

**What Makes CRA Agreements Work?
A Study of Lender Responses to CRA Agreements**

by

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Abstract

One response to the incentives provided by the Community Reinvestment Act of 1977 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 paper examines whether lenders actually change their behavior after entering into CRA agreements. Using data from the NCRC on CRA agreements and HMDA on mortgage lending, we find that lenders increase their lending activity upon entering an agreement, with the largest increases occurring two to three years after the initiation of the agreement. This result is consistent with other research on the response of lending to the implementation of a CRA agreement. Additional analysis points to mortgage counseling and technical assistance as a key component in increasing the effectiveness agreements, while the existence of review committees seems to depress lending.

1. Introduction

Today's bankers are acutely aware of their social responsibility to provide financial services within their service area. Financial institutions attempt to address the financial service needs of their community in a number of ways, including providing no-cost checking, waiving minimum balance requirements, and offering credit counseling. Perhaps the most important service that financial institutions can offer is the extension of credit, which can be vital for enhancing the economic viability of the communities they serve.

The record of financial institutions in serving the needs of individuals and businesses within their community has long received considerable scrutiny.² Partially in response to complaints about a lack of service for all segments of the population served by banking institutions, Congress passed the Community Reinvestment Act (CRA) as a potential remedy to this perceived problem. The CRA required the banking regulatory agencies to take steps to encourage financial institutions to serve all segments of their local service area. Importantly, CRA provides guidelines for regulators to periodically evaluate a lending institution's performance in meeting the financial needs of its community. Out of these evaluations, each institution is assigned a CRA performance rating that is ultimately released to the public.

Institutions that receive poor CRA performance ratings risk adverse publicity and the possible denial or delay of a proposed merger or acquisition. One tool that banking institutions have used to improve their CRA rating is the CRA agreement. CRA agreements typically involve pledges by a lending institution to extend a certain volume or dollar amount of loans to targeted groups or communities. These loans typically are

directed toward segments of a community that traditionally would be viewed as “under-served,” notably lower-income and minority individuals. Since the early 1980s, financial institutions have entered into more than 300 CRA agreements, which are typically written in conjunction with community groups and government entities.

There is an emerging literature evaluating the effectiveness of CRA agreements in increasing lending to minority and lower-income communities.³ This paper focuses on a related aspect, namely, whether institutions entering into CRA agreements subsequently change their lending behavior. In addition, this research attempts to determine those aspects of CRA agreements that appear to be most effective in leading to changes in behavior for those lending institutions that participate in these agreements.

This issue is important along several dimensions. First and foremost, if CRA agreements do not produce behavioral changes on the part of participating institutions, one must wonder about whether CRA agreements are an ideal vehicle for producing change. Second, by identifying those features associated with positive changes in behavior, the research seeks to establish a set of “best practices” for inducing lenders to increase mortgage activity in targeted areas. Finally, the research provides insights regarding effective inter-organization coordination and cooperation and thus contributes to the organizational behavior literature.

The analysis in this study relies on data from a National Community Reinvestment Coalition database on CRA agreements, the Call Report, and Home Mortgage Disclosure Act filings and focuses on the period from 1993 to 2001. The results suggest that institutions that enter into CRA agreements subsequently increase

² Immergluck (1998) and Mills and Luan’Sende (1993) are but two examples.

³ See Schwartz (1998b) and Bostic and Robinson (2002 and 2003).

their lending after the agreement has been initiated. These lenders are found to increase their lending activity upon entering an agreement, with the largest increases occurring after two to three years of activity. In addition, the results show that agreements that include mortgage counseling and technical assistance are an important positive factor, while the existence of review committees seems to depress lending.

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

2. Overview of CRA and CRA Agreements

One area of government regulation in banking has focused on providing credit to lower-income and minority borrowers and neighborhoods. A key component of this regulation is the Community Reinvestment Act of 1977 (CRA), which requires banks to provide comparable services to all parts of their service area, including low- and moderate-income individuals and neighborhoods.⁴ 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 service area, including a review of mortgage and small-business lending and bank branching patterns. Based on the regulatory findings from the examination, each institution receives a CRA rating or grade. Second, CRA also requires regulators to use an institution's CRA record as part of the review process when deciding on an

institution's application for a change in operation, such as a merger or branch expansion or closure.

A poor CRA performance rating can have negative effects for lenders. Institutions that receive poor CRA 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 as part of the review process for mergers and acquisitions, CRA is likely to be of particular interest to banking institutions considering consolidation. A poor CRA record may lead to an application's being denied or postponed until the bank's CRA performance improves. In addition, banks with poor CRA records are often more likely to face challenges from community groups on CRA grounds. These protests can lead to considerable negative publicity for the bank and may require the use of significant bank resources to address particular allegations. Given the pace of consolidation in recent years, the demonstration of a commitment to and compliance with CRA and fair lending laws has become a more salient issue.

