

## Assessing the CRA's Necessity and Efficiency\*

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## **Assessing the CRA's Necessity and Efficiency**

Abstract. This paper seeks to address questions about both the need for the Community Reinvestment Act (CRA) and its efficiency. Using data from a recent survey of the performance and profitability of CRA-related lending activities, three main conclusions emerge. First, there is evidence that a majority of surveyed institutions engaged in some lending activities that they would not have in the absence of the CRA. Second, regarding the question of the CRA's need and efficiency, the results are mixed. we find mixed results. The vast majority of institutions responding to the CRA reported that they were able to do so profitably, while a significant minority of institutions incurred losses conducting some of their marginal CRA-related lending activities. Considered together, these results support the view that the CRA has helped to increase credit flows, although not without some cost. Finally, quantitative evidence suggests that marginal CRA-related lending activity tended to be small, measured either by lending volumes and impact on profitability.

Key words: Community Reinvestment Act, regulatory efficiency, low-income lending

The Community Reinvestment Act (CRA) was enacted in 1977 to encourage federally insured commercial banks and savings associations (banking institutions) to help meet the credit needs of their local communities, including those of lower-income areas, in a manner consistent with their safe and sound operation. The legislative history indicates that the CRA arose out of concerns that banking institutions were accepting deposits from households and businesses in those areas while lending elsewhere and overlooking qualified loan applicants from the local community. Further, there was a belief that the failure of banking institutions to take advantage of sound lending opportunities in some of those neighborhoods accelerated the process of economic decay and inhibited private revitalization efforts.

Recently, a number of commentators have questioned whether the CRA is still necessary [Gunther, 2000; Lacy and Walter, 2002]. They argue, for example, that advances in information technology and the lifting of regulatory restrictions governing banking activities have removed impediments to lending, and that today's lending markets are sufficiently competitive to ensure that all creditworthy applicants receive credit. As evidence, they cite the substantial growth in recent years in mortgage lending to lower-income borrowers and neighborhoods, driven largely by lending institutions not covered by the CRA and by CRA-covered institutions in areas where they do not have CRA responsibilities [Avery, et al., 1999; Litan, et al., 2001; Joint Center for Housing Studies, 2002].<sup>1</sup>

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<sup>1</sup>Generally speaking a banking institution's CRA responsibilities are focused on its CRA assessment area(s), the area in which the institution operates its branches and deposit-taking ATMs and any surrounding areas in which it originated or purchased a substantial portion of its loans. For a discussion of the growth in CRA-related lending in recent years and the role of different types of institutions, see

Others, however, believe that the CRA is still necessary [Goldberg, 2002]. They contend that lending markets still have impediments that prevent some creditworthy borrowers from receiving credit. Those with this view point to the relatively low levels of lending in lower-income neighborhoods—despite the recent growth in such lending—and argue that factors such as racial or neighborhood-based discrimination and informational asymmetries still adversely affect credit availability.<sup>2</sup>

Even if the CRA is still needed, there is an issue of regulatory *efficiency*. Economists have long been interested in the efficiency of government regulation in a wide range of policy arenas. For example, there are now large literatures on the benefits and costs of health and safety regulations and environmental regulations [Peltzman, 1975; Blomquist, 1988; Luttner and Morrall, 1994; Viscusi and Hamilton, 1999; Hanemann, 1994]. While economic analyses comparable to those promoted by advocates of regulatory reform have been conducted for a number of banking regulations [Elliehausen, 1998; Office of Information and Regulatory Affairs, 1997], the CRA has not received very much attention in this regard.

This paper seeks to address questions about both the need for the CRA and its efficiency using data from a recent survey of the performance and profitability of CRA-related lending activities. The analysis first identifies the relevant dimension for evaluating the merits of the two viewpoints regarding the need for the CRA—the profitability of the marginal lending activities associated with the CRA—and conducts tests focusing on these dimensions to help resolve the debate. We reach 3 main conclusions. First, we find evidence that a majority of surveyed institutions engaged in

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<sup>2</sup>For statistics on the volume of home purchase lending across neighborhoods of differing incomes, see the Federal Financial Institutions Examination Council (FFIEC) press release, July 26, 2001.

some lending activities that they would not have in the absence of the CRA. Second, regarding the debate surrounding the CRA, we find mixed results. The vast majority of institutions responding to the CRA reported that they were able to do so profitably. On the other hand, we also find that a significant minority of institutions incurred losses conducting some of their marginal CRA-related lending activities. This supports the view that, despite the apparent increases in credit flows, the CRA has not accomplished its goals without cost. Finally, quantitative evidence suggests that marginal CRA-related lending activity tended to be small measured either by lending volumes and impact on profitability.

The next section provides an overview of the CRA, including a discussion of the regulations that implement it. Following this, we outline the essential elements of the debate regarding the need for the CRA and identify the key analytical insights that drive our empirical approach. We then describe the data used for the analysis and the analytical tests for evidence regarding the necessity and efficiency of the CRA. The next sections present the results of these tests, assessments of their robustness, and a consideration of them in light of theory. We conclude by noting limitations of our research and presenting a summary discussion.

## **BACKGROUND ON THE CRA**

The CRA calls upon the federal banking supervisory agencies to use their authority to encourage each banking institution to help meet local credit needs in a manner consistent with safe and sound operation, by (1) assessing the institution's record of meeting the credit needs of its entire community, including low- and moderate-income

neighborhoods, and (2) considering the institution's CRA performance when assessing an application for a charter, deposit insurance, branch or other deposit facility, office relocation, or merger or acquisition.<sup>3</sup>

The Congress did not intend for the CRA to result in government-imposed credit allocation. The expectation, rather, was that banking institutions would be proactive in seeking out and serving viable lending opportunities in all sections of their communities. At the same time, it was expected that lending activities would be undertaken in a manner consistent with the safe and sound operation of banking institutions.<sup>4</sup> The regulations that implement the CRA reflect these goals. They provide for flexibility and direct that the CRA performance of banking institutions be evaluated in the context of the specific circumstances faced by each institution.

Implementation and enforcement of the CRA has evolved through a series of regulatory and legislative actions. Most significantly, the banking agencies issued joint regulations in April 1995 to revise the CRA evaluation process and make it more objective and performance-oriented. The 1995 regulations provide distinct performance evaluation tests for three categories of banking institutions--large retail, small retail, and wholesale or limited-purpose institutions.<sup>5</sup> To promote consistency of assessments, the statute and implementing regulations establish a uniform set of ratings criteria and 4 ratings categories: “Outstanding,” “Satisfactory,” “Needs to improve,” and “Substantial

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<sup>3</sup>The federal banking supervisory agencies are the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision.

<sup>4</sup>The CRA does not cover credit unions and other types of financial institutions. For a more expansive overview of the history of the CRA and of the issues associated with it, see Garwood and Smith (1993).

<sup>5</sup>While large retail and small retail institutions are evaluated primarily based on their performance in their assessment areas, wholesale and limited purpose institutions may be evaluated based on their performance nationwide, so long as they have adequately addressed the needs of their assessment areas. Each institution may also choose, as an alternative, to be evaluated under a “strategic plan” option in which the institution identifies and seeks to meet measurable objectives. See Federal Reserve press release (1995).

noncompliance.” The significant regulatory dividing line is between “Satisfactory” and “Needs to Improve,” as regulatory sanctions are imposed on institutions receiving the lowest two ratings. Nearly all banking institutions currently receive a rating of “Satisfactory” or better.

For large retail banking institutions, the regulations establish three performance tests—lending, investment, and service.<sup>6</sup> The regulations do not establish specific lending, investment, or service thresholds for obtaining a particular CRA performance rating. The lending test involves the measurement of lending activity for a variety of loan types, including home mortgage, small business and small farm, and community development loans.<sup>7</sup> Among the assessment criteria are the geographic distribution of lending, the distribution of lending across different borrower income groups, the extent of community development lending, and the use of innovative or flexible lending practices to address the credit needs of low- or moderate-income individuals or areas. The investment test considers a banking institution's qualified investments that benefit the institution's assessment area or a broader statewide or regional area that includes its assessment area. The service test considers the availability of an institution's system for delivering retail banking services and judges the extent of its community development services and their

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<sup>6</sup>Under the regulation, a “large” banking institution is generally defined to be an independent institution with assets of \$250 million or more or an institution of any size if owned by a banking institution holding company with assets of \$1 billion or more. The CRA regulations include additional provisions not discussed in the text. For example, smaller banking institutions have a more streamlined evaluation process. For a more complete discussion of these provisions, see Board of Governors (2000).

