

What Makes Community Reinvestment Act Agreements Work? A Study of Lender Responses

Raphael W. Bostic

University of Southern California

Breck L. Robinson

University of Delaware

Abstract

One response to the incentives provided by the Community Reinvestment Act of 1977 (CRA) has been for lenders and community groups to enter into CRA agreements, which involve pledges to provide prescribed levels of service to targeted neighborhoods. This article examines whether lenders actually change their behavior after entering into these agreements.

Using data on CRA agreements and on mortgage lending, we find that institutions increase their lending activity with each year an agreement is in force and that increased lending persists after an agreement expires. Additional analysis shows that agreements that include provisions for mortgage counseling and technical assistance are associated with increased targeted lending. By contrast, agreements with provisions requiring small business counseling and technical assistance and periodic meetings by review committees are associated with somewhat depressed lending levels. Further research is needed to draw definitive implications from this second set of results.

Keywords: Community Reinvestment Act (CRA); Home Mortgage Disclosure Act; Mortgages

Introduction

For many years, public policy and community activism have focused on the underdevelopment of many lower-income and minority neighborhoods and the fact that the households that live there continue to lag economically. Particular emphasis has been placed on the activities of the financial sector, which many believe has not sufficiently supported these communities. It has been argued that one result of this inattention has been inadequate flows of capital to these neighborhoods and households and, as a consequence, inadequate community

economic development and growth and limited accumulation of assets and wealth-building (Immergluck 2004).

The Community Reinvestment Act of 1977 (CRA) was enacted in part as a response to such concerns. The CRA requires bank regulatory agencies to take steps to encourage financial institutions to serve all segments of their local area, with a particular emphasis on providing services to lower-income and minority borrowers and neighborhoods.¹ The CRA provides guidelines for regulators to use to periodically evaluate a lending institution's performance in meeting the financial needs of the community. From these evaluations, each institution is assigned a CRA performance rating that is ultimately released to the public. Institutions receiving poor ratings risk potentially substantial costs, including significant adverse publicity and the possible denial or delay of a proposed merger or acquisition.

One tool that banking institutions have used to improve their performance rating is the CRA agreement, which typically involves a pledge to extend a certain volume or dollar amount of loans to targeted groups or communities. These loans are usually directed toward segments of a community that traditionally would be viewed as "underserved," notably lower-income and minority communities and households. Since the early 1980s, financial institutions have entered into over 300 CRA agreements, which are typically written in conjunction with community groups.

There is an emerging literature evaluating the effectiveness of CRA agreements in increasing lending to minority and lower-income neighborhoods and households (Bostic and Robinson 2003, 2004; Schwartz 1998b). This article focuses on a related aspect, namely whether institutions entering into these agreements subsequently change their mortgage lending behavior. In addition, we attempt to determine those aspects of CRA agreements that appear to be most effective in leading to changes in behavior for participating institutions.

This issue is important along several dimensions. First, if CRA agreements do not produce behavioral changes on the part of participating institutions, then are such agreements useful for economic development in underserved communities and for asset accumulation and wealth-building among lower-income and minority households? Second, by identifying those features associated with positive changes in behavior, we seek to help establish a set of best

¹ While the initial emphasis was on both lower-income and minority borrowers and neighborhoods, more recent regulations emphasize service to lower-income borrowers and neighborhoods only. For a more expansive overview of the history of the CRA and of the issues associated with it, see Garwood and Smith (1993) and Board of Governors of the Federal Reserve System (2000).

practices for inducing lenders to increase mortgage activity in targeted areas. Third, the results point to the need for further research to better understand how interorganizational coordination and cooperation help shape effective public policies. Finally, the results help inform the current debate on the appropriate scope of the CRA in terms of institutional coverage.

Our analysis relies on data from a National Community Reinvestment Coalition (NCRC) database on CRA agreements, Call Report filings, and Home Mortgage Disclosure Act (HMDA) filings and focuses on the period from 1993 to 2001. The results suggest that institutions entering into CRA agreements subsequently increase their lending each year an agreement is in force and that increased lending persists even after the agreement has expired. In addition, agreements that include provisions calling for mortgage counseling and technical assistance are associated with increased targeted lending. By contrast, agreements requiring small business counseling and technical assistance and periodic meetings by review committees are associated with somewhat depressed levels of lending.

The next section provides a brief review of the CRA and CRA agreements, including a discussion of the theory underlying the use of these agreements as a community development tool. A section describing the data follows. The next two sections present the results of the empirical analysis, and the final section includes some concluding thoughts.

Background and overview of the CRA and CRA agreements

Policy context and the ongoing debate

An ongoing concern of policy makers and academics has been the urban underclass—a minority population, often black, located close to the central core and exhibiting concentrated poverty—and the persistent lack of income and wealth in predominantly minority communities. There has been much debate about the origins of these problems. Kain (1968) was perhaps the first to point to economic considerations, arguing that the suburbanization of employment, particularly employment requiring lower levels of technical skill, combined with discrimination in housing to isolate blacks in locations with little or no job growth (the “spatial mismatch” hypothesis). Murray (1984), Frey (1980), Lauria (1998), and Bradford and Kelejian (1972), among others, have made similar arguments.

Others have argued that the collective taste of middle-class households, particularly middle-class blacks, for living in neighborhoods that do not feature significant poverty has driven the migration patterns resulting in the underclass (Wilson 1987). Segregation and race-based discrimination have also been seen

as key culprits, with varying tastes for integration and discrimination in labor and housing markets disadvantaging the poor and limiting their ability to escape poverty and poverty-stricken neighborhoods (Massey and Denton 1993; Yinger 1987). Public policy solutions, which include antidiscrimination legislation, such as the Fair Housing Act, and skill-building programs that provide job training, such as the Jobs Training Partnership Act, have been crafted to address each of these possible causes and promote economic development and well-being.

Financial institutions and markets have also been highlighted as contributing to the decline and continued lack of economic growth and wealth-building among these groups. Discriminatory practices, such as the redlining of lower-income and minority neighborhoods and outright discrimination against lower-income and minority households, limited the flow of capital to these groups (Immergluck 2004). And since capital is critical for existing businesses to grow, entrepreneurs to become established, and households to make investments in housing and other assets that can contribute to the creation of wealth, efforts to establish increased flows of capital and credit have been seen as crucial for successful development initiatives.

The CRA represents one of the key efforts undertaken to increase the flow of capital and credit to lower-income and minority neighborhoods and households. The CRA requires that banking institutions provide comparable services to all parts of their area, including low- and moderate-income individuals and neighborhoods.² The CRA is implemented in two ways. First, federal regulators periodically review the record of lenders in meeting their CRA objectives. These examinations assess an institution's performance in serving its entire area and include a review of mortgage and small business lending and bank branching patterns among its tests. Each institution receives a CRA rating or grade based on the findings from the regulatory examination. Second, the act also requires regulators to use an institution's CRA record as part of the review when deciding on an application for a change in operation, like a merger or branch expansion or closure.

Policy makers and academics have not agreed about the merits of the CRA. Proponents argue that there are market failures in low- and moderate-income communities that cause some creditworthy individuals in these communities to not have access to credit (Goldberg 2002). For example, imperfect competition or a lack of information about risk relationships for lower-income and minor-

² Throughout this article, we refer to "low and moderate income" collectively as "lower income."

ity neighborhoods and households might make it difficult for lenders to determine whether a borrower is creditworthy and can result in the rationing of credit (Calomiris, Kahn, and Longhofer 1994; Gruben, Neuberger, and Schmidt 1990; Longhofer and Peters 2005; Stiglitz and Weiss 1981). Moreover, if gathering information on these potential borrowers is particularly costly, lenders may shy away from being active with these populations, leading to thin markets that exacerbate the initial informational deficit (Calem 1996; Harrison 2001; Lang and Nakamura 1993; Ling and Wachter 1998). The CRA may encourage lenders to overcome these informational challenges, become more informed about borrowers in lower-income and minority communities, and potentially increase the volume of lending to these groups. Recent results from Avery, Bostic, and Canner (2005) suggest that this has been occurring to some extent.

Lending can also play a catalytic role in sparking economic development—a role that may require government intervention to initiate. Typically, underserved communities suffer from declining home values, high vacancy rates, significant levels of crime, and other attributes that typify communities in decline. Not surprisingly, lenders are less likely to provide mortgage credit to declining communities. However, this reticence can help exacerbate the decline. Government activity, as embodied in the CRA, may therefore be needed to create a favorable environment that encourages lending institutions to provide mortgage credit (Schill et al. 2002).