An increasingly common means for lending institutions to demonstrate their commitment to and compliance with CRA is to enter 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 paper, often include explicit lending level targets to lower-income and minority neighborhoods and individuals, with the most common targets involving mortgage lending. Pledges 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. Often these agreements will have provisions such as credit counseling, application review

⁴ Low- and moderate-income is collectively referred to as "lower-income" throughout this paper.

committees, and lenders assigned to review and originate loans from targeted populations in order to enhance the success of their lending programs.⁵ More recently, lenders have begun to make voluntary lending pledges, in which they commit to lend to targeted communities without explicitly signing an agreement with a specific community group or other organization. Table 1 shows how these agreements have grown in popularity since the passage of CRA.

CRA agreements can serve the interests of both community-based organizations and lenders. From the perspective of community-based organizations, the goal of CRA agreements is to increase the pool of mortgage recipients and the provision of banking services in their neighborhoods. Underlying this objective is the view that there are profitable lending and service opportunities that are going unmet because of market imperfections, such as asymmetric information or imperfect competition.⁶ The CRA agreement, in this view, is a tool that helps lenders overcome information problems and find the previously overlooked potential customers. Ultimately, the community benefits from this expansion of credit, which is the objective of the community organization.

In such a scenario, lenders also benefit because their customer base expands and their profits increase. However, even if there are no market imperfections, CRA agreements can be useful for lenders, as they can be used as a vehicle for reducing the costs associated with CRA non-compliance. Banking institutions that meet CRA agreement goals for lending and providing services may be less likely to be rated as having a poor CRA performance by regulators. Similarly, lenders entering into CRA agreements may be less likely to face CRA-based challenges to merger applications.

⁵ Schwartz (1998a) provides a thorough review of the elements of CRA agreements.

Importantly, if the costs of non-compliance with CRA are sufficiently large, lenders entering agreements may be willing to subsidize their lending in the targeted areas to meet their goals.⁷

In both of these cases, one would expect an increased use of targeted lending by banking institutions that enter into CRA agreements. However, little empirical research has been conducted that focuses on this question. Schwartz (1998b) finds that banks with agreements were relatively more active in serving minority and lower-income populations than in serving the overall state or metropolitan market, which suggests that agreements may be accomplishing this objective. This study does not restrict the targeted lending to the specific areas covered by the agreements, though, and so we are therefore limited in terms of the conclusions one can draw on this matter.

The current research builds on the work in Schwartz (1998b) and tries to more definitively address the question of whether banking institutions that enter into agreements increase their targeted lending as defined by the agreements. An important auxiliary question is whether the 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 as to whether there are market imperfections, a finding that the targeted lending remained at higher levels post-agreement would only be consistent with the view that market imperfections were present in the local lending market. Alternatively, a return to pre-agreement lending levels would

⁶ It is straightforward to show that either market condition can result in creditworthy borrowers not receiving credit. See Gruben, Neuberger, and Schmidt (1990) and Stiglitz and Weiss (1981) for examples.

⁷ This is most likely to occur among large lenders, who can take advantage of their scale and diversification to implement such a strategy with a relatively small effect on their overall profitability.

suggest that the market was perfectly competitive and that costs of CRA non-compliance 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 agreements are more effective in leading to increased targeted lending than others. It could be that an agreement exclusively focused on one type of activity (say, mortgage lending) is more effective than one whose focus spans several activities and multiple product types. Alternatively, much research has focused on collaborations between entities that have different missions, with some finding that the collaboration enhanced overall performance and resulted in better outcomes.⁸ In this context, agreements that establish a collaboration between lenders and community groups, such as counseling sessions provided by the staffs of the lender and the community group, could be more effective in increasing lending. The current research also takes up this question.

3. Data

The empirical tests require three types of data:

- information on CRA agreements
- information on the banking institutions involved in the agreements
- information that quantifies the lending by the institutions that fulfill the obligations laid out in the agreements.

Regarding lending, the best available national data track mortgage lending and are available via the Home Mortgage Disclosure Act (HMDA). Since 1990, provisions in HMDA have required that most institutions with offices in metropolitan areas provide detailed information on every application for a home mortgage they receive over a year.

For the purposes of the current research, the relevant data items are application disposition (approved, denied, withdrawn), the location of the property, and borrower race or ethnicity and income. With this information, it is possible to determine the volume of lending to the targeted geography and populations outlined by the agreements. Because of changes in regulatory reporting requirements, HMDA data collected prior to 1993 are not directly comparable to HMDA data in subsequent years. Thus, the analysis is restricted to 1993 through 2001.