<sup>7</sup>For the reporting of business loans, the maximum loan size reported is \$1 million; for the reporting of farm loans, the maximum loan size reported is \$500,000. The regulation defines a community development loan as any loan whose primary purpose is community development and includes such loans as those for affordable housing, multifamily residential housing for low- and moderate- income households and other loans that promote economic development by financing small businesses or stabilizing low- or moderate-income areas.

degree of innovativeness and responsiveness.<sup>8</sup> Under this scheme, lending is more heavily weighted than investments or services, so that an institution may not receive a “Satisfactory” or “Outstanding” rating unless it is rated at least as “Satisfactory” on lending.<sup>9</sup>

## **THE ECONOMICS UNDERLYING THE CRA DEBATE**

The current debate about the CRA centers on whether the market would serve all creditworthy borrowers absent the CRA, which is essentially a debate about whether lending markets are perfectly competitive and involve full information. Consider a very simple market with a single loan product and many interchangeable lenders, each with the same cost structure. If the market is perfectly competitive and all information is known, all lenders are price takers and the equilibrium is such that the price of each loan equals the marginal cost associated with extending the loan. The equilibrium price is  $p^*$  and the amount of lending is  $q^*$  (figure 1). This is an unconstrained, full information equilibrium. In this market, every creditworthy borrower gets a loan from the lender that can best provide the loan.

A second possibility is that the market does not operate at the unconstrained full-information equilibrium, in which case some creditworthy borrowers would not receive credit. This could theoretically arise for a number of reasons. For example, the market may not be perfectly competitive. That is, some firms in the market could have market

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<sup>8</sup>For the investment test, a qualified investment is a lawful investment, deposit, membership share, or grant that has community development as its primary purpose. For the service test, among the assessment criteria are the geographic distribution of an institution's branches and the availability and effectiveness of alternative systems for delivering retail banking services, such as automated teller machines, in low- and moderate-income areas and to low- and moderate-income persons.

<sup>9</sup>A large banking institution's performance under the three performance tests is evaluated by examiners in the context of information about the institution and its community, competitors, and peers.

power and be price setters, perhaps due to regulatory restrictions on entry. Consider the extreme case of a monopoly lender. Monopolists face downward sloping demand curves and marginal revenue is below demand at all points. In equilibrium, the monopolist chooses  $q_m$  by setting marginal revenue equal to its marginal cost and then sets the price  $p_m$  according to the price at  $q_m$  on the demand curve (figure 2). Note that  $q_m$  is less than  $q^*$  and  $p_m$  is greater than  $p^*$ . In this case, some creditworthy credit seekers are not served.

Alternatively, the market might not feature full information. In this regard, lenders could lack important information on the credit quality of borrowers or could find obtaining information for borrowers from certain groups or areas particularly costly. Previous research has shown that either condition can lead to credit rationing, in which borrowers who would be viewed as creditworthy in a full information environment do not receive credit [Gruben, Neuberger, and Schmidt, 1990; Lang and Nakamura, 1993; Stiglitz and Weiss, 1981]. Essentially, the information imperfection results in a marginal cost curve for the lender that is higher than in a full-information environment (figure 3). As in the market power case, the equilibrium  $q_i$  is less than  $q^*$  and the equilibrium  $p_i$  exceeds  $p^*$ . It is important to emphasize that in equilibrium in this scenario, as in the perfectly competitive world, all lenders are price takers and that price equals marginal cost for the marginal loan for all lenders.

Moreover, the market might feature behavioral constraints but still operate competitively. For example, until relatively recently, regulatory restrictions on branching and the ability of banks to operate across state lines may have inhibited institutions from

reaching an efficient scale.<sup>10</sup> As in the informational scenario, the constraints cause the lender's marginal cost curve to shift up relative to the unconstrained marginal cost curve and leads to the same outcome as in the imperfect information scenario: in equilibrium, lending is reduced and price is increased.

Finally, discrimination may also lead to an equilibrium in which creditworthy borrowers do not receive credit. For example, if all creditors discriminate against a particular group in will result in a reduction of credit to that group even if the market is fully competitive.<sup>11</sup>

Critics of the CRA argue that lending markets are essentially perfectly competitive with full information. In this view, if the CRA forces banks to extend additional loans, they will do so at a loss since the marginal cost associated with these loans exceeds the prevailing market price. In figure 4 this is represented as a move from  $q^*$  to  $\bar{q}$ . It is clear that lenders lose money on all of these additional loans.

In practice, this could occur in several ways. As one example, consider a market where one lender does most of the lower-income lending because of economies of scale and specialization. CRA incentives might cause the non-specialist lenders to expand their CRA lending by "poaching" loans from the specialty lender which, if the non-specialist lenders have higher costs, might lead them to incur losses.

Proponents of the CRA allege that the market is more accurately described in non-perfectly competitive terms. In both the market power and market imperfection cases, some creditworthy borrowers do not receive credit; the market has some credit-rationing.

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<sup>10</sup>This case is similar to the market power scenario, except that lenders are unable to expropriate the rents that accrue as a result of the market constraints.

<sup>11</sup>For more information on discrimination and its effects on credit markets see Phelps (1972) and Becker (71).

In this view, the CRA induces an increase in lending such that the market equilibrium moves from  $q_m$  or  $q_i$  towards the unconstrained full-information equilibrium quantity  $q^*$  (figure 5 shows the market power case). In the new equilibrium, creditworthy borrowers previously not served receive loans. The effect on the market price depends on whether there is market power, in which case the price will have declined, or whether there is rationing, in which case the price effect is indeterminate. Furthermore, the additional loans extended due to the CRA will not be money losers, as the market-level marginal revenue (represented by the demand curve) always exceeds marginal costs over  $q^*$  to  $\bar{q}$ .

In both views, the CRA-related loans will be less profitable than other loans (i.e., marginal revenue minus marginal cost will be smaller). However, the two cases have different implications for the absolute profitability of the bank's marginally-added CRA-related lending. In the unconstrained, full-information market, the additional lending—if any—should lose money; in a constrained or imperfect information market, there should be additional lending opportunities that would be profitable (unless the increased lending goes beyond  $q^*$ ). It is these differing implications which serve as the foundation of the current research.

For ease of exposition, the forgoing discussion has been couched in the context of the CRA as essentially imposing a quota system. Such a characterization is not accurate however. As noted, the CRA regulations lay out a performance evaluation process that does not include explicit lending targets. Nonetheless, the regulations established in 1995 focus on quantitative measures of performance to a much greater extent than the regulation in force before that time. Consequently, some have argued that this new regulatory emphasis has acted as an incentive for institutions to target levels of lending in

the hope of obtaining a good CRA performance evaluation.<sup>12</sup> If true, the CRA under the new regulations might produce behaviors similar to those that would be observed if an explicit quota had been established.

We should also point out that both of these perspectives implicitly assume that all institutions take some action in response to the CRA. This need not be the case, however, as some institutions might not find it necessary to respond to the CRA. These institutions may find it possible to achieve at least a “Satisfactory” CRA performance rating through their normal course of business. Moreover, for those institutions that do take some action in response to the CRA, the degree of action may vary according to their particular situation.

In the analysis that follows, we search for evidence that bears on the merits of the views of how the CRA impacts the market. In particular, we try to determine whether there is evidence that banking institutions that extended marginal loans, here defined as loans extended solely as a consequence of the CRA, and what return they earned on these activities.

## **DATA**

The data used for the empirical analysis are drawn from the “Survey of the Performance and Profitability of CRA-Related Lending” recently conducted by the Federal Reserve Board. The survey was undertaken in response to a congressional directive in November 1999 to conduct a comprehensive study of the performance and

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<sup>12</sup>It is also argued that some banking institutions, in order to avoid adverse publicity or possible delays in the processing of applications for mergers or acquisitions due to protests about CRA performance, have entered into agreements with community-based organizations to establish specific lending targets [Schwartz, 1998; Bostic and Robinson, 2002].

profitability of CRA-related lending.<sup>13</sup> To this end, a special survey of the largest banking institutions was conducted to collect information on their lending experiences. The survey was in two parts.

Part A focused on an institution's total lending and its CRA-related lending in the four major loan product areas in which CRA lending activity is tracked: one- to four-family home purchase and refinance lending, one- to four-family home improvement lending, small business lending, and community development lending. Consistent with the regulations that implement the CRA, the definition of CRA-related lending in the survey varied across product categories, but roughly corresponded to the group of loans given the most weight by regulators in evaluating institutions under the CRA performance tests.<sup>14</sup> All community development loans were defined as CRA-related. Respondents were asked to provide qualitative and quantitative profitability information for both overall and CRA-related lending (as appropriate) within each of the product categories. In addition, information was sought on various contextual items within each

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<sup>13</sup>Section 713 of the Gramm-Leach-Bliley Act of 1999 (P.L. No. 106-95). For more information about the survey and its findings, see the report prepared by the Board of Governors of the Federal Reserve System and submitted to the Congress in July 2000. The report and the survey questionnaire are available on the Federal Reserve Board's web site at [www.federalreserve.gov/boarddocs/surveys/CRAloansurvey](http://www.federalreserve.gov/boarddocs/surveys/CRAloansurvey). For more detailed information about the survey findings regarding CRA special lending programs in particular, see Avery, Bostic, and Canner (2000).