Another argument put forward in support of the CRA is that it is an important tool for counteracting the negative effects of discrimination and redlining in lending and reducing observed race-based disparities in credit market outcomes. For example, the data show that compared with whites, minorities are consistently found to be significantly more likely to be rejected for mortgage credit (Benston and Horsky 1979; Black, Schweitzer, and Mandell 1978; Munnell et al. 1996). The persistence of these differences, even after controlling for factors that are related to the riskiness of the borrower and community, is consistent with the view that discrimination is adversely affecting market outcomes, although there is some debate as to whether these differences constitute definitive evidence of discrimination in mortgage markets (Phillips and Yezer 1996; Rachlis and Yezer 1993; Yezer, Phillips, and Trost 1994). In this view, the CRA's requirement that lenders be mindful of their level of service to potential lower-income and, particularly, minority customers and possible noncompliance costs are an ongoing deterrent against discriminatory behavior.

Critics of the CRA, by contrast, are skeptical of the notion that there are failures in credit markets. This view is based on Becker (1971) and Arrow

(1972a, 1972b), who both argue that no form of discrimination can persist in competitive markets over the long run because competition will drive agents that discriminate out of business. CRA critics such as Lacker (1995) argue that credit markets, with their many participants and relatively low barriers to entry, are highly competitive. They point to the growth in the subprime market and the role of nondepository institutions as mortgage providers in this market—documented by Avery et al. (1999), Litan et al. (2001), and the Joint Center for Housing Studies (2002)—as examples of their competitive nature.

Critics also argue that the CRA has not been pivotal in increasing lending to lower-income and minority neighborhoods and households. Rather, market developments, such as the broad economic growth during the 1990s, innovations in information technology, and deregulation in the financial services industry, have been far more important in this view (Gunther 2000; Harvey et al. 2001; Lacy and Walter 2002). Again, the rapid growth in lending to lower-income and minority neighborhoods and households by (1) subprime market lenders, many of which are not subject to the CRA, and (2) CRA-covered lenders outside of their service area—activity not covered by the law—is often considered to be supporting evidence.

Finally, critics point out that the CRA potentially imposes significant costs on financial institutions and communities. For example, because it can increase the influence of community groups during the public comment period when applications for mergers are filed with regulatory authorities, more efficient financial institutions may be less likely to enter lower-income communities (either directly or by merger). As a result, such communities may end up being worse off than if they were in a regulatory environment that did not include the CRA.

Recently, regulatory agencies have moved to change the scope of the CRA. In February 2005, in the name of reducing the regulatory burden on smaller banks, the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency (2005), in addition to the Board of Governors of the Federal Reserve System (2005), proposed changing the definition of a small bank by raising the threshold from \$250 million to \$1 billion. The Office of Thrift Supervision (2004) had made a similar move earlier.³ This change represents a large increase in the number of banks considered small (nearly 90 percent of thrifts are now considered small) and is significant, since small banks undergo a less rigorous CRA examination. These actions have only intensified the debate over the CRA, its need, and its effectiveness.

³ The joint proposal also calls for the new small banks to face a new community development test.

CRA agreements

While policy makers and academics continue to debate, it remains true that a poor CRA performance rating can have negative effects. Institutions that receive poor ratings face potential disciplinary action by regulatory agencies and often suffer from significant adverse public relations. Moreover, because an institution's CRA record is considered during the review for mergers and acquisitions, the CRA is likely to be of particular interest to institutions considering consolidation. A poor record may lead to the denial or postponement of an application until performance improves. In addition, banks with poor records are often more likely to face challenges from community groups on CRA grounds. These protests can lead to considerable negative publicity and may require significant bank resources to address allegations. During the rapid consolidation in the 1990s, demonstrating a commitment to and compliance with the CRA and fair lending laws became very salient.

It has been increasingly common for lending institutions to demonstrate their commitment and compliance by entering into agreements with community groups and other entities to ensure the flow of credit through their entire service area. These agreements, referred to as CRA agreements in this article, often include explicit lending targets to lower-income and minority neighborhoods and individuals, with the most common targets involving mortgage lending. CRA agreements typically specify a geographic area, such as a city or county, and then a particular population within that geographic area, such as lower-income or minority communities or borrowers. To enhance the success of lending programs, these agreements often have provisions like credit counseling, application review committees, and lenders assigned to review and originate loans from targeted populations.⁴

More recently, lenders have begun to make voluntary pledges, in which they commit to lend to targeted communities without explicitly signing an agreement with a specific community group or other organization. While these voluntary pledges differ qualitatively from the more formal nature of the initial CRA agreements, we include them as CRA agreements in our analysis. Table 1 shows how these agreements have grown in popularity since the passage of the CRA.

An important point is that CRA agreements have no official bearing on performance evaluations and ratings. Neither the CRA itself nor the regulations that implement it require examiners to consider the existence of an agreement in evaluating a bank's performance. That said, well-crafted agree-

⁴ Schwartz (1998b) provides a thorough review of the elements of CRA agreements.

Table 1. The Amount of CRA Lending Commitments Nationwide by Year (In Millions of Dollars)

Year	Annual Amount	Cumulative Amount
2000	13,681	1,098,857
1999	32,377	1,085,176
1998	696,270	1,052,799
1997	221,345	356,529
1996	49,678	135,184
1995	26,521	85,506
1994	6,123	58,985
1993	10,474	52,862
1992	33,583	42,387
1991	2,427	8,805
1990	1,614	6,378
1889	2,260	4,764
1988	1,248	2,504
1987	357	1,256
1986	516	899
1985	73	382
1984	219	309
1983	1	90
1982	6	89
1981	5	83
1980	13	78
1979	15	65
1978	—	50
1977	50	50

Source: Data were compiled by the NCRC and reflect the set of initiated agreements known by the NCRC.

ments are very likely to align with CRA goals and should enhance a bank's performance.

CRA agreements can serve the interests of both community-based organizations and lenders. From the former's perspective, the goal of these agreements is to increase the pool of mortgage recipients and the banking services in their neighborhoods. Underlying this objective is the view that profitable lending and service opportunities are going unmet because of market imperfections such as asymmetric information or imperfect competition. In this view, the CRA agreement is a tool that helps lenders overcome information asymmetries and find previously overlooked customers. Ultimately, the community

benefits from this expansion of credit, which is the objective of the community organization.

If market imperfections exist, CRA agreements allow lenders to benefit because their lending base expands and their revenues and profitability increase. However, even if market imperfections do not exist, agreements can be useful as a vehicle for reducing the costs associated with CRA noncompliance. Regulators may be less likely to give banking institutions that meet CRA agreement goals (for lending and providing services) a poor performance rating. Similarly, lenders entering into agreements may be less likely to face CRA-based challenges to merger applications. Certainly, if noncompliance costs are large enough, lenders entering into agreements may be willing to subsidize their lending in targeted areas to meet their goals.⁵ If so and if lenders enter into agreements mainly to reduce the costs of noncompliance, the prevalence of agreements might decrease, given that the pace of consolidation is likely to slow since so many mergers have already occurred. Indeed, the beginning of such a slowdown has been documented by NCRC (2002) and Immergluck (2004). That noted, it is difficult to predict how the size of agreements will evolve in the future, although the data suggest a slowdown (table 1).

Whether market imperfections exist or not, an increased use of targeted lending by banking institutions that enter into CRA agreements could be expected. However, little empirical research on this question has been conducted. A notable exception is Schwartz (1998a), who uses HMDA data from 1994 to compare the home purchase and home improvement lending of banks with and without CRA agreements in states and metropolitan areas with at least one agreement. He finds that banks with agreements were relatively more active in serving minority and lower-income populations, particularly for home purchase lending, suggesting that agreements may be accomplishing this objective.

Our research builds on Schwartz's work (1998a) and tries to more definitively address the question of whether banking institutions that enter into CRA agreements increase their targeted lending as defined by the agreements. An important auxiliary question is whether targeted lending remains at higher levels after an agreement expires. While the preceding discussion suggests that increases in targeted lending during the life of an agreement offer no insights into whether there are imperfections in the local lending market or not, a finding that targeted lending remained at higher levels after an agreement

⁵ This is most likely to occur among large lenders, which can take advantage of their scale and diversification to implement such a strategy with a relatively small effect on their overall profitability.

expired would strongly suggest that imperfections were present. Alternatively, a return to preagreement lending levels would suggest that the market was perfectly competitive and that noncompliance costs were the lenders' overriding consideration.