Identifying and tracking lending institutions, while straightforward in principle, 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 in years toward the end of the study period would not be directly comparable to that 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 lender was affiliated with through consolidation between 1993 and 2001. We use the Federal Reserve Board's National Information Center (NIC) 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 the affiliated institutions in every year of the analysis. For example, suppose a lender purchased two institutions

⁸ For example, DeVita (1999) and Brown (1998) document the benefits of collaboration between government and non-profit and non-governmental organizations, respectively.

over the course of 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 was gathered from the National Community Reinvestment Coalition (NCRC). NCRC is a trade association of more than 800 community groups and local public agencies that focuses on CRA-related issues. Each year, NCRC updates its list of CRA agreements by surveying its membership and reviewing media accounts of CRA agreements.⁹ Where possible, NCRC obtains hard copies of the agreements negotiated between its members and lending institutions. Information was collected from these hard copies that specifies the types and amounts of lending pledges, the targeted group or community, whether non-lending technical assistance is being provided, the duration of the agreements, and the years the agreements are active. Not all CRA agreements initiated by NCRC members are included in the analysis. Specifically, the sample of agreements was constrained to those agreements that included a pledge for mortgage credit that could be tracked to a targeted community.¹⁰

We use the information collected about each agreement to determine which loans to include as “qualified lending” for each agreement. Each agreement specifies a state, county, city, or neighborhood that is the focus of the agreement. 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 the HMDA data, each originated

⁹ NCRC publishes its list in *CRA Commitments*, which also reviews innovative provisions of CRA agreements in the areas of home mortgage, small business, and community development lending and other CRA-related investments. More information on NCRC can be obtained via its web site at <http://www.ncrc.org> or by phone at 202-628-8866.

loan 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 mortgage amount of those loans satisfying the target population criteria were summed. Lower-income neighborhoods and households and moderate-income households were defined in the standard way.¹¹

To determine whether lending activity changes as a result of CRA agreements, it is necessary to identify the period when an agreement is active to differentiate behavior in that period from that in other times. The NCRC data include the date an agreement became active, as well as the duration of the agreement in years. It is therefore straightforward to identify the years of an agreement's active life.

Characteristics describing qualitative aspects of the CRA agreements are also available from the data collected from NCRC. These include whether the lender offered mortgage loan counseling and technical assistance, small-business counseling and technical assistance services, and pledges to provide an increased level of banking services, including adding bank branches. The CRA agreement database also includes whether the agreement mandates regular meetings of a committee chartered with reviewing progress on the agreement and whether there were any minority hiring pledges regarding employees or board members.

While the NCRC data include information on more than 200 CRA agreements, our focus on the 1993 to 2001 period eliminates a significant fraction of them. For example, many agreements begin and end prior to 1993. In these cases, we do not

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 less than 80 percent of the median income of the metropolitan area. Lower-income households are those with an income less than 80

observe lending prior to the agreement's initiation and therefore cannot determine whether lending behavior changed after the agreement was in force. Eliminating agreements that cannot be used leaves us with 51 agreements.

Table 1 presents some statistics on the sample of CRA agreements used in the analysis. On average, the CRA agreements in the sample involved a pledge of \$2.3 million over a five-year period. Almost all the agreements in the sample were formal agreements between a lender and a community-based organization. In addition, pledges in areas other than mortgages were common for these agreements. More than two-thirds of the sample agreements include pledges to lend to small businesses, with a comparable fraction committing to investments in community development. A significant percentage of the pledges had commitments for technical assistance and branch-related service expansion, such as opening a new branch or extending branch hours. Slightly more than 39 percent of the agreements established formal review committees populated by members of the local community, and most of these committees met either quarterly or semi-annually. Finally, in about one-fifth of the agreements, lenders committed to increase minority representation, either on their staffs or on their Boards of Directors.

4. Initial Results

This study focuses on the question of whether lenders change their behavior upon entering agreements and whether any changes persist after the agreement's contract life has ended. Table 2 provides some initial evidence on this by showing how an institution's average amount of annual lending, measured by either number of loans or

percent of the median income of the metropolitan area. Moderate-income households are those with an income less than 120 percent but greater than 80 percent of the median income of the metropolitan area.

total dollar volume, when an agreement was active compares with the amount of annual lending either prior to when or after the agreement is active. The first two columns show that most lenders increase lending in years the agreement is active compared with the years just prior to the agreement, and that the change is large.¹² The average increase in lending was 65 percent measured by number of loans and 94 percent measured by dollar volume.