<sup>14</sup>For the two housing-related lending categories, a CRA-related loan was defined as any loan made *within* the banking institution's CRA assessment area to a low- or moderate-income borrower (regardless of neighborhood income) *or* in a low- or moderate-income neighborhood (regardless of borrower income). Low- and moderate-income neighborhoods and borrowers are defined in the following manner. A low-income neighborhood (typically a census tract), is one where the median family income of the neighborhood is less than 50 percent of the median family income for the broader area (such as a metropolitan statistical area or the nonmetropolitan portion of a state) as measured in the most recent decennial census. In a moderate-income neighborhood, the median family income is at least 50 percent and less than 80 percent of the median family income of the broader area. Borrower income categories follow the same groupings as those for neighborhoods but rely on the borrower's income relative to that of the concurrently measured median family income of the broader area (metropolitan statistical area or nonmetropolitan portion of the state).

CRA-related small business loans were defined as any small business loan (as defined in the CRA regulations) made *within* the banking institution's CRA assessment area to a firm with annual revenues of \$1 million or less (regardless of neighborhood income) *or* located in a low- and moderate-income neighborhood (regardless of firm size).

product area, such as loan origination and purchase volumes and portfolio composition, to more fully document each institution's lending activity. Respondents were also asked to provide balance sheet data, such as the dollar amount of outstanding loans, as of December 31, 1999, and profitability and other flow data, such as the dollar volume of loan originations, for calendar year 1999.

Part B gathered extensive information on the experiences lenders had in 1999 with their CRA special lending programs. Such programs included any housing-related, small business, consumer, or other programs that banking institutions established (or participated in) "specifically to enhance their CRA performance," even if the programs may have been established for other reasons as well.<sup>15</sup> One example of a CRA special lending program is an affordable mortgage program that features flexible underwriting standards.<sup>16</sup> Because special lending programs may have been established for reasons other than CRA, the survey asked respondents to provide information on the full range of reasons these programs were developed and the benefits they currently receive from them. The survey collected information on many other aspects of these programs, including their loan volume, the type of loans they involved, the populations they were intended to serve, the role of any third party involved in the program, program features offered by the participating institutions, and information on the performance and profitability of the loans extended under the program.

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<sup>15</sup>A program was considered to be CRA-related only if one of the program's documented purposes was to enhance the institution's CRA performance. Traditional government-backed lending programs, such as those offered by the Federal Housing Administration (FHA), the Department of Veterans Affairs (VA), or Small Business Administration (SBA), were not considered to be CRA special lending programs for the purposes of the survey unless an institution provided a special enhancement, such as credit counseling, a homebuyer education program, or a waiver or reduction of loan fees.

<sup>16</sup>For more information on affordable mortgage programs, see Avery, et al. (1996).

The sample of institutions asked to participate in the survey consisted of roughly the 500 largest retail banking institutions, including 400 commercial banks and 100 savings institutions (savings and loan associations and savings banks).<sup>17</sup> Participation by banking institutions in the survey was voluntary. In total, responses were received from 114 commercial banks and 29 savings associations (table 1, top panel). Respondent institutions accounted for about one-half of the assets of all U.S. banking institutions as of the end of 1999, and between 39 percent and 53 percent of all the CRA-related lending for a given product in that year (bottom panel).

The 143 respondents offered or participated in 622 CRA special lending programs in 1999 (table 2). About 72 percent of the responding institutions offered at least one CRA special lending program; on average the institutions with programs offered about six programs. Part B of the survey sought detailed information on only the 5 largest of a banking institution's CRA special lending programs (measured by lending dollar volume in 1999), a restriction that produced detailed information for 341 programs.<sup>18</sup> These 341 programs are estimated to account for about 97 percent of the lending that respondent institutions extended under special lending programs in 1999. Nearly three-quarters of the CRA special lending programs identified by survey respondents were focused on home purchase and refinance lending. The remaining programs focused on a wide range

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<sup>17</sup>The survey was conducted by mail, with telephone follow-up used to clarify responses. The sample was limited to the largest banking institutions, because they accounted for the vast majority (roughly 70 percent) of all the CRA-related lending nationwide in 1999. Many large financial services organizations, such as bank or thrift holding companies, handle some or all of their loan originations and/or servicing, particularly for home mortgages, through separate entities which may be subsidiaries of the holding company and separate from the organization's banking institutions. CRA evaluations, however, are done at the banking institution level not at the organizational level. Consequently, the survey sample consisted of individual banking institutions, some of which could be part of the same organization.

<sup>18</sup>The survey also collected information on the lending activity and on the performance and profitability of all of an institution's CRA special lending programs combined.

of other lending activities, including small business and various types of consumer lending.

## **SETTING UP THE TEST**

Because the theories underlying the debate about the CRA highlight the activities of banking institutions, the ideal test to settle the debate would focus on how these institutions respond to the CRA. Such a test would involve identifying those loans (if any) extended as a result of the CRA (that is, marginal loans) and then observing their profitability. A finding that institutions extended a significant volume of marginal loans profitably would support those who argue that the CRA is necessary and that market failures exist. A finding that some institutions lose money on marginal lending would support the view of CRA critics that the implementation of the CRA has unintended consequences and inefficiencies.

Unfortunately, the survey did not ask institutions to explicitly identify those loans made only as a result of the CRA. Thus, although the survey provides a wealth of information about the profitability of CRA-related lending and CRA special lending programs, no single survey response can be used to conduct this ideal test. The survey does, however, offer an opportunity to develop a reasonable proxy for marginal CRA-related lending. Because the survey defined CRA special lending programs as those programs established to enhance CRA performance, it may be reasonable to view loans originated under them as loans made in response to the CRA which would not otherwise be made. A review of the reasons cited for program establishment or current benefits institutions receive from them, however, suggests that the use of all programs as a proxy

for marginal lending activities might be too broad in scope. Institutions often cited multiple reasons for establishing CRA special mortgage programs or multiple benefits from them, some unrelated to the law. In addition, for some programs, institutions cited no direct CRA-related reason for program establishment or CRA-related benefit, which raises questions about the extent to which these activities should be viewed as arising due to the CRA. Inclusion of these programs could potentially bias results and generate misleading implications.

To address this issue, we refined our proxy by restricting marginal lending to include *only* those CRA special lending programs established or needed to achieve a “Satisfactory” CRA performance evaluation (“SAT” programs).<sup>19</sup> Such programs represent what a banking institution reported it needed to meet the minimum CRA requirements or minimize the potential for CRA considerations to adversely affect the institution’s strategic decisions (mergers) or public image.<sup>20</sup> Any program established in part to obtain a “Satisfactory” rating, or currently needed to achieve such a rating, was included in the group, regardless of whether other reasons were cited. It is important to recognize that this proxy is quite restrictive, as it omits loans originated outside of a CRA special lending program that may also have been extended as a result of the CRA.

Table 3 presents information showing the distribution of institutions according to the CRA special lending programs they operate, where the programs are grouped according

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<sup>19</sup>All CRA special lending programs that were less than 2 years old were omitted from the analysis. These programs were excluded out of a concern that these programs were still establishing their long-run performance profile.

<sup>20</sup>Perhaps a more appropriate proxy would have been to include those programs for which CRA-related reasons were the only reasons cited for program establishment. However, this approach proved to be too restrictive, as only 1 institution operated such a program.

to the reason they were established and benefits currently received from them.<sup>21</sup> To provide an indication of the restrictiveness of our proxy for marginal CRA-related lending, SAT programs are distinguished from those programs established in order to receive an “Outstanding” CRA performance rating, to minimize the likelihood of receiving a CRA-related protest, or to meet some other objective. For this exercise, community development lending is treated as a special lending program.<sup>22</sup>

Survey responses show significant differences across loan products. CRA special lending programs for community development and home purchase and refinance lending were both relatively common. The vast majority (84.5 percent) of institutions had a community development program and a majority (54.9 percent) of institutions offered home purchase and refinance special lending programs. Moreover, for these two loan products, most institutions that offered CRA special lending programs offered at least one program that would qualify as marginal CRA-related lending. By contrast, only about 10 percent of institutions in the sample operated home improvement and small

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<sup>21</sup>The data in this table and all subsequent tables were weighted to account for a differential survey response rate for institutions of different sizes. More than 80 percent (27 out of 33 sampled institutions in this asset category) of the surveyed banking institutions with assets of \$30 billion or more as of December 31, 1999 returned a survey. In contrast, only about 19 percent (72 out of 363) of the surveyed banking institutions with assets of less than \$5 billion responded. Institutions with assets between \$5 billion and \$30 billion had a response rate of about 42 percent (44 out of 104). A simple proportional weight based on the response rate for each size class (i.e. 33/27 for the largest institutions, 104/44 for the next largest class, and 363/72 for the smallest size class in the survey) was used to “correct” for the differential response rates. The use of more complicated model-based weights (taking into account, for example, profitability, CRA rating, holding company status, and the size and scope of lending) was also explored, but this had little impact on results, as size was the dominant determinant of response rate. Under the assumption that institution size is the *only* determinant of response, the weighted responses in the table represent an unbiased estimate of how responses would have been distributed had all 500 surveyed institutions provided a response.