If CRA agreements are observed to be associated with increased targeted lending, an interesting and potentially important issue is whether certain characteristics of the agreements are more effective in leading to increased lending than others. It could be that enhanced expertise arising from specialization makes an agreement that is exclusively focused on one type of activity (say, mortgage lending) more effective than one focused on several activities and multiple product types.⁶ Alternatively, much research has examined collaboration between entities that have different missions, with some studies finding that collaboration enhanced overall performance and resulted in better outcomes.⁷ In this context, agreements that establish collaboration between lenders and community groups, such as counseling sessions provided by the lender's staff and the community group or jointly staffed review committees, could be more effective in increasing lending. Our research also takes up this question.

Data

The empirical tests require three types of data:

1. Information on CRA agreements
2. Information on the banking institutions involved in the agreements
3. Information quantifying the lending that fulfills the obligations laid out in the agreements

Since 1990, HMDA provisions have required most institutions with offices in metropolitan areas to provide detailed information on every application for a home mortgage received over a year. For the purposes of our research, the relevant data items are application disposition (approved, denied, withdrawn), the location of the property, and the borrower's race or ethnicity and income.

⁶ Specialization has been identified as important for increasing productivity in many contexts, and much literature on bank lending has recognized its potential importance. For example, Berger and Udell (1998), among others, hypothesize that specialized competencies allow smaller banks to be better than larger banks in serving small business lending needs, an argument that finds support in Berger, Klapper, and Udell (2001).

⁷ For example, De Vita (1999) and Brown (1998) document the benefits of collaboration between government and nonprofit and nongovernmental organizations, respectively.

With this information, it is possible to determine the volume of lending to the geographies and individuals targeted by the agreements. Because of changes in regulatory reporting requirements, HMDA data collected before and after 1993 are not directly comparable. Thus, we restricted the analysis to 1993 through 2001.

HMDA data have some well-known limitations that have precluded their use in other areas. First, not all of the variables lenders consider in making underwriting decisions are included. While not particularly relevant for our research, this has been a significant barrier to using these data to study discrimination and credit allocation issues.⁸ More important in the current context, HMDA data are known not to include all mortgages. Berkovec and Zorn (1996) and Avery et al. (1999) estimate that HMDA data cover 70 to 75 percent of all mortgages originated in a given year. Berkovec and Zorn (1996) also find that HMDA coverage is more complete in lower-income neighborhoods, which are a particular focus here. Thus, we have little reason to believe that omitted mortgages will significantly bias our results.

While straightforward in principle, the process of identifying and tracking lending institutions is complicated by the fact that the banking industry underwent considerable consolidation during the 1990s. Many of the lenders that entered into the CRA agreements in our data were subsequently purchased by or merged into other institutions and no longer exist. Moreover, even if the original institution could be tracked forward through mergers, the lending toward the end of the study period would not be directly comparable to the lending in earlier years because it would include activity by a larger institution.

Thus, we constructed hypothetical institutions including the original lender that entered into the CRA agreement and all independent institutions that this lender was affiliated with through consolidation between 1993 and 2001. We use the Federal Reserve Board's National Information Center database to identify banks that were acquired and banks that acquired other banks during each calendar year. With this information, we can construct a "fixed" lender that incorporates the lending of all of the affiliated institutions in every year of the analysis. For example, if a lender purchased two institutions over the analysis period, the "fixed" hypothetical institution's lending for each year would be the sum of the lending in that year across the three institutions.

Information on CRA agreements initiated through 1997 was gathered from the NCRC, a trade association of more than 800 community groups and

⁸ For example, the prominent Boston Fed study (Munnell et al. 1996) was a direct response to the shortcomings surrounding HMDA data.

local public agencies that focuses on CRA-related issues. Each year, the NCRC updates its list of CRA agreements by surveying its membership and reviewing media accounts of CRA agreements.⁹ Where possible, the NCRC obtains hard copies of the agreements negotiated between its members and lending institutions. Information on the types and amounts of lending pledges, the targeted group or community, the provision of technical assistance, the duration of the agreements, and the years the agreements are active was collected from these hard copies. Not all CRA agreements initiated by NCRC members are included in the analysis. Specifically, the sample was restricted to those including a pledge for mortgage credit that could be tracked to a targeted community.¹⁰

We used the information collected to determine what loans to include as qualified lending. Each agreement specifies a state, county, city, or neighborhood. Within this geography, an agreement further establishes some combination of lower-income neighborhoods, lower-income households, and moderate-income households as the targeted population. To calculate the volume of qualified lending using HMDA data, each loan originated by the relevant constructed hypothetical institution was first classified as being either within or outside the agreement's geographic focus area. Next, of the loans originated within this area, the number and amount of those serving the neighborhoods and households targeted by the agreement were summed. Lower-income neighborhoods and households and moderate-income households were defined in the standard way.¹¹

To determine whether lending activity changes, it is necessary to identify the period when an agreement is active. The NCRC data include the date that an agreement became active, as well as its duration. Identifying an agreement's active life is therefore straightforward.

Characteristics describing qualitative aspects of CRA agreements are also available from the NCRC data. These include whether the lender offered mortgage loan counseling and technical assistance, small business counseling and

⁹ The NCRC publishes its list in *CRA Commitments*, which also reviews innovative provisions of CRA agreements in home mortgage, small business, and community development lending and other CRA-related investments. More information on the NCRC can be obtained from its Web site at <<http://www.ncrc.org>>.

¹⁰ We view national pledges to be too distributed to have a significant impact on a specific county.

¹¹ Lower-income neighborhoods are those census tracts with a median income of less than 80 percent of the median income of the metropolitan area. Lower-income households are those with an income of less than 80 percent of the median income of the metropolitan area. Moderate-income households are those with an income between 80 percent and 120 percent of the median income of the metropolitan area.

technical assistance, and pledges to provide an increased level of banking services, including additional branches. The CRA agreement database also includes whether the agreement mandates regular meetings of a committee responsible for reviewing progress on agreement goals and whether there were any minority hiring pledges governing employees or board members.

While the NCRC data include information on over 200 CRA agreements, focusing on the 1993–2001 period eliminates a significant fraction of them. For example, many agreements begin and end before 1993. In these cases, we do not observe lending before the agreement began and therefore cannot determine whether lending behavior changed after it was in force. Eliminating those that cannot be used leaves us with 51 agreements from 14 states. All of them target activity within metropolitan areas, and there is a concentration of agreements in New Jersey, California, Ohio, and Chicago.

Table 2 presents some statistics on the sample of CRA agreements we used in the analysis. On average, they involved a pledge of \$2.3 million over a five-year period. Almost all of the agreements in the sample (82 percent) were formal agreements between a lender and a community-based organization. In addition, pledges in areas other than mortgages were common. More than two-thirds of the agreements include pledges to lend to small businesses, with a comparable fraction committing to investments in community development. A significant percentage had commitments for technical assistance (45 percent for mortgages and 18 percent for small businesses) and branch-related service expansion (39 percent), such as opening a new branch or extending hours. Slightly more than 39 percent established formal review committees including members of the local community, and most met either on quarterly or semi-annually. Finally, in about one-fifth of the agreements, lenders committed to increase minority representation, either on their staff or on their board of directors.

Initial results

This study focuses on the question of whether lenders change their behavior after entering an agreement and whether any changes persist after it has ended. The first point to highlight in this regard is that the lenders in our sample differ in some ways from the universe of all lenders (table 3). First, on average they are much larger than the lenders that are not in the sample (\$24.0 billion versus \$1.1 billion). However, this distinction is not very important, because nearly all of the largest banks have entered into CRA agreements, and there are many, many small community banks that have not, which skews the averages. The banks in our sample are slightly better capitalized than other

Table 2. Characteristics of CRA Agreements in the Sample

Item	Value
Start year	1996
Duration	5 years
Total pledge amount (cumulative)	\$2.3 million
Mortgage pledge amount (cumulative)	\$1.1 million
Type of agreement (%)	
Formal contract	82.4
Voluntary lender pledge	17.6
Other monetary pledges (%)	
Other mortgage elated	37.3
Small business related	68.6
Minority- and woman-owned businesses	23.5
Community development	66.7
Other	49.0
Service-related pledges (%)	
Mortgage technical assistance and counseling	45.1
Small business technical assistance	17.6
Branch related	39.2
Other commitments (%)	
Review committee meetings	
Monthly	2.0
Quarterly	17.6
Semiannually	11.8
Annually	7.8
Minority hiring pledges	
Staff	21.6
Board	5.9

Table 3. Comparison of the Lenders with Agreements with Other Lenders

	Banks in the Sample	All Other Banks
Assets (billions of dollars)	24.0	1.1
Capital-to-asset ratio (%)	7.9	7.0
Mortgage volume as a percentage of assets	24.0	16.2
Return on equity (%)	14.4	7.2
Return on assets (%)	1.2	0.9

Source: Bank and thrift Call Report filings.

banks (an average capital-to-asset ratio of 7.9 percent versus 7.0 percent for all other lenders not in the sample) and are relatively more mortgage oriented in their activities. (Mortgages represent 24 percent of their assets versus 16 percent for other banks.) More important, banks in the sample are more profitable than other banks, whether measured by return on equity (14.4 percent versus 7.2 percent) or return on assets (1.2 percent versus a 0.9 percent). Thus, the banks in our sample are relatively strong.

