negatively related to the examination interval, suggesting that the longer examination intervals after 1995 are especially true for smaller banks.⁵

Concerning our control variables, we find evidence that a bank that receives a better (lower numbered) CRA rating at the current examination will have a longer interval to its next examination. This suggests that the policy is effective in encouraging regulators to reexamine banks with substandard CRA ratings more frequently. Relative to performance, banks with lower capital ratios are examined sooner; however, there is no significant relation between the return on assets and the examination

⁴We also used the natural log of the number of days until the next examination as the dependent variable. Our overall findings were unaltered.

⁵Gramm-Leach-Bliley Act of 1999 mandated longer examination intervals for smaller institutions. Our findings suggest regulators had already begun to lengthen examination intervals for smaller institutions before the passage of Gramm-Leach-Bliley.

Table 4—Ordinary Least Squares Regression Examining the Days to Next Examination

Variable	Regression 4.1 Coefficient (standard error)	Regression 4.2 Coefficient (standard error)	Regression 4.3 Coefficient (standard error)
Intercept	711.27* (23.15) (39.44)	670.46* (24.29)	775.55* (32.98)
CRA Rating	-85.23* (4.21)	-83.82* (4.42)	-83.66* (4.21)
Return On Assets	11.82 (211.01)	353.24 (230.35)	-9.27 (211.17)
Capital Ratio	251.19* (54.81)	289.55* (63.09)	239.08* (54.83)
FDIC Indicator Variable	212.86* (6.90)	211.25* (7.01)	136.33* (26.36)
Fed Indicator Variable	8.14 (7.93)	16.55* (8.08)	-15.67 (31.41)
Total Loan Ratio	54.98* (13.30)		-105.87* (43.71)
Residential Loan Ratio		72.97* (18.85)	
Bad Total Loan Ratio	-520.36* (90.88)		1341.08* (285.13)
Bad Residential Loan Ratio		-263.38* (63.99)	
Holding Company Indicator Variable	-5.69 (4.33)	-2.72 (4.58)	-5.43 (4.33)
SMSA Variable Indicator Variable	7.83* (4.08)	10.44* (4.26)	8.20* (4.07)
Ln(Total Assets)	-4.71* (1.52)	-1.19 (0.49)	-5.03* (1.53)

The dependent variable, Days To Next Examination = the number of days from the current examination for CRA compliance until the next examination. CRA Rating equals 1 = outstanding, 2 = satisfactory, 3 = needs to improve, 4 = substantial noncompliance; Return On Assets = net income/total assets; Capital Ratio = primary capital/risk-weighted assets; FDIC = 1 if FDIC is principal regulator, 0 otherwise; FED = 1 if Federal Reserve is principal regulator, 0 otherwise (OCC is the excluded set); Total Loan Ratio = the bank's total loans/total assets; Residential Loan Ratio = the bank's real estate loans/total assets; Bad Total Loan Ratio = past due and nonaccrual loans/total loans; Bad Residential Loan Ratio = past due and nonaccrual real estate loans/real estate loans; Holding Company = 1 if the bank is a part of a bank holding company; 0 otherwise; SMSA Variable = 1 if bank in an SMSA, 0 otherwise; Ln(Total Assets) = the natural log of the total assets; Post 1995 Indicator Variable = 1 for years post 1995; 0 for years 1990-1995; Post 1995 Size Indicator Variable = Post 1995 Indicator Variable $\times$ Ln(Total Assets); FDIC $\times$ Total Loan Ratio = FDIC indicator variable $\times$ Total Loan Ratio; FED $\times$ Total Loan Ratio = FED indicator variable $\times$ Total Loan Ratio; FDIC $\times$ Bad Total Loan Ratio = FDIC indicator variable $\times$ Bad Total Loan Ratio; FED $\times$ Bad Total Loan Ratio = FED indicator variable $\times$ Bad Total Loan Ratio. All variables (except Days To Next Examination) are measured at the end of the year of the current examination. Heteroskedasticity-consistent standard errors are in parentheses. *Significant at the 5 percent confidence level