<sup>22</sup>Survey respondents were instructed to treat community development lending as a distinct line of business. However, because community development lending often is similar in character to CRA special lending programs, respondents were not asked to provide information on community development special lending programs. Despite this, similar questions were asked about community development lending as a whole as were asked about special lending programs. Thus it was possible to determine which community development lending programs were SAT.

business special loan programs, with an even smaller percentage having programs that met our definition of marginal CRA-related lending.

Our test procedure first classifies institutions according to whether they extended marginal loans. Institutions are then classified for each individual loan product and then at a composite level, which indicates whether the institution extended marginal loans in any product category. Once institutions are classified in this manner, we examine the experiences of the institutions regarding the profitability of their marginal lending and use this experience as a basis for estimating the percentage of the 500 sampled institutions that had profitable and/or unprofitable marginal lending activities.

An important issue in this exercise is the measurement of profitability. Ideally, profitable loans would be defined as those for which an institution receives positive economic profits, where revenues exceed the opportunity cost for all factors of production, including labor and permanent and working capital (sometimes called the hurdle rate). For the survey, respondents were asked to compute a profitability measure based on “all revenues and costs associated with origination, servicing, pricing, delinquency, default and losses, prepayment, loan sales and purchases, and related customer account business.” This characterization was intended to represent “economic” (rather than accounting) profits, although the survey did not state this explicitly. Respondents were asked to provide a quantitative assessment of profitability using this definition expressed as a “return on equity” or ROE. Under this definition, a positive ROE would imply an economically profitable program.

Discussions with banking institutions prior to implementation of the survey suggested that some banking institutions might have difficulty calculating an ROE for individual

loan programs. Consequently, the survey also collected detailed qualitative information on profitability as well. Banking institutions were asked if each individual CRA special program was “profitable,” “marginally profitable,” “break even,” “marginally unprofitable,” or “unprofitable.” The same question was asked for overall CRA-related and total lending for each loan product area.

Unfortunately, in reviewing the responses to the survey, it appears that not all respondents reported ROE using the concept of economic profit. For example, some respondents characterized an ROE well above zero as “break even.” For these respondents, the reported ROE presumably does not reflect the costs of capital. Telephone conversations with respondents confirmed that there was variation in the basis used for calculating ROE. More generally, it is difficult to verify that all of the many components that are considered in calculating profitability were used by all respondents.

For this reason, we use quantitative assessments of profitability in this paper in only a very limited way, relying instead on qualitative responses. An assessment of “break even” or better was taken as an indication that a program was economically profitable. It should be borne in mind, though, that the confusion about the inclusion of capital costs could also have affected the qualitative profitability responses. Some programs reported as “break even” may not earn sufficient amounts to cover the opportunity costs of capital even though they do not incur accounting losses.<sup>23</sup>

The profitability distribution of groups of CRA special lending programs by loan product area is shown in Table 4. The data show that a significant majority of programs

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<sup>23</sup>The decision to rely on qualitative profitability responses was further supported by the relatively small percentage of respondents that could provide quantitative assessments. For example, respondents provided a quantitative assessment of program profitability for only 69 of the 341 special lending programs reported in the survey. However, qualitative assessments were provided for 275 programs (81 percent of the programs).

involving marginal loans were reported to be at least marginally profitable. There does not appear to be much variability in the distribution of program profitability across the different program groupings. For example, among home purchase and refinance special lending programs providing profitability data, 19.6 percent of SAT programs and 25.9 percent of all programs were reported to be marginally unprofitable or unprofitable. The numbers for small business loan programs are less reliable due to the small number of such programs. Overall, the data show that programs involving marginal CRA-related loans do not perform much differently than programs that extend loans not viewed as marginal under our definition.

## RESULTS OF THE TEST

Table 5 shows the distribution of *institutions* according to whether they had marginal lending activities and, if so, whether any of those activities were profitable or experienced losses.<sup>24</sup> The table includes summary results for each loan product area, as well as an overall composite assessment that considers an institution's combined experience across all loan products. If *any* CRA special lending program in a loan

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<sup>24</sup> In order to present results at an institution level, it was necessary to deal with the problem of missing data. Approximately 35 percent of the home purchase and 37 percent of the community development special lending programs meeting our definition of marginal were missing quantitative profitability data. Profitability data for those programs where the institution did not provide it was imputed as follows. Programs were sorted into groups based on product area and the size of the institution (above \$5 billion in assets or not). For each of these eight groups the distribution of responses across the five possible quantitative profitability assessments (unprofitable, marginally unprofitable, break even, marginally profitable, and profitable) for each SAT special lending program with profitability data was computed. This distribution was used to randomly assign a profitability response to each program with missing data. This process was done once for each program. Thus observations with missing data are assigned the same profitability value in each table in which they appear.

These calculations assume that profitability data for programs with missing data are distributed similarly to that of similarly situated programs. However, the failure to report may be more complex than implied by the simple imputation, as institutions that experienced losses may be more likely to track such experiences and thus be better able to provide profitability information. If this is true, then our procedure will overestimate the proportion of institutions that experienced at least some loss in their marginal lending activities.

product category was reported to be at least “break even,” that institution was placed in the profitable category; if any program in a category was reported to be “marginally unprofitable” or “unprofitable,” the institution was placed in the loss category. The profitability and loss exercises were conducted separately, acknowledging that institutions could have mixed experiences because they operate in different product areas and different local markets.

The data indicate that most institutions explicitly responded to their CRA obligations, as 60 percent reported some activity taken out of a belief that the actions were needed to obtain a “Satisfactory” CRA performance evaluation. Half were engaged in community development activities with this character, and about 30 percent had such home mortgage purchase and refinance activities. A small percentage of institutions established home improvement or small business lending programs to meet their CRA obligations.

Of the institutions that did respond to the CRA, by our estimates, 92.5 percent of the 500 institutions in our sample frame would have reported at least one profitable (break even or better) SAT special lending program (derived from table 5). There is relatively little variation across product areas in the proportion of institutions reporting that at least some of their marginal CRA-related lending activities were profitable.

Over all the product areas, the profitable marginal CRA-related lending activities of these institutions are estimated to be about \$6.5 billion (\$23.5 million per institution) in 1999 loan originations, a figure which is approximately 0.9 percent of the aggregate 1999 home purchase and refinance, home improvement, small business, and community development loans extended by the 500 largest lending institutions sampled in the survey. We estimate that institutions conducting profitable marginal CRA-related

lending earned on average \$347,000 above their hurdle rate on this lending activity during 1999 (10 basis points when expressed as ROE).<sup>25</sup> These results for home purchase and refinance and community development lending provide clear evidence suggesting that the CRA has been helpful in alleviating market failures.

Regarding losses, the bottom panel of table 5 shows that 13.6 percent of institutions reported some loss associated with marginal lending in at least one product area as broadly considered here. This is primarily driven by the experiences banking institutions had in home mortgage lending, particularly in their home purchase and refinance lending activities. Nine percent of institutions reported at least some loss associated with their marginal home purchase and refinance lending activities. By contrast, for small business and community development lending, about one-half as many institutions (less than 5 percent) reported a loss associated with marginal lending as defined here. Despite this, the institutions that reported a loss in these areas appear to be different from those that reported a loss in their home purchase and refinance lending. Indeed, of the institutions that reported a loss in their marginal small business, community development, or home

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<sup>25</sup>Quantifying profitability is not straightforward because, as noted earlier, most survey respondents did not provide quantitative estimates of the profitability of their CRA-related lending and special lending program activities. We therefore approximate ROE by assuming that the experiences of those institutions that did report quantitative data reflect those of the institutions with similar qualitative responses that did not. The methodology used to impute quantitative measures of profitability was similar to that used to impute qualitative data. CRA special lending programs were placed in cells based on the type of program, size of institution, and qualitative measure of profitability. Those observations with missing data were assigned the mean ROE of those in the cell with reported quantitative data. As discussed earlier, a few institutions did not fully account for the costs of capital in their ROE calculations. For example, an institution might report an ROE of 10 percent as “marginally unprofitable” because it fell below their “hurdle rate.” When it was clear that an institution had done this, reported ROEs were adjusted such that a 0 return represented “break even.” When no other information was available, a hurdle rate of 13 percent was assumed in making this adjustment. This was chosen because it reflects a rough estimate of the long-run return on equity and is a rate used in the regulation of public utilities. Overall, ROE was imputed for about 2/3 of the observations.