Table 4 provides some initial evidence on whether and how lenders in the sample changed their behavior in response to entering a CRA agreement by showing how an institution's average amount of annual lending while an agreement was active, measured either by number of loans or total dollar volume,

Table 4. Change in Average Annual Qualified Lending Associated with a Change in Agreement Status

	Loans	Dollars
Percent change in lending upon agreement initiation ^a (N = 47)		
Mean	65.6	93.8
Median	9.7	44.2
Maximum	675.0	779.0
75th percentile	143.4	161.3
25th percentile	-31.3	-25.3
Minimum	-97.5	-95.5
Percentage of lenders with positive change	55.3	66.0
Percent change in lending after the agreement expires ^b (N = 36)		
Mean	76.2	101.1
Median	-15.9	-5.9
Maximum	1,820.0	1,443.2
75th percentile	52.2	80.0
25th percentile	-69.5	-61.1
Minimum	-95.2	-90.3
Percentage of lenders with positive change	38.9	48.6

^a Growth figures are calculated using (1) the average annual qualified lending during the years when an agreement was in force and (2) the average annual qualified lending during the years before the agreement was enacted. The number of years before an agreement was enacted varies across the agreements in the data set. The average number of preagreement years was 3.2.

^b Growth figures are calculated using (1) the average annual qualified lending during the years when an agreement was in force and (2) the average annual qualified lending during the years after the agreement expired. The number of years before an agreement was enacted varies across the agreements in the data set. The average number of preagreement years was 2.9.

compares with the total annual lending either before an agreement was initiated or after it expired. A comparison of lending before an agreement was initiated with lending while it is in force shows that institutions on average increased their lending once an agreement had been initiated (table 4, top panel).¹² Moreover, the change is large, since the average increase in lending was 66 percent measured by the number of loans and 94 percent measured by the dollar volume.

However, the data also show considerable variation. While some lenders experienced dramatic increases—more than 25 percent of the sample experienced a twofold increase in their lending (an increase of more than 100 percent)—between 35 and 45 percent of the lenders in the sample had declines, with some reducing their lending almost completely.

The bottom panel of table 4 compares an institution's annual lending while an agreement is active with its lending in the years following its termination.¹³ The results indicate that most institutions (61 percent) *reduced* the average annual number of loans originated after an agreement was terminated. Regarding mean values, the data here are highly skewed, which explains why they show that on average the institutions in the sample increased their average annual lending in the postagreement period. Once outliers are removed, we find that the average institution reduced its annual lending by 12.7 percent after the agreement ended.¹⁴

These initial results are consistent with the view that CRA agreements are effective in changing the behavior of most lenders that enter into them. For the median lender, the incentives provided appear to result in an increase in targeted lending. The postagreement results further point to the importance of these incentives, because after they are no longer in place, lenders appear to cut back on the investment directed to targeted neighborhoods and communities.

Given that not all agreements are associated with either immediate or sustained increases in lending, it may be that agreement characteristics play a role in determining ultimate success. To explore this possibility, we first separate the agreements into two groups according to whether their enactment was

¹² The figures for these columns include only those agreements for which we observe lending before an agreement was initiated and while it is active. With this requirement, only 47 out of the 51 agreements remain.

¹³ These figures include only those agreements for which lending is observed while an agreement is active and afterward. With this requirement, only 36 out of the 51 agreements remain.

¹⁴ Outliers are defined here as having growth in lending exceeding 400 percent (4 agreements). If we are more liberal and omit only extreme outliers, defined as having average annual postagreement lending increase by more than 1,000 percent, the average growth in annual lending falls to 23.6 percent. One agreement is an extreme outlier by this criterion.

associated with an increase or decrease in lending relative to the previous level and then compare the characteristics of the agreements in the two groups. We focus on four aspects: (1) the type of agreement (formal or voluntary) and whether it involved (2) a broad range of monetary pledges, (3) service-related pledges, and (4) other types of commitments.

The results of this process are presented in table 5. The most striking aspect of the data is the relative lack of variation in the characteristics of the agreements in the different groups. Agreements associated with annual lending increases were significantly more likely to involve smaller mortgage pledge amounts (\$172 million versus \$2.6 billion) and involve other mortgage-related lending pledges (54 percent versus 16 percent). Agreements in the two groups were not significantly different along any other dimensions. Regarding termination, only the presence of small business-related pledges differed significantly among agreements associated with lending increases versus those associated with declines (77.3 percent versus 42.9 percent). Thus, there is relatively little evidence in the raw data to suggest that the characteristics of CRA agreements are an important consideration.

Multivariate tests

The results in table 4 suggest that CRA agreements induce lenders to increase their targeted lending, which then falls once the incentives are no longer in place. However, the preceding analysis did not consider the possibility that correlations between variables might influence observed relationships. A multivariate analysis is required to address this issue.

This section presents results from the estimation of the following simple random effects model:

$$\text{Lend}_{i,t} = \alpha_{i,t} + \beta_1 \text{CRACHARS}_{i,t} + \delta_i + \gamma_t + \varepsilon_{i,t} \quad (1)$$

Here, $\text{Lend}_{i,t}$ is the amount of qualified lending, measured either in terms of number of loans or loan dollars, in year t by the lender associated with agreement i , δ_i is an agreement random effect, and γ_t is a vector of year dummy variables.¹⁵ The specification does not include bank characteristics for two reasons. First, since there is effectively a one-to-one correspondence between lenders and agreements, the agreement random effect will absorb variation

¹⁵ It has been well documented that total mortgage lending systematically increased during the period of analysis (Avery et al. 1999). This raises the possibility that any growth in lending associated with CRA agreements may be an artifact of this trend without the inclusion of year dummies.

Table 5. Characteristics of Agreements Grouped by Change in Average Annual Lending upon Change in Agreement's Status

	Change in Average Annual Lending			
	Upon Agreement Initiation		Upon Agreement Termination	
	Increase	Decline	Increase	Decline
Type of pledge (%)				
Formal	85.7	84.2	85.7	81.8
Voluntary	14.3	15.8	14.3	18.2
Other lending pledges (%)				
Other mortgage related	53.6	15.8**	42.9	45.5
Small business related	67.9	78.9	42.9	77.3**
Minority- and woman-owned business	25.0	21.1	35.7	22.7
Community development	57.1	78.9	64.3	68.2
Other	53.6	47.4	42.9	59.1
Service-related pledges (%)				
Mortgage-related technical assistance	50.0	47.4	57.1	45.5
Small business technical assistance	17.9	21.1	21.4	22.7
Branch related	32.1	52.6	42.9	36.4
Other commitments (%)				
Review committee meetings	42.9	31.6	28.6	40.9
Monthly	3.6	0	0	4.5
Quarterly	21.4	15.8	14.3	18.2
Semiannually	7.1	15.8	14.3	13.6
Annually	10.7	0	0	4.5
Minority hiring pledges				
Staff	10.7	36.8	14.3	13.6
Board	3.6	5.3	0	4.5
Average pledge amount	\$1,100	\$4,100	\$406.2	\$491.1
Average mortgage pledge amount (in millions)	\$172	\$2,600 *	\$118.3	\$96.4
Growth/decline in average annual lending (%)				
Number	106	-45.5	280	-53.5
Dollar volume	141	-28.7	319	-43.9
N	28	19	14	22

Note: Four agreements were not initiated before the period of analysis and so are omitted from the first two columns. Fifteen agreements were still active at the end of the analysis and so are omitted from the final two columns.