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

The second pair of columns in Table 2 compares an institution's annual lending while an agreement is active with its lending in the years following the agreement's 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 the data show that on average the institutions in the sample increased their average annual lending in the post-agreement period. Once outliers are removed, we find that the average lender reduced its annual lending 12.7 percent after the agreement ended.¹⁴

¹² The figures for these columns include only those agreements for which we observe lending before and while an agreement is active. This requirement leaves 47 out of the 51 agreements.

¹³ These figures include only those agreements for which lending is observed while and after an agreement is active. This requirement leaves 36 out of the 51 agreements.

¹⁴ Outliers here are defined as having growth in lending exceeding 400 percent, which includes four agreements. If we are more liberal and omit only extreme outliers, defined as having average annual post-agreement lending increase more than 1000 percent, the average growth in annual lending falls to 23.6 percent. One agreement is an extreme outlier by this criterion.

These initial results are consistent with the view that CRA agreements are effective in changing the lending behavior of most lenders that enter into such agreements. For the median lender, the incentives provided by the CRA agreements they enter appear to result in an increase in targeted lending. The post-termination results further point to the importance of the incentives associated with the CRA agreements. The results indicate that after the incentives are no longer in place, lenders appear to cut back on the amount of investment they direct to the targeted neighborhoods and communities.

Given that not all agreements are associated with either increases in lending or sustained increases in lending after the agreement has ended, it may be that the characteristics of the agreements play a role in determining their ultimate success. To explore this possibility, we first break agreements into two groups according to whether their enactment was associated with an increase or decrease in lending relative to the level of lending prior to when the agreement became active and then compare the characteristics of the agreements in the two groups. We focus on four aspects of the agreements – whether they (1) were formal or voluntary, (2) involved a broad range of monetary pledges, (3) included service-related pledges, and (4) involved other types of commitments.

The results of this process are presented in Table 3. The most striking aspect of the data in Table 3 is the relative lack of variation in the characteristics of the CRA agreements in the various agreement groups. Agreements associated with annual lending increases upon the initiation of an agreement were significantly more likely to involve smaller mortgage pledge amounts and involve other mortgage-related lending pledges.

Agreements in the two groups were not significantly different along any other characteristic dimensions. Regarding termination of agreements, only the presence of small business-related pledges significantly differed among agreements associated with lending increases as compared with those associated with lending declines. Thus, there is relatively little evidence to suggest that the characteristics of CRA agreements are an important consideration.

5. Multivariate Tests

The results in Table 2 suggest that CRA agreements induce lenders to increase their targeted lending, but that lending 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:

$$Lend_{i,t} = \alpha_{i,t} + \beta_1 CRACHARS_{i,t} + \delta_i + \varepsilon_{i,t}. \quad (1)$$

Here, $Lend_{i,t}$ 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 , and δ_i is an agreement random effect. 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 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. One very important variable is ACTIVE, a binary variable that equals one if the qualified lending occurred in a year the CRA agreement was active and zero otherwise. A CRA agreement is considered active if the agreement 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 (YRSUP). Assuming that CRA agreements are effective and lead to an increase in qualified mortgage lending activity by participating institutions, we expect the sign on the coefficients for these variables to be positive.

We also construct variables to indicate whether qualified lending occurred in years after the agreement had expired (ENDED) and the number of years since an expired agreement was in force (YRSENDED). For these variables, we take our cue from the results in section 4 suggesting a decline in lending, and we expect the coefficients on these variables to have a negative sign.

Other variables in CRACHARS represent various characteristics associated with CRA agreements. Regarding lending and investment pledges, the vector includes individual identifiers indicating the existence of pledges for single-family mortgages, other mortgages, small-business lending, lending to minority- and women-owned businesses, community development investments, and other pledges. The CRACHARS 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, semi-annually, or annually.

Finally, CRACHARS includes two dummy variables for whether the agreement includes pledges to increase minority representation among the lender's staff and the lender's Board of Directors.

Table 4 presents the results of various estimates of equation 1 where the dependent variable is the number of qualified loans originated. Column one presents the results of a simple specification in which the only CRACHARS variables included in the model are whether the year being observed is before, after, or while an agreement was active (before is the omitted variable). The data show that having a CRA agreement that was in force is associated with an increase in annual lending of 30 loans over the level of annual lending in the years prior to the agreement's enactment. While the coefficient for the ACTIVE variable is significant only at the 10 percent level, this remains a noteworthy result given the relatively small number of agreements included in the sample.