In order to compute a dollar loss, it is necessary to determine how much equity is associated with each loss. To do this, we assume that the share of an institution’s total equity for a loan product area equals share of the institution’s total assets in that area, measured by the outstanding balance as of December 31, 1999.

improvement lending, more than half (56 percent) did not report a loss associated with their marginal home purchase and refinance lending (not shown). Thus, there is an important product-level cumulative effect, as the overall number of institutions reporting at least some loss is greater than the number reporting a loss in any individual category.

Using these assumptions, we estimate that the 13.6 percent of the largest retail banking institutions that reported some loss associated with their marginal lending activity in 1999 would have had an average annual institutional loss of about \$160,000 on an estimated average SAT special lending program origination volume of \$12.1 million (\$820 million in the aggregate). Most of this loss (87 percent) is estimated to stem from home purchase and refinance lending. When expressed as a share of its overall equity, this implies a reduction in their overall bank return on equity of only 2 basis points (.02 percentage points) for these institutions. As a basis for comparison, the typical large retail bank in 1999 had an ROE of 21.8 percent.

We note that all of these calculations assume that profitability data for institutions or programs with missing data are distributed similarly to that of similarly situated programs or institutions. However, the failure to report may be more complex than implied by the simple imputation, as institutions that experienced losses may be more likely to track such experiences and thus be better able to provide profitability information.

## **ROBUSTNESS OF THE RESULTS**

Given these results, an important consideration for any empirical analysis is the extent to which the results depend on the particular approach used. The results in section

IV are based on particular definitions of marginal lending and economic profitability. In discussing our methodology, we noted reasons why both definitions that we chose might be problematic. In this section, we try to address these concerns and determine the extent to which our results are sensitive to the use of alternative definitions.

**Are the results sensitive to the definition of “marginal”?**

In generating our baseline results, we defined marginal lending as CRA special lending programs that are (or were) needed to obtain a “Satisfactory” CRA performance rating. As noted, this definition may be too restrictive if institutions extended loans in response to the CRA but did not originate them under a special lending program. Such omissions could mean that our baseline estimates understate both the evidence in support of the existence of market failures and the evidence supporting the notion that the CRA has not been as efficient as possible. Accordingly, this section examines the evidence using a more expansive definition of marginal lending that incorporates this consideration.

While the preceding analysis was limited to institutions that had SAT special lending programs, other institutions may have responded to the CRA without establishing such programs. In expanding our notion of “marginal” lending, we seek to incorporate these other institutions into the analytical framework. To do this, on a product-by-product basis, we assess whether these additional institutions took explicit steps to promote CRA-related lending, which we label “proactivity.” The focus on proactivity is motivated by the proposition that institutions that took explicit steps to promote CRA-related lending are those most likely to have actually made additional loans as a consequence of the CRA.

Aside from identifying an institution's CRA special lending programs, the survey offers several other possibilities for identifying proactive behavior. For each loan product area, an institution was considered to be proactive if it either (1) had a distinct unit or department that specialized in CRA-related lending; (2) provided extra financial incentives to staff to promote CRA-related lending; or (3) had extra waivers of fees or interest rate discounts for CRA-related loans. The inclusion of these latter three proactivity criteria raises the proportion of institutions deemed to be proactive in at least one loan product area to more than 75 percent.<sup>26</sup>

For this robustness check, the additional proactive criteria were considered only if the institution did not have a SAT special lending program in the product area. Further, to be consistent with the "Satisfactory" definition of proactivity implicit in our preferred marginal definition, institutions were considered to be proactive only if they received a "Satisfactory" CRA performance rating.<sup>27</sup> For the tables, in calculating gains and losses for institutions judged to be proactive using the additional criteria, the profitability of their overall CRA-related lending was treated as a representation of their marginal lending experience. Otherwise an institution's SAT special lending programs were used as the representation of marginal loans.

Use of this broader definition notably expands the percentage of institutions deemed to have marginal CRA-related lending that was break even or better for the home

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<sup>26</sup>There is variation across products in the extent to which institutions were proactive. For example, using our definition, 75 percent of institutions were proactive in their home purchase and refinance lending while fewer than 25 percent were proactive in the other loan product areas. Use of this definition over the preferred narrower one had no impact on the treatment of community development lending, since, by definition, all community development lending is treated as being part of a special lending program.

<sup>27</sup>This definition also included the overall CRA-related lending for product areas for institutions which did not have a special lending program needed to obtain a "Satisfactory" rating in the product area, but had more than 5 programs, and thus could have had an applicable program which was not reported. Institutions meeting these criteria were included only if they had a "Satisfactory" CRA performance rating.

mortgage and small business product areas (table 6 compared with table 5).<sup>28</sup> However, because community development lending had the highest incidence of profitable marginal lending in the analysis with our base definition, and its treatment is unchanged, overall there is a moderate increase in the percentage of institutions reporting at least one product area with profitable marginal lending. Use of the broader definition of marginal lending expands the volume of profitable marginal lending from \$6.5 billion of 1999 originations estimated under the narrower definition to \$7.5 billion.<sup>29</sup> Total marginal profits of such institutions are estimated to expand from \$96 million to \$340 million.

Broadening the definition of marginal lending has a modest impact on the assessment of losses. Overall, the percentage of institutions reporting at least one product area with unprofitable marginal lending increases from 13.6 to 16.3 (table 6 compared to table 5). The estimated dollar of loss per-institution losing money is \$520,000 implying a total annual dollar loss of \$42.3 million for the 500 largest retail banking institutions in the U.S. resulting from marginal CRA lending under this definition. The total volume of 1999 lending in losing programs increases to \$1.3 billion from \$820 million if the broader definition is used.

### **Are the results sensitive to the definition of economically profitable?**

To this point, we have used “break even” as the threshold value for identifying those marginal activities that were economically profitable. However, we have documented

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<sup>28</sup>Profitability data for institutions that did not provide such information for overall CRA-related lending in a product area were imputed in manner similar to that used for SAT programs. Institutions were grouped into four categories for each product area: those with at least one SAT program; those with a program but not one which was SAT; those without a special lending program in the area, but who were proactive; and those without a program who were not proactive. Within category, institutions were further divided into large and smaller institutions. For each of these eight groups the distribution of responses across the five possible profitability assessments for those institutions providing data for their overall CRA-related lending was computed. This distribution was used to randomly assign a profitability response to each observation with missing data. This process was done once for each institution that was missing data.

<sup>29</sup> It was assumed that institutions without special lending programs had the same ratio of marginal to total CRA lending as those institutions with special lending programs.

that a number of institutions did not consider capital costs in reporting the quantitative profitability of their lending activities and it is possible that similar methods were used for some of the qualitative profitability responses. If true, the lending that some institutions reported as break even might actually be unprofitable, which would tend to bias the results in favor of finding evidence consistent with the existence of market failures.

To guard against this possibility, we reconstructed the top panel of table 5 using alternative definitions of economic profitability that use different qualitative thresholds. We explored the effects of two narrower alternative definitions. The first definition required that at least one of an institution's marginal lending activities be reported as either marginally profitable or profitable if the institution was to be included in the economically profitable category. The second variant was even more restrictive, as institutions were included in the economically profitable category only if at least one of their marginal lending activities was reported to be profitable. For this exercise, we used our baseline SAT definition of marginal lending.

Results are presented in table 7. Removing "break even" from the definition of marginal lending activities has relatively little impact on the percentage of institutions reported as having profitable programs for both the composite and for community development lending. However, it does impact home purchase and refinance lending. Dropping "break even" reduces the estimate of the percentage for home purchase and refinance lending by 6.7 percentage points, from 26.3 percent (table 5) to 19.6 percent.

Going further and removing "marginally profitable" from consideration has a larger effect, as the percentage of institutions that would be considered as having profitable

programs falls in half from the levels observed when “break even” is excluded. It should be pointed out, though, that even using the narrowest definition of profitable lending, 29.8 percent of institutions reported at least one profitable program at the composite level, 9.4 percent had a profitable home purchase and refinance lending program, and 22.1 percent had a profitable community development lending program.