* $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

across lenders. Second, because we constructed hypothetical institutions, the correct approach for calculating bank-level variables is not obvious.

The key variables of interest are in the **CRACHARS** vector. We directly test for whether a CRA agreement is associated with increased lending by including a binary variable that equals 1 if the qualified lending occurred in a year when the agreement was active and zero otherwise. An agreement is considered active if it was in force for more than half of a given year. We also explore whether lending varies with the length of time the agreement was active by including a variable representing the number of years an active agreement has been in force. Assuming that agreements are effective and lead to an increase in qualified mortgage lending activity by participating institutions, we expect the coefficients for these variables to be positive and statistically significant. We also construct a variable to indicate whether qualified lending occurred in the years after the agreement expired and expect the coefficients on these variables to be negative, signifying no increase and perhaps some decline in lending relative to preagreement levels.¹⁶

Since an objective of our research is to identify those agreement characteristics that seem to have the most impact on lending, the specification includes other variables representing various characteristics associated with CRA agreements. Regarding lending and investment pledges, the **CRACHARS** vector includes individual identifiers indicating the existence of pledges for single-family mortgages, other mortgages, small business lending, lending to minority- and woman-owned businesses, community development investments, and other pledges. The vector also includes separate indicator variables for pledges to offer mortgage counseling and technical assistance, small business counseling and technical assistance, and expanded branching services. In addition, the vector includes a set of variables for whether the agreement includes provisions for a review committee to meet and whether the frequency of such meetings is monthly, quarterly, semiannually, or annually.¹⁷ Finally, **CRACHARS** includes two dummy variables for whether the agreement includes pledges to increase minority representation among the lender's staff or board of directors.

Table 6 presents the results of various estimates of equation 1. There are two specifications that vary according to whether the agreement was active

¹⁶ We also included a variable representing the number of years since an expired agreement was in force. Since it was not found to be statistically significant, it was omitted from the tables.

¹⁷ Fishbein (1992) has argued that the limited resources community groups have at their disposal may make them unable to effectively monitor financial institutions and their response to the CRA. As a result, it could be argued that the presence of review committees could be an attempt by one or both parties to allow the community group to have a monitoring function with little direct cost.

Table 6. Estimated Relationship between Qualified Lending and CRA Agreement Characteristics

	Dependent Variable: Number of Loans		Dependent Variable: Loan Dollars	
	(1)	(2)	(3)	(4)
Agreement active	18.011 (28.095)		2,942.619 (4,280.787)	
Years agreement in force	23.693 (10.501)**		2,991.920 (1,591.706)*	
Agreement in force				
1 year		51.454 (31.465)		6,910.915 (4,780.469)
2 years		69.069 (36.235)*		10,221.474 (5,490.483)*
3 years		85.393 (41.917)**		11,795.025 (6,339.567)*
4 years		89.423 (53.624)*		9,771.556 (8,120.755)
5 years		101.227 (64.939)		12,402.120 (9,823.669)
6 years		181.323 (94.282)*		21,694.845 (14,290.998)
7 years		178.458 (117.513)		21,285.165 (17,828.945)
8 years		207.886 (119.901)*		24,109.934 (18,181.531)
9 years		498.632 (140.791)***		80,135.613 (21,361.003)***
Agreement ended	123.141 (55.486)**	124.927 (55.726)**	16,709.022 (8,383.086)**	17,119.917 (8,376.618)**
Formal agreement	70.921 (92.542)	71.185 (84.040)	14,489.7 (12,381.07)	14,376.49 (10,761.64)
Annual mortgage pledge amount	0.059 (0.040)	0.060 (0.037)	9.968 (5.401)*	10.182 (4.695)**
Mortgage counseling and technical assistance	246.150 (77.188)***	250.077 (70.143)***	29,467.493 (10,334.799)***	30,153.336 (8,993.680)***
Small business counseling and technical assistance	-192.458 (109.567)*	-193.463 (99.469)*	-26,968.771 (14,657.151)*	-27,181.208 (12,733.769)**
Branch services	-52.972 (68.523)	-51.802 (62.217)	-9,562.409 (9,168.742)	-9,349.478 (7,967.925)
Minority hiring	-40.673 (99.283)	-44.262 (90.141)	-11,568.742 (13,282.376)	-12,193.996 (11,541.202)
Minority board recruiting	-58.590 (142.602)	-62.327 (129.845)	-2,293.906 (19,105.364)	-2,507.861 (16,677.062)
Review committee				
Monthly meeting	4.869 (250.482)	10.245 (227.493)	2,199.309 (33,527.109)	3,179.470 (29,151.122)
Quarterly meeting	-138.933 (85.570)	-139.556 (77.656)*	-17,343.968 (11,444.117)	-17,434.407 (9,936.641)*

Table 6. Estimated Relationship between Qualified Lending and CRA Agreement Characteristics *Continued*

	Dependent Variable: Number of Loans		Dependent Variable: Loan Dollars	
	(1)	(2)	(3)	(4)
<i>Review committee (continued)</i>				
Semiannual meeting	-216.231 (106.051)**	-222.303 (96.402)**	-25,982.490 (14,204.906)*	-27,080.681 (12,368.636)**
Annual meeting	-188.566 (123.179)	-189.632 (111.788)*	-20,667.580 (16,471.205)	-20,782.723 (14,300.883)
Constant	54.869 (86.463)	53.209 (79.125)	-1,111.633 (11,675.390)	-1,248.890 (10,295.034)
Observations	450	450	450	450
Number of Agreements	50	50	50	50
Wald statistic	27.47***	37.39***	37.51***	52.16***

Note: Standard errors are in parentheses. All regressions include year dummy variables and agreement random effects.
* $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

and, if so, for how long.¹⁸ Columns 1 and 2 show estimates using these specifications in which the dependent variable is the number of qualified loans originated. The data show that having a CRA agreement in force is associated with an increase in annual lending. The key factor in this regard is how many years an agreement is in force, since lending increases by about 24 loans for every year an agreement is in force. Given that the average annual preagreement lending level was 137 loans, this suggests that, on average, an institution's level of targeted lending would almost double after an agreement was active for five years. Overall, this result is consistent with the view that lenders learn about the targeted area over time and are subsequently willing and able to extend more loans to these communities.

The specification in column 2 of table 6 characterizes CRA agreements according to how long they have been in force as of a given year, rather than whether they were in force at all in that year, and provides additional insight. This regression shows that lending gradually increases over time, with the amount of targeted lending becoming significantly higher than preagreement levels only after the first year that an agreement is in force (i.e., 69 more targeted loans than the preagreement level in year 2 of an agreement, and so forth).

¹⁸ Wald statistics provide a test of whether the linear specification for the regression is appropriate, and their high level of significance suggests that the models characterize the behavior of interest well.

Both specifications show that the coefficient on an observation after an agreement has ended (about 124 loans or \$17 million in loan dollars) is positive and statistically significant ($p = 0.05$). This suggests that the level of lending following the expiration of an agreement is clearly greater than the preagreement level. This result, which does not conform to our expectations, implies that lenders maintain their level of activity even after the CRA agreement has ended. It appears that lenders arrive at a new equilibrium that is higher than the previous level. On the basis of the coefficients on the “years in force” variables (24 loans in column 1 or the vector of coefficients in column 2), it appears that this new level is close to the amount of lending after an agreement is in force between 5 and 6 years. Such a finding is consistent with the view that CRA agreements help expand credit opportunities in targeted markets and that these markets offer profitable opportunities for lenders.

Turning to the agreement characteristics, the coefficient on the mortgage counseling and technical assistance variable (about 250 loans or \$30 million in loan dollars) is positive and highly significant. Conversely, the coefficients on the variables indicating whether the agreement included a pledge to offer small business counseling and technical assistance (about -193 loans or -\$27 million in loan dollars) and whether it led to the creation of a review committee (about -220 loans or -\$26 million in loan dollars for semiannual committee meetings) are negative and significant.

The significance of the coefficients on these three variables points to the importance of the nature of the relationship between the lender and the community organization involved in the agreement. The positive relationship between the amount of targeted mortgage lending activity and the offering of mortgage counseling and technical assistance services suggests that collaboration by the two parties can be effective. The negative small business counseling relationship may suggest that lenders divert resources away from mortgage lending and into small business lending when the latter is emphasized in an agreement. Such a diversion could be viewed as positive or negative, depending on the context. On the positive side, a diversion to small business lending would be desirable if the lender and the community organization agreed that the community was in particular need of such lending or if it was believed that the redirected resources would be easily replaced by other lenders. By contrast, the diversion could reflect a net loss of resources devoted to targeted mortgage lending, which would be a negative effect. Distinguishing among these is not possible in our study.