Table 4 (cont.)—Ordinary Least Squares Regression, Days to Next Examination

Variable	Regression 4.1 Coefficient (standard error)	Regression 4.2 Coefficient (standard error)	Regression 4.3 Coefficient (standard error)
Post 1995 Indicator Variable	177.84* (4.93)	578.24* (40.56)	178.51* (4.92)
Post 1995 Size Indicator Variable		-35.05* (3.60)	
FDIC * Total Loan Ratio			191.20* (45.91)
FED * Total Loan Ratio			99.90** (54.05)
FDIC * Bad Total Loan Ratio			-2052.24* (302.12)
FED * Bad Total Loan Ratio			-2186.88* (381.21)
Adjusted R ²	0.1403	0.1485	0.1426

interval. Banks supervised by the FED and the OCC are reexamined sooner than those supervised by the FDIC. There is also some evidence to suggest that those that are in a SMSA have a slightly longer examination interval. The negative coefficient of the Ln(Total Assets) variable suggests that smaller banks are examined less frequently.

Analysis of Non-Compliant Depositories' Recovery

We now focus on the 1,265 observations in our sample that received a substandard CRA rating and examine whether the bank's lending practices influence its ability to recover from the substandard rating by the next examination. Recovery occurs when a non-compliant bank (with a substandard CRA rating of 3 or 4) had its rating raised to at least a satisfactory rating (CRA rating of 2) by the next examination.

Table 5 presents the percentage of non-compliant banks that recovered during our sample period, grouped by the number of years until the next examination and by regulator. Of the 1,265 substandard banks that were reexamined, 73.44 percent recovered. There was variation across regulators in that almost 96 percent reexamined by the OCC recovered, with 74 percent for the FDIC and 62 percent for the FED. This evidence in conjunction with evidence discussed earlier concerning the relationship between bank lending behavior and CRA examination scheduling supports the claim that the OCC led in what was termed a "competition in laxity" during our sample period. The OCC openly admitted its desire to reduce the regulatory burden of the banking industry in hopes of having more banks seek national charters (Fox, 1995a and 1995b).

Table 5—Percentage of CRA Substandard* Depositories that Recovered by the Next Examination 1990 – 1998**

Number of Years **	Total Sample	OCC	FED	FDIC
0 – 1	71.66% (441)	96.88% (32)	57.39% (115)	74.49% (294)
1 – 2	74.08% (652)	100% (21)	66.67% (93)	74.35% (538)
2 – 3	74.32% (148)	90.91% (11)	100.00% (2)	72.59% (135)
3 – 4	81.82% (22)	80.00% (5)	100.00% (1)	81.25% (16)
4 – 5	100% (2)	100% (2)	0% (0)	0% (0)
Total	73.44% (1265)	95.77% (71)	62.09% (211)	74.26% (983)

*Substandard is defined as receiving a CRA rating of 3 or 4. The CRA rating scheme is 1 = outstanding, 2 = satisfactory, 3 = needs to improve, 4 = substantial noncompliance. Recovery is defined as attaining a CRA rating of 2 or better by the next examination. **Number of years to next CRA examination = [(the number of days from the current examination until the next examination)/365]. Number of banks examined in parentheses

Table 6—Pearson Correlation Coefficients Comparing Recovery* with Key Bank Loan Portfolio Characteristics Grouped by Principal Examiner

Bank Loan Measure	All Regulators Correlation (p-value)	OCC Correlation (p-value)	FRB Correlation (p-value)	FDIC Correlation (p-value)
Total Loan Ratio	0.194 (0.001)	0.160 (0.180)	0.335 (0.001)	0.153 (0.001)
Residential Loan Ratio	0.080 (0.004)	0.146 (0.221)	0.143 (0.037)	0.052 (0.101)
Bad Total Loan Ratio	-0.107 (0.001)	-0.110 (0.359)	-0.034 (0.621)	-0.113 (0.001)
Bad Residential Loan Ratio	-0.114 (0.001)	-0.097 (0.432)	0.005 (0.947)	-0.130 (0.001)