### **Reasons for program establishment**

The framework established above to examine the impact of the CRA relied on using the reasons that institutions established CRA special lending programs as a basis for determining whether a program represented marginal lending. While our approach focused solely on reasons pertaining to the CRA, institutions reported multiple reasons for program establishment in nearly all cases. If these other reasons influence the profitability of programs rather than the CRA-based reasons, then our approach might incorrectly view the profitability of a program as a signal of the impact of the CRA rather than a signal of the impact of these other motivations.

To evaluate whether this is an important concern, we conducted a program-level analysis in which program profitability was regressed on the reasons for program establishment, controlling for other program and banking institution characteristics. This analysis was limited to home purchase and refinance CRA special lending programs because this was the only group of programs that had sufficient numbers to conduct a statistical analysis. The results (not shown) suggest that there is little relationship between whether a program was established for a specific reason and program profitability. The data indicate that the profitability of a program is essentially unrelated to the reason a program was established.

### **Additional robustness issues**

The analysis may also suffer from mismeasurement problems that do not have obvious solutions. For example, the gains associated with marginal lending may have been understated for a number of reasons. First, some programs reported to be unprofitable might be relatively new and not have had an opportunity to generate sufficient loan volumes to cover start-up costs. Second, a small number of institutions that reported losses for their marginal lending activities in a loan product area also reported losses for their overall lending activity in that area, implying that these losses are likely not due to the CRA. Third, because nearly all programs were established for a multitude of reasons and very few were established *only* for CRA-related reasons, it might not be appropriate to attribute all the losses associated with a program to the CRA.

Similarly, the losses that an institution experienced in its marginal lending activities might have been understated for a number of reasons. First, many of the lending activities that we define as marginal, particularly CRA special lending programs, often include the participation of third parties that may shield the banking institution from exposure to losses (although it may be that from the standpoint of evaluating the marginal impact of the CRA alone, losses incurred by third parties are irrelevant). Second, as discussed previously, the framework for identifying marginal loans is imperfect, which could lead to the inappropriate inclusion of profitable non-marginal loans. Third, institutions were asked to report information on their experiences with lending in 1999, a year marked by strong economic growth and relatively few credit problems.

## **ARE RESULTS CONSISTENT WITH THEORY?**

As a further exploration to refine our understanding of the extent to which market imperfections might be shaping institutional experiences, we also test predictions that emerge from our theoretical framework as to *which* institutions should have incurred losses. This test provides an indication as to whether the sorting of institutions into those that incurred losses and those that did not occurs in a fashion consistent with the theoretical structure outlined in section II.

What does theory predict about which institutions would be likely to experience economic gains or losses? One argument focused on market power. In this case, theory predicts that institutions that are price takers should be more likely to experience losses than those that are price setters. Price takers are likely to be institutions with small market shares and those that fail to achieve economies of scale. Such institutions are also likely to be smaller in size, although larger institutions can also have small market shares in a specific market or in a given product line. A second argument focused on more general market imperfections, such as imperfect information. Within a market with such an externality, theory suggests that there should not be a systematic relationship between institutional characteristics and experiencing economic gains or losses. However, one might observe such correlations in a national analysis if there is variation in the extent to which these externalities are at work across geographic locations.

There are other possible reasons why one might expect correlations between economic losses and gains and institutional characteristics. For example, those institutions operating in markets with relatively few potential borrowers that would qualify as CRA-related might be expected to have a more difficult time meeting CRA

objectives and thus might have to make a greater CRA-related effort. By this argument, institutions that operate in markets with relatively small proportions of lower-income households or neighborhoods should be more likely to have losses. In addition, institutions might *voluntarily* choose to respond more intensely to the CRA (and thus be more likely to incur losses). For example, institutions would be expected to have a greater response to the CRA if they are either active in the merger market or seeking “Outstanding” CRA performance ratings.

Table 8 shows the results of regressing experiencing losses from marginal CRA-related home purchase and refinance lending on institution characteristics, with regressors reflecting the factors cited above. These include dummy variables for the size of the institution, average market share, banking structure variables, the percentage of the market that is CRA-eligible, the institution’s most recent CRA performance evaluation, and the percentage the years from 1990-1999 that the institution was involved in a merger. The relationship is estimated using a logistic regression and the sample was restricted to consider those institutions that provided responses on profitability.

Results show little evidence of a consistent pattern. Middle-sized, not the smallest, institutions are most likely to incur losses associated with their marginal CRA-related lending. Market share has no impact on losses. Somewhat surprisingly, neither merger activity nor CRA performance evaluations appear to be related to the probability of experiencing a loss. These results provide little support for the market power explanation for the CRA’s effects. They are suggestive of a more general externality that affects all

institutions and might stem, for example, from information asymmetries or imperfections.<sup>30</sup>

## CONCLUSIONS

Evaluations of the efficacy of government programs or rules are often made difficult by a lack of data on their costs and benefits. Assessments of the CRA, in particular, have been hampered both by an inability to identify those loans extended exclusively as a consequence of the law and by a lack of data on the performance and profitability of such loans. A recent survey undertaken by the Federal Reserve Board, however, on the performance and profitability of CRA-related lending provides a unique opportunity to overcome these difficulties. Survey responses allow for both the plausible identification of those lending activities undertaken in response to the CRA, and an assessment of the profitability of these marginal lending activities. As a consequence, these data provide an unequalled opportunity to assess how the CRA affects the profitability of banking institutions and to quantify the scope of its impact on lending markets.

In this paper, we undertake this exercise and reach 3 main conclusions. First, the CRA has impacted the lending activities of a majority of institutions. Nearly 60 percent of respondents reported that they engaged in some activity that they would not have in the absence of the CRA. (Although it must be recognized that the fact that an institution would not have undertaken marginal lending without the CRA does not necessarily mean such lending would not have been undertaken by another institution absent the law.)

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<sup>30</sup>Although theory does not address the issue of which institutions would be most likely to respond to the law, we sought evidence of a consistent pattern as to which institutions reported marginal CRA-related home purchase and refinance and community development lending. Conducting a logistic regression analysis using the same regressors as used in table 8, we find no significant coefficients nor was the model significant at the 1 percent level in terms of overall fit.

Second, regarding the debate surrounding the CRA, we find mixed results. Over 90 percent of respondent institutions that engaged in marginal CRA-related lending activities undertook some such activity that did not incur a loss associated with this lending; three-quarters did not incur a loss for any of their marginal CRA-related activities. This evidence provides support to the view that the CRA continues to be useful in overcoming market imperfections that impede the flow of credit to certain market segments. On the other hand, we also find that a significant minority of institutions (slightly less than one quarter) incurred losses conducting their marginal CRA-related lending activities. This supports the view that, despite the apparent increases in credit flows, the CRA has not accomplished its goals without cost.

Finally, quantitative evidence suggests that, although a majority of institutions responded to the CRA, the nature of those responses has been small. We estimate that about \$7.3 billion in additional loans was generated in 1999 as the result of marginal CRA-related lending activities. This represents only about 5.6 percent of all the CRA-related lending originated in survey product categories by the 500 largest retail banking institutions in 1999 and about 1 percent of the total volume of such lending by those institutions for that year. The impact on profits is also small. The average additional profits generated by marginal CRA-related lending is only \$347,000 per institution. The average loss for those institutions incurring losses was only \$160,000 per institution, or about \$1000 per loan originated. These figures are orders of magnitude smaller than the average overall profit for the typical large retail banking institution, which in 1999 was \$203 million.

It is tempting to put these pieces together to derive a “net” profit for this analysis. For example, two-thirds of institutions that incurred a loss from their marginal lending activities also operated a marginal CRA-related program that did not incur a loss, which suggests that such an analysis would be possible. However, recall that the debate about the CRA is a debate about the competitive nature of individual markets. Consolidating the results of disparate marginal CRA-related lending programs that operate in different geographic and product markets would mask the variation in the competitiveness of these markets and ultimately reduce our understanding of the dynamics of the CRA and its impact on the marketplace. In fact, the extent to which the data survey respondents provided was aggregated prior to reporting already limits our ability to conduct such analyses.

Although we believe these results represent fairly accurate assessments of the direct costs of lending activities undertaken as a result of the CRA and the volume of this lending, this information is only part of what would be required to conduct a full benefit-cost analysis of the law. Information is only available on the experiences of the largest banking institutions. The experiences of smaller institutions, which account for most of the institutions covered by the CRA and about half of the CRA-related lending, may differ substantially. In addition, the analysis does not consider investment or service activities institutions undertake to meet their responsibilities under the law, nor does it consider all the costs banking institutions incur to comply with the law, including costs incurred by compliance officers and other administrative expenses. It also does not consider costs borne by other parties, such as regulators or those that provide support for CRA lending, such as local government entities. Perhaps more importantly, it does not

consider any of the benefits of CRA-related lending to consumers or the local community. Such benefits might include increased homeownership, increased access to goods and services through small businesses, and increased social cohesion through community development activities. A complete analysis would require putting all of these pieces together.