Finally, there are varying possible interpretations of the review committee relationship. If the committee is viewed as evidence of an adversarial relationship, then this result suggests that agreements that include some adversarial

constructs may impinge on their effectiveness in helping to increase targeted lending. Taking this argument further, the finding that lending declines as the periodicity of the committee meetings lengthens would be consistent with the view that, given the acknowledgment of an adversarial aspect to an agreement, an increased amount of monitoring yields benefits. However, a review committee need not be a sign of an adversarial relationship, since one could exist without a committee. Moreover, a committee could be a sign of cooperation rather than opposition.

An alternate interpretation of the review committee result is similar to the previously discussed interpretation of small business counseling. Because the community groups that are partners and members of the review committees often have a strong interest in broader community development, these committees might be more focused on community development lending than on mortgage lending. If so, then they might be a proxy for a redirection of resources to community development lending and away from mortgage lending.¹⁹ As was the case for small business lending, such a diversion could be either good or bad, depending on the local context.

With all interpretations of this sort, it is important to emphasize that considerable caution must be used. We observe only whether an agreement included a provision calling for a particular activity. There is no information on whether these provisions were actually implemented or if they were, whether they were conducted in good faith. Moreover, there is no information on whether the level of effort across the various agreements was equivalent or sustained. Further, many of the institutions in the sample underwent subsequent mergers. These often result in considerable staff turnover, and if they affected the staff supporting the agreements, then this, and not the features of the agreements themselves, would underlie performance differences. Again, we have no information on staffing and changes over time. Thus, while the results in this regard are interesting, far more needs to be done before definitive conclusions can be reached about the efficacy of a particular provision of a CRA agreement.

The columns 3 and 4 of table 6 repeat this exercise with the dependent variable as the amount of qualified lending measured in terms of loan dollars. The results here are quite similar to those obtained using the number of loans as the dependent variable. The volume of qualified lending increases by nearly \$3 million per year the longer agreements are active (column 3), and this higher level of lending persists even after they have expired (about \$16 million more).

¹⁹ We thank an anonymous referee for making this point.

As was the case for number of loans, the postagreement dollar volume of lending is at a level comparable to the volume of targeted lending after an agreement has been in effect for between 5 and 6 years. Among agreement characteristics, mortgage counseling is again positively related to targeted mortgage lending activity, while small business counseling and the existence of a review committee have a negative association with targeted lending activity.

There are two notable differences between the results using number of loans versus dollar volume of lending as the dependent variable. First, the size of the annual pledge is positively associated with the dollar volume, suggesting that lenders are sensitive to the size of the loans they originate. Second, year-to-year increases in lending while an agreement is in force (column 4) are less striking using the dollar volume measure rather than the number of qualified loans. Here, levels of targeted lending become significantly higher than preagreement levels only in the second and third years that an agreement is in force. After this point, the level of qualified lending no longer remains significantly different from lending in preagreement years. Rather, there is a great deal of variation, evidenced by the large standard errors in the out-years. The lone exception to this out-year result is observed for the ninth year that an agreement is in force, where a large increase in lending activity is observed. This effect may be an artifact of the very few agreements we observe at this stage.²⁰ This overall pattern—a run-up in targeted lending in the early years of an agreement that is not uniformly sustained in later years—is consistent with findings in Bostic and Robinson (2003) on the response of metropolitan-level targeted lending to the presence of CRA agreements.

The results also speak to the recent trend toward voluntary, unilateral agreements and away from the formal multiparty agreements that predominate in our data (Immergluck 2004). Indeed, a key issue is whether such voluntary pledges are meaningful in the sense that they elicit lender responses equivalent to more formal agreements. The results provide a mixed view on this matter. The consistent large positive regression coefficient estimates for the formal agreement identifier suggest that formal agreements produce a greater institutional response than unilateral voluntary ones. However, in none of the four estimates in table 5 is this difference statistically significant; it could credibly be argued that there is no difference in lender response between the two types of agreements and that any differences are merely due to chance. This latter finding is consistent with the results found in Schwartz (1998a).

²⁰ Only two agreements in the sample were in force for nine years.

Robustness

The preceding analysis has shown that the enactment of a CRA agreement is associated with an increase in the amount of qualified lending, measured as either number of loans or dollar volume, and that the increased levels persist even after the agreement expires. However, it is difficult to conclude that there is a causal link between CRA agreements and increased lending, because agreements are not randomly assigned to institutions. Rather, institutions choose to enter into agreements, and this introduces the possibility of selection effects that underlie the observed results.

Consequently, some measure that captures this selection should ideally be included. One possible approach would be to treat preagreement activity as a measure of what the lender would do even without an agreement. To that end, the average amount of lending for an institution in the preagreement years was added as an independent variable in the specification. These estimates, in table 7, show that, indeed, those lenders that did more qualified preagreement lending also did more lending during the tenure of the agreement and after it expired. With this new variable added, the coefficient on the number of years an agreement was in force loses its statistical significance, although the sign remains positive. However, the coefficient on the indicator variable for whether an agreement had ended remains positive and statistically significant. This again shows that lenders were engaged in significantly more qualified lending activity after an agreement than before. This result is consistent with the view that the cumulative year-over-year increases in qualified lending associated with active agreements, though not significant individually, translate into a significantly higher level of qualified lending activity after an agreement expires.

Selection effects do not appear to alter the finding that mortgage counseling and technical assistance are positively associated with qualified lending activity. They do, however, weaken the negative relationships between qualified lending and both small business counseling and a review committee that meets relatively infrequently.

The effect of the size of the market in which a targeted area is located was considered by introducing interactions of the independent variables with an indicator variable for whether the amount of lending in a particular market was above or below the median for markets in the sample. The data show a market size effect for only one variable—lending after an agreement has ended—and suggest that elevated lending activity observed in the overall results was associated largely with agreements focused on larger markets. This might suggest that these markets had more borrowers who were being overlooked by lenders because of historical segregation and other market imperfections.

Table 7. Robustness Checks

	Dependent Variable: Number of loans		Dependent Variable: Dollar amount		1993 Norm ^a
	Add Preagreement Average	Add Market Size	Add Preagreement Average	Add Market Size	
Agreement active	37,691 (32,015)	28,359 (46,562)	5,875,020 (4,831,839)	6,400,098 (6,834,552)	2,307,987 (3,573,892)
Active market > median ^b		17,425 (57,320)		-1,157,412 (8,515,635)	
Years the agreement in force	14,366 (12,239)	11,516 (18,502)	1,173,514 (1,841,256)	509,674 (2,747,297)	2,482,957 (1,329,561)*
Years in force market > median ^b		3,964 (20,172)		1,243,264 (3,009,321)	
Agreement ended	122,683 (57,281)**	65,616 (60,437)	15,276,381 (8,581,311)*	5,764,925 (8,883,679)	13,356,043 (6,999,095)*
Ended market > median ^b		119,753 (42,769)***		22,883,101 (6,406,748)***	
Formal agreement	52,928 (70,354)	47,097 (68,299)	5,723,503 (9,823,696)	5,001,748 (9,799,445)	12,351,487 (10,892,439)
Annual mortgage pledge amount	0.022 (0.027)	0.021 (0.026)	0.615 (3.967)	0.807 (3.955)	
Mortgage counseling and technical assistance	129,984 (56,220)**	122,042 (54,682)**	14,929,737 (7,802,446)*	13,264,430 (7,820,383)*	25,410,264 (9,089,026)***
Small business counseling and technical assistance	-93,204 (72,949)	-89,859 (70,811)	-11,630,616 (10,258,022)	-11,809,895 (10,231,994)	-22,964,422 (12,892,802)*
Branch services	-64,155 (43,842)	-67,535 (43,842)	-8,104,301 (6,311,486)	-8,303,427 (6,294,961)	-8,333,672 (8,069,884)
Minority hiring	-33,233 (66,587)	-26,996 (64,616)	-2,745,387 (9,430,066)	-2,106,240 (9,400,269)	-7,514,012 (11,605,284)
Minority board recruiting	-28,134 (121,126)	-25,548 (117,544)	2,661,963 (16,847,598)	3,590,620 (16,806,223)	-2,953,730 (16,798,324)