*Recovery = 1 if bank recovered from a substandard CRA rating (3 or 4) at the current examination to a CRA rating of 2 or better by the next examination; 0 otherwise. P-values for significance of coefficient difference from zero in parentheses. Total Loan Ratio = the bank's total loans/total assets; Bad Total Loan Ratio = past due and nonaccrual loans/total loans; Residential Loan Ratio = the bank's residential mortgage loans/total assets; Bad Residential Loan Ratio = past due and nonaccrual residential loans/total loans

Table 6 presents the simple correlations of recovery with our bank lending measures. Overall, the findings suggest that banks that are currently lending more are more likely to recover by the next exam, and that banks with higher current levels of bad loans are less likely to recover by the next examination. Evidence suggesting any intra-agency inconsistency between a bank's lending practices and recovery from an unsatisfactory CRA rating is unclear. The OCC results show no significant correlations for any of the loan ratios or bad loan ratios, whereas the FDIC and FED results

are mixed. Both loan ratios are significantly positive (suggesting a positive effect on recovery by the next examination) for the FED, but only the total loan ratio is significantly positive for the FDIC. Both loan quality ratios are significantly negative for the FDIC (suggesting poor loan quality reduces chances of recovery by the next examination), but neither is significant for the FED.

Table 7 presents the multivariate probit estimation of the likelihood of a non-compliant bank recovering by the next examination. The significantly positive coefficients associated with the bank's TOTAL LOAN RATIO in Regression 7.1 suggest that the larger the current total lending, the higher the probability of a CRA rating recovery by the next examination.

Table 7—Probit Estimation of the Odds of Recovery for CRA Substandard Depositories by the Next Examination

Dependent Variable	Regression 7.1 Coefficient (standard error)	Regression 7.2 Coefficient (standard error)	Regression 7.3 Coefficient (standard error)
Intercept	2.42* (0.65)	2.95* (0.71)	2.31* (1.02)
CRA Rating	-0.59* (0.14)	-0.45* (0.16)	-0.59* (0.14)
Timerate	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
Return On Assets	6.42* (2.52)	8.42* (2.64)	6.41* (2.52)
Capital Ratio	-0.85 (0.67)	-0.73 (0.65)	-0.69 (0.70)
FDIC Indicator Variable	-0.79* (0.28)	-0.80* (0.28)	-0.52 (0.84)
Fed Indicator Variable	-1.04* (0.30)	-1.06* (0.29)	-1.33 (0.87)
Total Loan Ratio	1.22* (0.21)		1.97 (1.65)
Residential Loan Ratio		0.47 (0.37)	
Bad Total Loan Ratio	-4.15* (1.23)		-12.62 (10.61)
Bad Residential Loan Ratio		-1.19 (0.64)	
Holding Company Indicator Variable	0.20* (0.08)	0.13 (0.09)	0.21* (0.08)
SMSA Indicator Variable	-0.27* (0.09)	-0.24* (0.10)	-0.28* (0.09)
Ln(Total Assets)	0.05 (0.03)	0.03 (0.03)	0.04 (0.03)
Post 1995 Indicator Variable	-2.22 (1.36)	-2.31 (1.36)	-2.46 (1.28)

Table 7 (cont.)—Probit Estimation of the Odds of Recovery for CRA Substandard Depositories by the Next Examination

Dependent Variable	Regression 7.1 Coefficient (standard error)	Regression 7.2 Coefficient (standard error)	Regression 7.3 Coefficient (standard error)
Post 1995 Size Indicator Variable	0.16 (0.12)	0.09 (0.15)	0.19 (0.12)
FDIC * Total Loan Ratio			-0.88 (1.67)
Fed * Total Loan Ratio			-0.07 (1.73)
FDIC * Bad Total Loan Ratio			7.94 (10.69)
Fed * Bad Total Loan Ratio			12.34 (10.96)
Log Likelihood	-648.21	-543.79	-645.03