## REFERENCES

- Avery, R. B., R. W. Bostic, P. S. Calem and G. B. Canner (1996), "Credit Risk, Credit Scoring, and the Performance of Home Mortgages," *Federal Reserve Bulletin* 82, pp. 621-48.
- 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, pp. 81-102.
- Avery, R. B., R. W. Bostic and G. B. Canner (2000), "CRA Special Lending Programs," *Federal Reserve Bulletin* 86, pp. 711-31.
- Becker, Gary S. (1971), *The Economics of Discrimination*, (Chicago: University of Chicago Press).
- Blomquist, Glenn C. (1988), *The Regulation of Motor Vehicle and Traffic Safety* (Boston: Kluwer Academic Publishers).
- Board of Governors of the Federal Reserve System (2000), The Performance and Profitability of CRA-Related Lending, report to Congress.
- Bostic, Raphael W. and Breck Robinson (forthcoming), "Do CRA Agreements Influence Lending Patterns?" *Real Estate Economics*.
- Elliehausen, Gregory (1998), "The Cost of Banking Regulation: A Review of the Evidence," Board of Governors of the Federal Reserve System Staff Study 171.
- Federal Reserve press release (1995), "Community Reinvestment Act Regulations," April 24.
- Garwood, Griffith L. and Dolores S. Smith (1993), "The Community Reinvestment Act: Evolution and Current Issues," *Federal Reserve Bulletin* 79, pp. 251-67.
- Goldberg, Debby (2002), "The Community Investment Act and the Modernized Financial Services World," *ABA Bank Compliance* January/February, pp. 13-19.
- 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*, pp. 27- 46.
- Gunther, Jeffery W. (2000), "Should CRA Stand for Community Redundancy Act?" *Cato Institute Regulation* 23, pp. 56-60.
- Hanemann, W. Michael (1994), "Valuing the Environment Through Contingent Valuation," *Journal of Economic Perspectives* 8, pp. 19-43.

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

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, pp. 2-27.

Lang, William W. and Leonard I. Nakamura (1993), "A Model of Redlining," *Journal of Urban Economics* 33, pp. 223-234.

Litan, R. E., N. P. Retsinas, E. S. Belsky, G. Fauth, M. Kennedy, and P. Leonard (2001), *The Community Reinvestment Act After Financial Modernization: A Final Report* (Washington, DC: U.S. Department of the Treasury).

Luttner, Randall and John F. Morrall (1994), "Health-Health Analysis: A New Way to Evaluate Health and Safety Regulation," *Journal of Risk and Uncertainty* 8, pp. 43-66.

Office of Information and Regulatory Affairs (1997), *Report to Congress on the Costs and Benefits of Federal Regulations* (Washington, DC: Office of Management and Budget).

Peltzman, Sam (1975), "The Effects of Automobile Safety Regulation," *Journal of Political Economy* 83, pp. 677-725.

Phelps, Edmund S. (1972), "The Statistical Theory of Racism and Sexism," *American Economic Review* 62, pp. 659-61.

Schwartz, Alex (1998), "From Confrontation to Collaboration? Banks, Community Groups, and the Implementation of Community Reinvestment Agreements," *Housing Policy Debate* 9, pp. 631-662.

Stiglitz, Joseph E. and Andrew Weiss (1981), "Credit Rationing in Markets with Imperfect Information," *American Economic Review* 71, pp. 393-410.

Viscusi, W. Kip and James T. Hamilton (1999), "How Costly is 'Clean'? An Analysis of the Benefits and Costs of Superfund Site Remediations," *Journal of Policy Analysis and Management* 18, pp. 2-27.

**Table 1: Profile of unsampled, sampled, and responding institutions, by number and by proportion of assets or type of lending**

<u>Item</u>	<u>Size of banking institution (assets as of December 31, 1999, in millions of dollars)</u>						
	<u>Less than 950</u>	<u>950-4,999</u>	<u>5,000-29,000</u>	<u>30,000 or more</u>	<u>Overall</u>		
<i>By number of institutions</i>							
Not sampled							
Small institutions	9,576	0	0	0	9,576		
Large institutions <sup>1</sup>	0	61	22	4	87		
Total	9,576	61	22	4	9,663		
Sampled							
Respondents	0	72	44	27	143		
Nonrespondents	18	273	60	6	357		
Total	18	345	104	33	500		
MEMO							
Response rate (percent)	0.0	20.9	42.3	81.8	28.6		
<u>Assets or type of lending</u>							
		1-4 family		CRA 1-4 family	CRA home		Community
		mortgage loan	Small business	mortgage loan	improvement loan	CRA small business	development loan
	<u>Assets</u>	<u>outstandings</u>	loan <u>outstandings</u> <sup>2</sup>	<u>originations</u> <sup>2</sup>	<u>originations</u> <sup>2</sup>	<u>loan originations</u> <sup>2</sup>	<u>originations</u> <sup>2</sup>
<i>By percent of assets held, loans outstanding, or loans originated<sup>3</sup></i>							
Not sampled							
Small institutions	18	23	43	19	25	24	12
Large institutions <sup>1</sup>	10	3	3	2	3	4	8
Total	28	26	46	21	28	28	20
Sampled							
Respondents	52	47	31	53	45	39	44
Nonrespondents	21	27	23	26	27	33	36
Total	72	74	54	79	72	72	80

<sup>1</sup> Includes large wholesale banks, special purpose banks, banks headquartered outside the United States, and banks that were acquired after December 31, 1999.

<sup>2</sup> Estimated. Figures for CRA lending are estimates based on preliminary 1999 HMDA data and on CRA data for small business, small farm, and community development lending; estimation of the extent of lending in a banking institution's local community draws on information on bank office location or reported CRA assessment areas.

<sup>3</sup> *Percent of assets held*: Assets held as of December 31, 1999, as a proportion of assets held by all U.S. banking institutions at that date; *Percent of outstanding loans*: Dollar amount of loans outstanding at the end of 1999 as a proportion of dollar amount of loans held by all U.S. banking institutions at that time; estimated for small business loan outstandings by extrapolating data from the June 30, 1999, Bank Call and Thrift Financial Reports; *Percent of loan originations*: Dollar amount of loans originated during 1999 as a proportion of dollar amount of loans originated by all U.S. banking institutions reporting loan origination data pursuant to the HMDA or CRA during the year.

**Table 2: Banking institutions and CRA special lending programs covered in survey, by size of institution, 1999**

	<u>Size of banking institution</u> (assets, in millions of dollars)			
	<u>All reporting institutions</u>	<u>950-4,999</u>	<u>5,000-29,999</u>	<u>30,000 or more</u>
<i>Institutions</i>				
Number responding to survey <sup>1</sup>	143	72	44	27
Offering at least one program				
Number	103	48	31	27
Percent	72	67	70	89
<i>Number of programs</i>				
Among the five largest at each institution <sup>2</sup>	341	138	116	87
Smaller than the five largest at each institution	281	31	139	111
Total				
Number	622	169	255	198
Mean number per institution offering at least one program	6.0	3.5	8.2	8.3
<i>Number of programs among the five largest at each institution, by type of loan offered</i>				
One- to four-family home, purchase and refinance only <sup>3</sup>	247	98	83	66
Small business only	27	17	4	6
Other	67	23	29	15
One- to four-family home, home improvement only	17	7	6	4
Multifamily only	16	6	8	2
Consumer only	5	1	3	1
Commercial only	4	1	3	0
Other <sup>4</sup>	25	8	9	8

<sup>1</sup> Excludes one institution (in the middle size category) that did not respond to the special lending portion of the survey.

<sup>2</sup> Institutions were asked for detailed information on only the five largest of their programs (measured by dollar volume of 1999 originations).

<sup>3</sup> Programs reported in this row and the remaining rows of this table are from among the 341 reported by all institutions to be among their 5 largest.

<sup>4</sup> Programs identified as such by survey respondents and programs that offer more than one type of loan.

	<u>Home Mortgage</u>	<u>Home Improvement</u>	<u>Small Business</u>	<u>Community Development</u> <sup>1</sup>
At least 1 SAT program	30.2	4.0	4.5	49.9
No SAT, but another CRA reason	19.2	3.5	3.7	16.1
No CRA reason, but some other	5.5	0.5	2.2	18.5
No program but lending in area	39.6	73.6	82.1	--
No lending	5.0	18.4	7.5	15.5
Total	100.0	100.0	100.0	100.0

<sup>1</sup>For community development lending, the breakdown on use of CRA special lending programs includes all community development lending.