Table 7. Robustness Checks Continued

	Dependent Variable: Number of loans		Dependent Variable: Dollar amount		1993 Norm ^a
	Add Preagreement Average	Add Market Size	Add Preagreement Average	Add Market Size	
Review committee					
Monthly meeting	81.979 (163.345)	108.952 (159.041)	8,327.167 (22,820.088)	12,954.038 (22,847.639)	-863.454 (29,481.357)
Quarterly meeting	-40.035 (57.748)	-31.624 (56.131)	-2,583.575 (8,093.810)	-496.163 (8,106.151)	-15,631.542 (10,073.836)
Semiannual meeting	-121.979 (84.856)	-124.766 (82.326)	-10,359.507 (11,843.068)	-11,060.127 (11,804.541)	-23,260.386 (12,501.128)*
Annual meeting	-20.809 (94.031)	-19.855 (91.191)	1,489.717 (13,096.932)	1,895.920 (13,054.881)	-18,670.694 (14,500.321)
Preagreement average ^b	1.017 (0.136)***	0.977 (0.133)***	1.579 (0.213)***	1.496 (0.215)***	
Pledge amount (1993 dollars)					
Constant	-50.199 (73.752)	-38.643 (71.885)	-11,935.955 (10,139.714)	-10,202.960 (10,122.372)	7.247 (5,021) 786.637 (10,245.407)
Observations	414	414	414	414	450
Agreements	46	46	46	46	50
Wald statistic	104.60***	118.71***	106.52***	121.44***	32.16***

Note: Standard errors are in parentheses. All regressions include year dummy variables and agreement random effects.

^a All variables measured in dollars are normalized to 1993 values.

^b Measured by the number of loans if the dependent variable is number of loans and by dollar amount if the dependent variable is dollar amount.

* $p < 0.10$. ** $p < 0.05$. *** $p < 0.01$.

An additional concern is that increases in lending volumes might be an artifact of inflation over the sample period. To test this, all regressions were re-estimated by converting annual dollar values and pledge amounts into 1993 dollars. The final column in table 7 shows that this conversion had no effect on observed relationships, a finding that was replicated for other estimates. Other robustness tests yielded qualitatively similar results with poorer model fits than the specifications reported in table 7.

Conclusion

Policy makers and researchers have long recognized the importance of financial services, especially credit, for ensuring the long-term health and viability of minority and lower-income neighborhoods and households. The CRA was enacted in 1977 in part to help ensure that these groups receive adequate levels of financial services to help ensure their economic viability. Lenders and community groups have responded by entering into CRA agreements, which are pledges to provide prescribed levels of service to targeted neighborhoods. Agreements can clearly help community organizations achieve their goal of increased investment in local communities. Agreements can also help lenders meet CRA objectives and avoid the potentially large costs of noncompliance, which include negative publicity and lost time when seeking permission for mergers and other activities.

This article examines whether lenders actually change their behavior after entering into CRA agreements. Using data obtained from the NCRC on CRA agreements and from HMDA on mortgage lending, we find that agreements have been associated with increases in targeted lending by the institutions that entered into them. These institutions are found to increase their lending activity after entering into an agreement and for each year it is in force, a result consistent with other research on the response of lending to a CRA agreement. Moreover, the increased level of targeted lending associated with the introduction of CRA agreements persists after they end. This latter result suggests that these agreements have helped lenders find profitable new opportunities in previously overlooked communities.

These results also suggest that CRA agreements have played an important role in helping to see that historically underserved communities receive increased volumes of mortgage credit. If these results can be generalized beyond mortgage lending—an open question—it would suggest that CRA agreements have been effective in fostering broader community and household development efforts. An important focus for future research will be establishing the extent to which these results can be generalized beyond mortgages to small business credit, branching services, and the like.

Since agreements evolved in response to the CRA itself, an interesting issue is whether these results can be extended to draw conclusions about the law. While the results are potentially suggestive, such an extension would be a considerable leap, given that the current study examines behavior by a small fraction of the institutions covered by the law. It does, however, add to a growing literature suggesting that the CRA has resulted in real benefits to lower-income and minority communities (Apgar and Duda 2003; Avery, Bostic, and Canner 2005; Avery, Calem, and Canner 2003; Zinman 2002) and supports proponents who argue that the CRA is necessary to help overcome market imperfections and promote the advancement of lower-income and minority neighborhoods and households. It also supports those arguing against recent actions and proposals to reduce the scope of the law in the name of reducing the regulatory burden for smaller banking institutions (Barr 2005).

The results also suggest that the structure of CRA agreements plays an important role in determining their effectiveness. Levels of targeted mortgage lending are significantly related to whether an agreement includes mortgage counseling and technical assistance (positively), small business counseling and technical assistance (negatively), and review committees (negatively). We were not able to determine and evaluate the underlying causes of these relationships, and this is an important area for future research. For example, it could be that small business counseling services divert resources away from mortgage lending. Such a diversion could be good or bad, depending on the needs of the targeted community, and only a detailed agreement-level analysis can shed light on such issues. Moreover, because providing these services invariably involves both the lender and a community-based organization, further analysis could shed light on the importance of interorganizational collaboration.

An additional question to be studied is whether the amount of qualified lending satisfied the pledges outlined in the agreements, regardless of whether qualified lending increased or not. This is an interesting issue that raises questions about ultimate enforceability and could help shed light on the true strength of CRA agreements.

Authors

Raphael W. Bostic is an Associate Professor in the School of Policy, Planning, and Development at the University of Southern California. Breck L. Robinson is an Associate Professor in the School of Urban Affairs and Public Policy at the University of Delaware.

The authors would like to thank Robert Avery, Paul Calem, Glenn Canner, and Jonathan Zinman, the editor, and two anonymous reviewers for comments on previous drafts of the article. The authors also thank Melissa Mugarbel, Jennifer Attrep, and Deborah Rhoades for excellent research assistance and the National Community Reinvestment

Coalition, especially Joshua Silver, for access to data. A previous version of this article was presented at the Federal Reserve System's third biennial research conference titled "Sustainable Community Development: What Works, What Doesn't and Why." A portion of this research was conducted while the first author was an employee of the Board of Governors of the Federal Reserve System. The views expressed are those of the authors and do not necessarily reflect the views of the Board of Governors of the Federal Reserve System or its staff.

References

- Apgar, William, and Mark Duda. 2003. The Twenty-Fifth Anniversary of the Community Reinvestment Act: Past Accomplishments and Future Regulatory Challenges. *FRB New York Policy Review* 9(2):169–91.
- Arrow, Kenneth J. 1972a. Models of Job Discrimination. In *Racial Discrimination in Economic Life*, ed. Anthony H. Pascal, 83–102. Lexington, MA: Lexington.
- Arrow, Kenneth J. 1972b. Some Mathematical Models of Race Discrimination in the Labor Market. In *Racial Discrimination in Economic Life*, ed. Anthony H. Pascal, 187–203. Lexington, MA: Lexington.
- Avery, Robert B., Raphael W. Bostic, Paul S. Calem, and Glenn B. Canner. 1999. Trends in Home Purchase Lending: Consolidation and the Community Reinvestment Act. *Federal Reserve Bulletin* 85(2):81–102.
- Avery, Robert B., Raphael W. Bostic, and Glenn B. Canner. 2005. Assessing the Necessity and Efficiency of the Community Reinvestment Act. *Housing Policy Debate* 16(1):143–72.
- Avery, Robert B., Paul S. Calem, and Glenn B. Canner. 2003. *The Effects of the Community Reinvestment Act on Local Communities*. Unpublished paper. Board of Governors of the Federal Reserve System.
- Barr, Michael S. 2005. Credit Where It Counts: The Community Reinvestment Act and Its Critics. *New York University Law Review* 80(2):513–652.
- Becker, Gary S. 1971. *The Economics of Discrimination*. 2nd ed. Chicago: University of Chicago Press.
- Benston, George J., and Daniel Horsky. 1979. Redlining and the Demand for Mortgages in the Central City and Suburbs. *Journal of Bank Research* 10(2):72–87.
- Berger, Allen N., Leora F. Klapper, and Gregory F. Udell. 2001. The Ability of Banks to Lend to Informationally Opaque Small Businesses. *Journal of Banking and Finance* 25:2127–67.
- Berger, Allen N., and Gregory F. Udell. 1998. The Economics of Small Business Finance: The Roles of Private Equity and Debt Markets in the Financial Growth Cycle. *Journal of Banking and Finance* 22:613–74.
- Berkovec, James, and Peter Zorn. 1996. How Complete Is HMDA? HMDA Coverage of Freddie Mac Purchases. *Journal of Real Estate Research* 11(1):39–55.