The results also show that the coefficient on ENDED is positive and statistically significant at 5 percent. Moreover, the coefficient is larger in magnitude than that for ACTIVE, although the difference in the two coefficients is not statistically significant. A key point here is that the coefficient on ENDED is more highly statistically significant than the coefficient on ACTIVE, which suggests that the new level of lending following the expiration of an agreement is clearly greater than the pre-agreement lending levels. This result, which does not conform to our expectations, suggests that lenders maintain their level of CRA agreement lending activity even after the agreement's incentives have ended. It appears that lenders arrive at a new lending equilibrium that is higher than the level of lending prior to the establishment of the CRA agreement. Such a finding is

consistent with the view that CRA agreements help expand credit opportunities in the targeted markets and that these targeted markets offer profitable opportunities for lenders.

The regression in the second column of Table 4 adds YRSUP to the specification to see if lending increases for those agreements that have been active for a longer period of time. If this result were to hold, it would be 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 over time.¹⁵ The data support this view, as the YRSUP variable is positive and significant at the 10 percent level. Also, the ENDED variable retains its sign and significance in this model.

It is important to note that the observed results for ACTIVE, YRSUP, and ENDED are robust across specifications that include many different combinations of the variables in CRACHARS. While all of these permutations are not shown here, we include two specifications in the final columns of Table 4 that show estimates that offer interesting insights. The third column shows estimates where all of the non-financial pledge variables are included. As before, the coefficients on ACTIVE and ENDED are positive and significant. In addition, the coefficient on the mortgage counseling and technical assistance variable is very positive and highly significant. Conversely, the coefficient on the variable indicating whether the agreement led to the creation of a review committee is negative and significant.

These two latter variables give some indication as to 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 efforts in

which the two parties collaborate toward a common end can be effective. On the other hand, the review committee relationship suggests that agreements that include some adversarial constructs may adversely impact the effectiveness of CRA agreements in helping to increase targeted lending.

The final column in Table 4 attempts to further break down the relationship between the existence of a review committee and the amount of qualified lending. In this specification, the review committees are partitioned according to their meeting frequency. The data show that lending declines as the periodicity of the committee meetings lengthens. Thus, it appears that, given the acknowledgment of an adversarial aspect to an agreement, an increased amount of monitoring yields benefits.

Table 5 shows a comparable analysis where the dependent variable is the amount of qualified lending measured in terms of loan dollars. The results here are largely the same as those using the number of loans as the dependent variable. The volume of qualified lending increases when agreements are active and this higher level of lending persists even after they have expired. Among CRA agreement characteristics, mortgage counseling again appears to enhance the effectiveness of agreements, while the existence of a review committee seems to hamper the agreements' effect.

The results in Table 4 and Table 5 do not account for changes in lending over time. It has been well documented that total mortgage lending systematically increased during the period of analysis (Avery, Bostic, Calem, and Canner, 1999). This raises the possibility that the results for CRA agreements may be an artifact of this trend. Thus, the next set of regressions, the results of which are summarized in Table 6, estimate:

$$Lend_{i,t} = \alpha_{i,t} + \beta_1 CRACHARS_{i,t} + \delta_i + \gamma_t + \varepsilon_{i,t} \quad (2)$$

¹⁵ Presumably, such loans are profitable.

where γ_t is a vector of year dummy variables. In estimating equation (2), it is useful to characterize 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.

These regressions show much the same increase in targeted activity but, this time, add some nuanced detail. In particular, the data show that lending increases gradually over time, with levels of targeted lending becoming significantly higher than pre-agreement 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 pre-agreement years. Rather, there is a great deal of variation in experiences, which is 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 we observe a large increase in lending activity. This effect may be an artifact of the very few agreements we observe at this stage.¹⁶ This overall pattern – a runup in targeted lending in the early years of an agreement’s life that is not uniformly sustained in later years – is consistent with findings in Bostic and Robinson (2003) regarding the response of metropolitan level targeted lending to the presence of CRA agreements.

A potentially puzzling result of the estimates in equation (2) is the consistent finding that qualified lending increases in the years after an agreement has ended. Given that this variable includes lending over many years, particularly later years in which lending levels were higher, this could reflect a pooling problem. However, it could also be consistent with this sort of activity moving out of a specialized, experimental lending unit and into a more standardized lending group. While we have no evidence to indicate this is the case, it is a possibility that merits additional study.

Finally, the results for mortgage counseling and the existence of a review committee conform to those found earlier. Mortgage counseling and technical assistance enhances targeted lending activity, while review committees seem to adversely impact it. The estimates in Table 6 also suggest that small-business counseling and technical assistance is negatively related to the level of a lending institution's targeted mortgage lending. This might suggest that a reduction in the focus of resources devoted toward mortgage activities is a hindrance for meeting mortgage lending goals.