The dependent variable, Recover = 1 if the bank recovered by the next examination, 0 if not; CRA Rating equals 3 = needs to improve, 4 = substantial noncompliance; Timerate = of days from the current examination for CRA compliance until the next examination; Return On Assets = net income/total assets; Capital Ratio = primary capital/risk-weighted assets; FDIC = 1 if FDIC is principal regulator, 0 otherwise; FED = 1 if Federal Reserve is principal regulator, 0 otherwise (OCC is the excluded set); Total Loan Ratio = the bank's total loans/total assets; Residential Loan Ratio = the bank's real estate loans/total assets; Bad Total Loan Ratio = past due and nonaccrual loans/total loans; Bad Residential Loan Ratio = past due and nonaccrual real estate loans/real estate loans; Holding Company = 1 if the bank is a part of a bank holding company; 0 otherwise; SMSA Variable = 1 if bank in an SMSA, 0 otherwise; Ln(Total Assets) = the natural log of the total assets; Post 1995 Indicator Variable = 1 for years post 1995; 0 for years 1990-1995; Post 1995 Size Indicator Variable = Post 1995 Indicator Variable $\times$ Ln(Total Assets); FDIC * Total Loan Ratio = FDIC indicator variable $\times$ Total Loan Ratio; FED * Total Loan Ratio = FED indicator variable $\times$ Total Loan Ratio; FDIC * Bad Total Loan Ratio = FDIC indicator variable $\times$ Bad Total Loan Ratio; FED*Bad Total Loan Ratio = FED indicator variable $\times$ Bad Total Loan Ratio. *Significant at the 5% confidence level

With regard to the quality of the loan portfolio, we find a significantly negative coefficient associated with the Bad Total Loan Ratio in Regression 7.1. This suggests the poorer the quality of the current loan portfolio, the less likely recovery will occur by the next examination. In Regression 7.2, we replace the total loan variables, with variables relating only to residential loans. Surprisingly, neither the loan level nor loan quality ratios are significant.

In Regression 7.3, we test for interagency differences in the relationship between a bank's current lending activities and its recovery by the next examination by interacting the FDIC and FED dummy variables with the total loan ratio and the bad total loan ratio. The OCC is the excluded set. None of the interaction terms are significant, suggesting no statistic interagency differences in the effect of bank lending activities on recovery from a substandard CRA rating by the next examination.

Concerning our control variables included in the regressions, non-compliant banks with a CRA Rating of 4 (substantial noncompliance) are less likely to recover than banks with a 3 (needs to improve) rating. With regard to the variables that proxy financial condition, we find a positive relation between the current Returns on Assets and the probability of recovery. We observe no significant relationship between the probability of recovery and the capitalization measure.

The coefficients associated with the supervisory agency suggest that banks supervised by both the FDIC and the FED are less likely to recover than those supervised by the OCC. This result is consistent with the competition in laxity argument discussed earlier and the finding of the U.S. GAO (1995) that the number of poorly rated banks was much less for those banks supervised by the OCC.

The significantly negative coefficient of the SMSA variable suggests that those banks that are in a SMSA have less chance of recovery whereas there is mixed evidence that banks in a holding company are more likely to recover. Neither the Post 1995 Indicator Variable nor the Post 1995 Size Indicator Variable is significant, suggesting that the 1995 legislation had no effect on CRA non-compliant banks likelihood of recovery by the next examination.

Conclusion

We examine the regulatory practices of CRA examiners over the years 1990 through 1998. We build on past studies of CRA examination practices by investigating if CRA compliance examiners consider a bank's current lending practices in scheduling its next examination. We then examine banks receiving a substandard CRA rating to test if the bank's lending practices influence its ability to recover from the substandard rating by the next examination. We also test for structural changes in the examination and recovery process following the 1995 passage of the amendments to the CRA examination.

We observe that a bank's loan levels and loan quality exert significant influence on the examination scheduling. We find some evidence that the probability of non-compliant banks' recovery is significantly influenced by its current loan levels and loan quality. We also observe that the time interval between examinations is significantly longer after 1995, especially for smaller banks. We also find evidence of a competition in laxity during our sample period. We find evidence that the OCC was more lax than other regulators, perhaps in hopes of having more banks seek national charters.

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