- Black, Harold, Robert L. Schweitzer, and Lewis Mandell. 1978. Discrimination in Mortgage Lending. *American Economic Review* 68(2):186–91.
- Board of Governors of the Federal Reserve System. 2000. *The Performance and Profitability of CRA-Related Lending: Report to Congress*. Washington, DC.
- Board of Governors of the Federal Reserve System. 2005. Press release, February 25. World Wide Web page <<http://www.federalreserve.gov/boarddocs/press/bcreg/2005/20050225/default.htm>> (accessed September 29).
- Bostic, Raphael W., and Breck L. Robinson, 2003. Do CRA Agreements Influence Lending Patterns? *Real Estate Economics* 31:23–51.
- Bostic, Raphael W., and Breck L. Robinson. 2004. The Impact of CRA Agreements on Community Banks. *Journal of Banking and Finance* 28:3069–95.
- Bradford, David F., and Harry H. Kelejian. 1972. An Econometric Model of Flight to the Suburbs. *Journal of Political Economy* 81:566–89.
- Brown, L. David. 1998. Creating Social Capital: Nongovernmental Development Organizations and Intersectoral Problem Solving. In *Private Action and the Public Good*, ed. Walter W. Powell and Elisabeth S. Clemens, 228–41. New Haven, CT: Yale University Press.
- Calem, Paul S. 1996. Mortgage Credit Availability in Low- and Moderate-Income Minority Neighborhoods: Are Information Externalities Critical? *Journal of Real Estate Finance and Economics* 13(1):71–89.
- Calomiris, Charles W., Charles M. Kahn, and Stanley D. Longhofer. 1994. Housing Finance Intervention and Private Incentives: Helping Minorities and the Poor. *Journal of Money, Credit, and Banking* 26(3):634–74.
- De Vita, Carol J. 1999. Nonprofits and Devolution: What Do We Know? In *Nonprofits and Government: Collaboration and Conflict*, ed. Elizabeth T. Boris and C. Eugene Steuerle, 213–33. Washington, DC: Urban Institute Press.
- Federal Deposit Insurance Corporation and the Comptroller of the Currency. 2005. Federal Banking Agencies Propose Revisions to Community Reinvestment Act Regulations. Press release, February 22. World Wide Web page <<http://www.fdic.gov/news/news/press/2005/pr1305.html>> (accessed September 29).
- Fishbein, Allen J. 1992. The Ongoing Experiment with “Regulation from Below”: Expanded Reporting Requirements for HMDA and CRA. *Housing Policy Debate* 3(2): 601–36.
- Frey, William H. 1980. Status Selective White Flight and Central City Population Change: A Comparative Analysis. *Journal of Regional Science* 20:71–89.
- Garwood, Griffith L., and Delores S. Smith. 1993. The Community Reinvestment Act: Evolution and Current Issues. *Federal Reserve Bulletin* 79:251–67.
- Goldberg, Deborah. 2002. The Community Investment Act and the Modernized Financial Services World. *ABA Bank Compliance*, January/February, pp. 13–19.

Gruben, William C., Jonathan A. Neuberger, and Ronald H. Schmidt. 1990. Imperfect Information and the Community Reinvestment Act. *Federal Reserve Bank of San Francisco Economic Review* 0(3):27–46.

Gunther, Jeffery W. 2000. Should CRA Stand for Community Redundancy Act? *Cato Institute Regulation* 23:56–60.

Harrison, David M. 2001. The Importance of Lender Heterogeneity in Mortgage Lending. *Journal of Urban Economics* 49(2):285–309.

Harvey, Kenneth D., M. Cary Collins, Peter Nigro, and Breck L. Robinson. 2001. Disparities in Mortgage Lending, Bank Performance, Economic Influence, and Regulatory Oversight. *Journal of Real Estate and Finance* 23:379–410.

Immergluck, Daniel. 2004. *Credit to the Community: Community Reinvestment and Fair Lending Policy in the United States*. Armonk, NY: Sharpe.

Joint Center for Housing Studies. 2002. *The 25th Anniversary of the Community Reinvestment Act: Access to Capital in an Evolving Financial Services System*. Cambridge, MA: Harvard University.

Kain, John F. 1968. Housing Segregation, Negro Employment, and Metropolitan Decentralization. *Quarterly Journal of Economics* 82:32–59.

Lacker, Jeffrey M. 1995. Neighborhoods and Banking. *Federal Reserve Bank of Richmond Economic Quarterly* 81(2):13–38.

Lacy, Robert L., and John R. Walter. 2002. What Can Price Theory Say about the Community Reinvestment Act? *Federal Reserve Bank of Richmond Economic Quarterly* 88:2–27.

Lang, William W., and Leonard I. Nakamura. 1993. A Model of Redlining. *Journal of Urban Economics* 33:223–34.

Lauria, Mickey. 1998. A New Model of Neighborhood Change: Reconsidering the Role of White Flight. *Housing Policy Debate* 9(2):395–424.

Ling, David C., and Susan M. Wachter. 1998. Information Externalities and Home Mortgage Underwriting. *Journal of Urban Economics* 44(3):317–32.

Litan, Robert E., Nicholas P. Retsinas, Eric S. Belsky, Gary Fauth, Maureen Kennedy, and Paul Leonard. 2001. *The Community Reinvestment Act after Financial Modernization: A Final Report*. Washington, DC: U.S. Department of the Treasury.

Longhofer, Stanley D., and Stephen Peters. 2005. Self-Selection and Discrimination in Credit Markets. *Real Estate Economics* 33(2):237–68.

Massey, Douglas S., and Nancy A. Denton. 1993. *American Apartheid: Segregation and the Making of the Underclass*. Cambridge, MA: Harvard University Press.

Munnell, Alicia H., Geoffrey M. B. Tootell, Lynn E. Browne, and James McEneaney. 1996. Mortgage Lending in Boston: Interpreting the HMDA Data. *American Economic Review* 86(1):25–53.

- Murray, Charles. 1984. *Losing Ground: American Social Policy, 1950–1980*. New York: Basic.
- National Community Reinvestment Coalition. 2002. *CRA Commitments*. Washington, DC.
- Office of Thrift Supervision. 2004. Community Reinvestment Act Regulations. *Federal Register* 69(159):51,155–161.
- Phillips, Robert F., and Anthony M. J. Yezer. 1996. Self-Selection and Tests for Bias and Risk in Mortgage Lending: Can You Price the Mortgage if You Don't Know the Process? *Journal of Real Estate Research* 11(1):87–102.
- Rachlis, Mitchell B., and Anthony M. J. Yezer. 1993. Serious Flaws in Statistical Tests for Discrimination in Mortgage Markets. *Journal of Housing Research* 4(2):315–36.
- Schill, Michael H., Ingrid Gould Ellen, Amy Ellen Schwartz, and Ioan Voicu. 2002. Revitalizing Inner-City Neighborhoods: New York City's Ten-Year Plan. *Housing Policy Debate* 13(3):529–66.
- Schwartz, Alex. 1998a. Bank Lending to Minority and Low-Income Households and Neighborhoods: Do Community Reinvestment Agreements Make a Difference? *Journal of Urban Affairs* 20(3):269–301.
- Schwartz, Alex. 1998b. From Confrontation to Collaboration? Banks, Community Groups, and the Implementation of Community Reinvestment Agreements. *Housing Policy Debate* 9(3):631–62.
- Stiglitz, Joseph E., and Andrew Weiss. 1981. Credit Rationing in Markets with Imperfect Information. *American Economic Review* 71(3):393–410.
- Wilson, William Julius. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*. Chicago: University of Chicago Press.
- Yezer, Anthony M. J., Robert F. Phillips, and Robert P. Trost. 1994. Bias in Estimates of Discrimination and Default in Mortgage Lending: The Effects of Simultaneity and Self-Selection. *Journal of Real Estate Finance and Economics* 9(3):197–215.
- Yinger, John. 1987. The Racial Dimension of Urban Housing Markets in the 1980s. In *Divided Neighborhoods: Changing Patterns of Racial Segregation*, ed. Gary A. Tobin, 43–67. Beverly Hills: Sage.
- Zinman, Jonathan. 2002. The Efficacy and Efficiency of Credit Market Interventions: Evidence from the Community Reinvestment Act. Unpublished paper. Massachusetts Institute of Technology.