6. Conclusion

The importance of financial services, especially credit, for ensuring the health of neighborhoods has long been recognized. The CRA is one tool for helping lower-income communities to receive adequate levels of financial services and to help ensure their economic viability. One response to these incentives provided by CRA has been for lenders and community groups to enter 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. CRA agreements can also help lenders meet CRA objectives and avoid the potentially large costs of non-compliance, which include negative publicity and lost time regarding applications for mergers and other activities.

This paper examines whether lenders actually change their behavior after entering into CRA agreements. Using data obtained from the NCRC on CRA agreements and HMDA on mortgage lending, we find that CRA agreements have been associated with increases in targeted lending by the institutions that entered them. These lenders are

¹⁶ Only two agreements in the sample were in force for 9 years.

found to increase their lending activity upon entering an agreement, with the largest increases occurring after two to three years of activity. This result is consistent with other research on the response of lending to the implementation of a CRA agreement. Moreover, the increased level of targeted lending associated with the introduction of CRA agreements persists after the agreements end. This latter result suggests that CRA agreements have helped lenders find new, profitable opportunities in previously overlooked communities.

The analysis also points to mortgage counseling and technical assistance as a key component of effective agreements. This result seems to emphasize the importance of lenders and community-based organizations having a collaborative relationship. The importance of collaboration is also suggested by the finding that levels of lending are adversely impacted by the presence of review committees that are established by community groups wishing to monitor the lender's activities. This result indicates that review committee provisions might be a signal that the lender-community group relationship has an adversarial aspect, which ultimately acts to the detriment of all parties.

A question to be studied in future work is whether – regardless of whether qualified lending increased – the amount of qualified lending associated with an agreement satisfied the pledges outlined in the agreements. This is an interesting issue that raises questions regarding the ultimate enforceability of these contracts and could help to shed light on the true strength of CRA agreement incentives.

References

- Avery, R.B., R.W. Bostic, P.S. Calem and G.B. Canner, 1999, "Trends in Home Purchase Lending: Consolidation and the Community Reinvestment Act," *Federal Reserve Bulletin*, 85(2), pp. 81-102.
- Bostic, R.W. and B.L. Robinson, 2003, "Do CRA Agreements Influence Lending Patterns?" *Real Estate Economics*, 31, pp. 23-51.
- Bostic, R.W. and B.L. Robinson, 2002, "Community Banking and Mortgage Credit Availability: The Impact of CRA Agreements," unpublished working paper.
- Brown, L.D., 1998, "Creating Social Capital: Nongovernmental Development Organizations and Intersectoral Problem Solving," in *Private Action and the Public Good*, W.W. Powell and E.S. Clemens (eds.), Yale University Press: New Haven, pp. 228-241.
- De Vita, C.J., 1999, "Nonprofits and Devolution: What Do We Know?" in *Nonprofits and Government: Collaboration and Conflict*, W.T. Boris and C.E. Steuerle (eds.), The Urban Institute Press: Washington, D.C., pp. 213-233.
- Gruben, W.C., J.A. Neuberger, and R.H. Schmidt, 1990, "Imperfect Information and the Community Reinvestment Act," Federal Reserve Bank of San Francisco *Economic Review*, Summer, pp. 27- 46.
- Immergluck, D., 1998, *Getting Down to Business: Assessing Chicago Bank's Small Business Lending in Lower-Income Neighborhoods*, Woodstock Institute report.
- Mills, E.S. and L. Luan' Sende, 1993, *Performance Analysis of Community Reinvestment Lending Programs*, Woodstock Institute report.
- Schwartz, A., 1998a, "From Confrontation to Collaboration? Banks, Community Groups, and the Implementation of Community Reinvestment Agreements," *Housing Policy Debate*, 9(3), pp. 631-62.
- Schwartz, A., 1998b, "Bank Lending to Minority and Low-Income Households and Neighborhoods: Do Community Reinvestment Agreements Make a Difference?" *Journal of Urban Affairs*, 20(3), pp. 269-301.
- Stiglitz, J.E. and A. Weiss, 1981, "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, 71(3), pp. 393-410.

Table 1. 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 (cum.)	\$1.1 million
<i>Type of agreement</i>	
Formal contract	82.4
Voluntary lender pledge	17.6
<i>Percent with other monetary pledges</i>	
Other mortgage-related	37.3
Small business-related	68.6
Minority-, Women-owned businesses	23.5
Community development	66.7
Other	49.0
<i>Percent with service-related pledges</i>	
Mortgage technical assistance and counseling	45.1
Small business technical assistance	17.6
Branch-related	39.2
<i>Percent with other commitments</i>	
Review committee meetings	
Monthly	2.0
Quarterly	17.6
Semi-annually	11.8
Annually	7.8
Minority hiring pledges	
Staff	21.6
Board	5.9

Table 2. Change in Average Annual Qualified Lending Associated with a Change in Agreement Status

	Upon agreement initiation		Upon agreement termination	
	Loans	Loan Dollars	Loans	Loan Dollars
Mean	.656	.938	.762	1.011
Median	.097	.442	-.159	-.059
Maximum	6.750	7.790	18.2	14.432
75 th percentile	1.434	1.613	.522	.800
25 th percentile	-.313	-.253	-.695	-.611
Minimum	-.975	-.955	-.952	-.903
Fraction > 0	.553	.660	.389	.486
Observations	47		36	

NOTE: Growth figures in the first panel are calculated by taking the ratio of the average annual qualified lending when an agreement was in force and the average annual qualified lending before the agreement was enacted. Growth figures in the second panel are calculated by taking the ratio of the average annual qualified lending after an agreement expired and the average annual qualified lending when an agreement was in force.

Table 3. 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	
	Decline	Increase	Increase	Decline
<i>Type of pledge</i>				
Formal	84.2	85.7	85.7	81.8
Voluntary	15.8	14.3	14.3	18.2
<i>Other lending pledges</i>				
Other mortgage-related	15.8	53.6**	42.9	45.5
Small business-related	78.9	67.9	42.9	77.3**
Minority-, Women-owned business	21.1	25.0	35.7	22.7
Community development	78.9	57.1	64.3	68.2
Other	47.4	53.6	42.9	59.1
<i>Service-related pledges</i>				
Mort.-related technical assistance	47.4	50.0	57.1	45.5
Small business technical assistance	21.1	17.9	21.4	22.7
Branch-related	52.6	32.1	42.9	36.4
<i>Other commitments</i>				
Review committee meetings	31.6	42.9	28.6	40.9
Monthly	0	3.6	0	4.5
Quarterly	15.8	21.4	14.3	18.2
Semi-annually	15.8	7.1	14.3	13.6
Annually	0	10.7	0	4.5
Minority hiring pledges				
Staff	36.8	10.7	14.3	13.6
Board	5.3	3.6	0	4.5
MEMO:				
Average pledge amount	\$4.1 B	\$1.1 B	\$406.2 M	\$491.1 M
Average mortgage pledge amount	\$2.6 B	\$172 M*	\$118.3 M	\$96.4 M
Growth/decline in average annual lending (percent)				
Number	-45.5	106	280	-53.5
Dollar volume	-28.7	141	319	-43.9
N	19	28	14	22

NOTE: Four agreements were 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.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 4. Estimated Relationship Between Qualified Lending, Measured by Number of Loans, and Characteristics of CRA Agreements

	(1)	(2)	(3)	(4)
Agreement active (ACTIVE)	30.096* (17.124)	1.154 (24.553)	32.139* (17.124)	31.958* (17.134)
Agreement ended (ENDED)	42.550** (21.529)	41.959* (21.520)	45.675** (21.539)	45.625** (21.563)
Yrs agreement in force (YRSUP)		12.052 (7.344)		
Formal agreement			53.838 (86.307)	49.211 (94.934)
Annual mortgage pledge amount			0.049 (0.039)	0.052 (0.041)
Mort. counseling and technical asst.			224.943*** (75.957)	235.842*** (79.436)
Small bus. counseling and tech. asst.			-141.227 (100.277)	-180.502 (113.252)
Branch services			-53.731 (67.742)	-56.240 (70.600)
Minority hiring pledge			-12.443 (88.195)	-36.553 (101.531)
Minority Board recruitment pledge			-63.469 (137.528)	-27.124 (146.892)
Review committee			-150.749** (67.654)	
Monthly meeting				22.738 (257.041)
Quarterly meeting				-129.901 (88.122)
Semi-annual meeting				-197.420* (109.386)
Annual meeting				-180.999 (127.322)
Constant	115.647*** (32.901)	113.923*** (32.506)	61.849 (82.943)	71.394 (87.289)
Observations	459	459	459	459
Agreements	51	51	51	51
Wald statistic	4.74	7.43	19.09	19.20

NOTE: All regressions include agreement random effects. Standard errors are in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 5. Estimated Relationship Between Qualified Lending, Measured by Loan Dollars, and Characteristics of CRA Agreements

	(1)	(2)	(3)	(4)
Agreement active (ACTIVE)	6,747.473*** (2,606.269)	917.235 (3,734.980)	7,091.610*** (2,606.534)	7,070.023*** (2,608.387)
Agreement ended (ENDED)	12,194.391*** (3,273.781)	12,068.193*** (3,268.858)	12,745.778*** (3,275.987)	12,751.368*** (3,280.614)
Yrs. agrmnt. in force (YRSUP)		2,418.039** (1,114.678)		
Formal agreement			12,512.711 (11,809.671)	11,641.949 (13,020.418)
Annual mortgage pledge amount			9.118* (5.386)	9.491* (5.637)
Mort. counseling and technical asst.			27,394.124*** (10,393.507)	28,753.508*** (10,895.355)
SB counseling and technical asst.			-21,736.718 (13,721.721)	-26,057.438* (15,532.884)
Branch services			-8,942.341 (9,269.555)	-9,525.431 (9,683.074)
Min. hiring pledge			-7,803.325 (12,067.101)	-10,383.843 (13,925.332)
Minority Board recruitment pledge			-2,049.778 (18,821.694)	2,252.371 (20,150.778)
Review committee			-18,472.423** (9,257.399)	
Monthly mtg.				2,417.117 (35,254.922)
Quarterly mtg.				-16,504.687 (12,085.578)
Semi-annual mtg.				-24,735.205* (15,004.337)
Annual meeting				-19,530.773 (17,461.632)
Constant	8,634.567* (4,526.565)	8,300.594* (4,422.944)	-1,240.795 (11,382.152)	92.801 (12,000.810)
Observations	459	459	459	459
Agreements	51	51	51	51
Wald statistic	14.68	19.38	28.53	28.41

NOTE: All regressions include agreement random effects. Standard errors are in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%.

Table 6. Estimated Relationship Between Qualified Lending, Measured by Number of Loans, and Characteristics of CRA Agreements, Time Controls Included

	Dep. var.: <i>Number of loans</i>		Dep. var.: <i>Loan Dollars</i>	
	(1)	(2)	(3)	(4)
<i>Agreement in force</i>				
1 year	24.080 (24.923)	50.601 (30.885)	4,642.281 (3,799.888)	6,811.162 (4,693.134)
2 years	33.433 (24.923)	67.892* (35.590)	7,608.633** (3,799.888)	10,060.123* (5,394.177)
3 years	34.594 (25.378)	83.236** (41.169)	8,369.081** (3,869.202)	11,524.714* (6,228.518)
4 years	32.136 (36.157)	87.469* (52.874)	6,476.552 (5,508.881)	9,531.611 (8,009.819)
5 years	34.069 (45.242)	99.188 (64.094)	8,374.913 (6,889.922)	12,158.269 (9,699.349)
6 years	103.096 (74.656)	178.940* (93.153)	16,984.698 (11,364.047)	21,399.305 (14,123.483)
7 years	89.409 (96.284)	175.447 (116.092)	16,648.249 (14,657.749)	20,918.065 (17,617.230)
8 years	98.076 (96.284)	203.999* (118.380)	18,741.582 (14,657.749)	23,653.280 (17,955.449)
9 years	383.658*** (116.730)	494.375*** (139.031)	74,948.232*** (17,764.404)	79,630.182*** (21,098.873)
Agreement ended	46.051** (21.822)	120.771** (54.672)	12,871.687*** (3,319.656)	16,450.903** (8,222.790)
Ann. mort. pledge amount	0.053 (0.036)	0.057 (0.036)	9.665** (4.588)	9.854** (4.609)
Mort. couns. and tech. asst.	241.560*** (69.204)	251.986*** (69.555)	29,817.540*** (8,872.281)	30,324.136*** (8,937.217)
SB couns. and tech. asst.	-179.600* (98.626)	-187.242* (98.756)	-25,914.926** (12,641.209)	-26,266.344** (12,669.114)
<i>Review Committee</i>				
Monthly meeting	19.304 (223.905)	-9.762 (224.773)	1,738.794 (28,702.962)	199.963 (28,866.658)
Quarterly meeting	-131.930* (76.728)	-136.031* (76.778)	-16,881.930* (9,832.942)	-17,092.621* (9,845.522)
Semi-annual meeting	-204.326** (95.296)	-220.325** (95.896)	-26,016.156** (12,218.648)	-26,775.030** (12,328.665)
Annual meeting	-182.981* (110.870)	-182.228 (110.872)	-19,857.234 (14,208.622)	-19,824.638 (14,214.622)
Constant	62.991 (76.417)	52.340 (78.388)	-1,394.092 (9,856.536)	-1,275.002 (10,215.029)
Year dummies	No	Yes	No	Yes
Observations	459	459	459	459
Number of Agrs	51	51	51	51
Wald statistic	33.56	37.36	50.67	51.91

NOTE: All regressions include agreement random effects. Standard errors in parentheses.

* significant at 10%; ** significant at 5%; *** significant at 1%