<b>Table 4: CRA Special Lending Program Profitability (percent distribution of programs)</b>				
	<u>Home Mortgage</u>	<u>Home Improvement</u>	<u>Small Business</u>	<u>Community Development</u>
<i>SAT programs</i>				
Profitability data given	65.2	100.0	100.0	61.2
Profitable	23.9	10.6	3.1	51.7
Marginally Profitable	32.0	44.0	12.9	40.3
Breakeven	24.5	45.4	6.3	4.9
Marginally Unprofitable	9.2	0.0	51.8	3.2
Unprofitable	10.4	0.0	25.9	0.0
Total	100.0	100.0	100.0	100.0
Missing profitability	34.8	0.0	0.0	37.2
Total	100.0	100.0	100.0	100.0
Memo: Number of programs	96	6	10	70
<i>Programs with any CRA-related reason</i>				
Profitability data given	76.4	100.0	100.0	90.0
Profitable	25.9	5.3	43.5	50.2
Marginally Profitable	35.0	44.4	13.0	43.5
Breakeven	15.5	45.1	3.1	3.8
Marginally Unprofitable	14.3	5.3	27.5	2.5
Unprofitable	9.3	0.0	13.0	0.0
Total	100.0	100.0	100.0	100.0
Missing profitability	23.6	0.0	0.0	10.0
Total	100.0	100.0	100.0	100.0
Memo: Number of programs	191	11	19	94
<i>All programs</i>				
Profitability data given	77.5	100.0	93.3	90.0
Profitable	28.9	4.9	55.7	54.8
Marginally Profitable	31.7	43.5	10.2	38.3
Breakeven	13.5	44.2	2.5	3.6
Marginally Unprofitable	15.7	4.9	21.6	2.0
Unprofitable	10.2	2.5	10.2	1.3
Total	100.0	100.0	100.0	100.0
Missing profitability	22.5	0.0	6.7	10.0
Total	100.0	100.0	100.0	100.0
Memo: Number of programs	226	14	27	122

**Table 5: Distribution of institutions by profits and losses associated with their marginal lending activities**

Marginal lending: SAT CRA special lending programs

Profits: If any category of marginal lending is break even, marginally profitable, or profitable

Loss: If any category of marginal lending is marginally unprofitable or unprofitable

	<u>Home Mortgage</u>	<u>Home Improvement</u>	<u>Small Business</u>	<u>Community Development</u>	<u>Compo- site</u>
<i>Distribution by profitability</i>					
Some profitable lending	26.3	4.0	1.5	45.4	55.3
No profitable lending	3.9	0.0	3.0	4.5	4.5
No marginal lending	69.8	96.0	95.5	50.1	40.2
Total	100.0	100.0	100.0	100.0	100.0
<i>Distribution by losses</i>					
Some loss	9.1	0.0	3.0	4.5	13.6
No loss	21.1	4.0	1.5	45.4	46.2
No marginal lending	69.8	96.0	95.5	50.1	40.2
Total	100.0	100.0	100.0	100.0	100.0

<b>Table 6: Profitability and loss using a broader definition of marginal lending activities</b>					
Marginal lending: SAT CRA special lending programs and proactive institutions without programs					
Profits: If any category of marginal lending is break even, marginally profitable or profitable					
Loss: If any category of marginal lending is marginally unprofitable or unprofitable					
	<u>Home Mortgage</u>	<u>Home Improvement</u>	<u>Small Business</u>	<u>Community Development</u>	<u>Compo- site</u>
<i>Evidence of market failure</i>					
Some Profitable	39.1	13.6	9.7	45.4	63.6
No Profitable	6.9	1.2	3.3	4.5	3.5
No marginal lending	54.0	85.2	87.0	50.1	32.9
Total	100.0	100.0	100.0	100.0	100.0
<i>Evidence of loss</i>					
Some Profitable	12.1	1.2	3.3	4.5	16.3
No Profitable	33.9	13.6	9.7	45.4	50.8
No marginal lending	54.0	85.2	87.0	50.1	32.9
Total	100.0	100.0	100.0	100.0	100.0

**Table 7: Evidence of market failure for narrower definitions of profitability**

Marginal lending: SAT CRA special lending programs					
Profits variant 1: If any category of marginal lending is marginally profitable or profitable					
Profits variant 2: If any category of marginal lending is profitable					
	<u>Home Mortgage</u>	<u>Home Improvement</u>	<u>Small Business</u>	<u>Community Development</u> <sup>1</sup>	<u>Compo- site</u>
<i>Profits Variant 1</i>					
Some Profitable	19.6	2.0	1.3	42.1	51.1
No Profitable	10.6	2.0	3.3	7.8	8.8
No marginal lending	69.8	96.0	95.5	50.1	40.2
Total	100.0	100.0	100.0	100.0	100.0
<i>Profits Variant 2</i>					
Some Profitable	9.4	0.5	0.2	22.1	29.8
No Profitable	20.8	3.5	4.3	27.8	30.0
No marginal lending	69.8	96.0	95.5	50.1	40.2
Total	100.0	100.0	100.0	100.0	100.0

**Table 8: Logistic Regression, predicting which institutions will have marginal loans<sup>1</sup>**  
(Standard Errors in Parenthesis)

	<u>HP Unprofitable</u>
Intercept	-1.476 (3.470)
Assets > \$30B (Dummy)	.808 (1.657)
Assets \$5-\$30B (Dummy)	3.696 (1.993)
Multi-Bank HC (Dummy)	-1.156 (1.425)
Average Mortgage Market Share (%)	-.022 (.218)
Average % Market Low-Mod	.004 (.089)
Thrift Institution (Dummy)	-3.723 (2.644)
Share of last 9 years w/merger	-.268 (.307)
Outstanding Rating (Dummy)	.533 (1.312)

Memo:  
Sample Size 35

<sup>1</sup> A positive coefficient indicates the larger the variable value, the higher the probability of a being an institution making some marginal loans unprofitably. The model is not statistically significant at the 1 percent level in terms of overall fit.

Figure 1. The perfectly competitive, full-information case

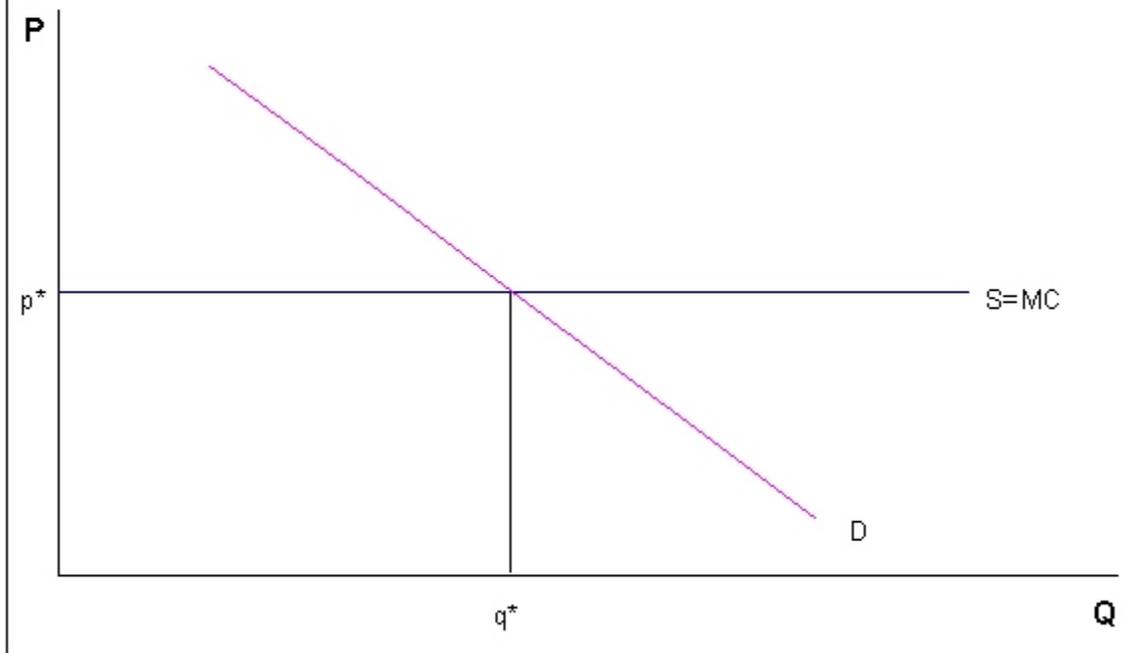


Figure 2. The monopoly case

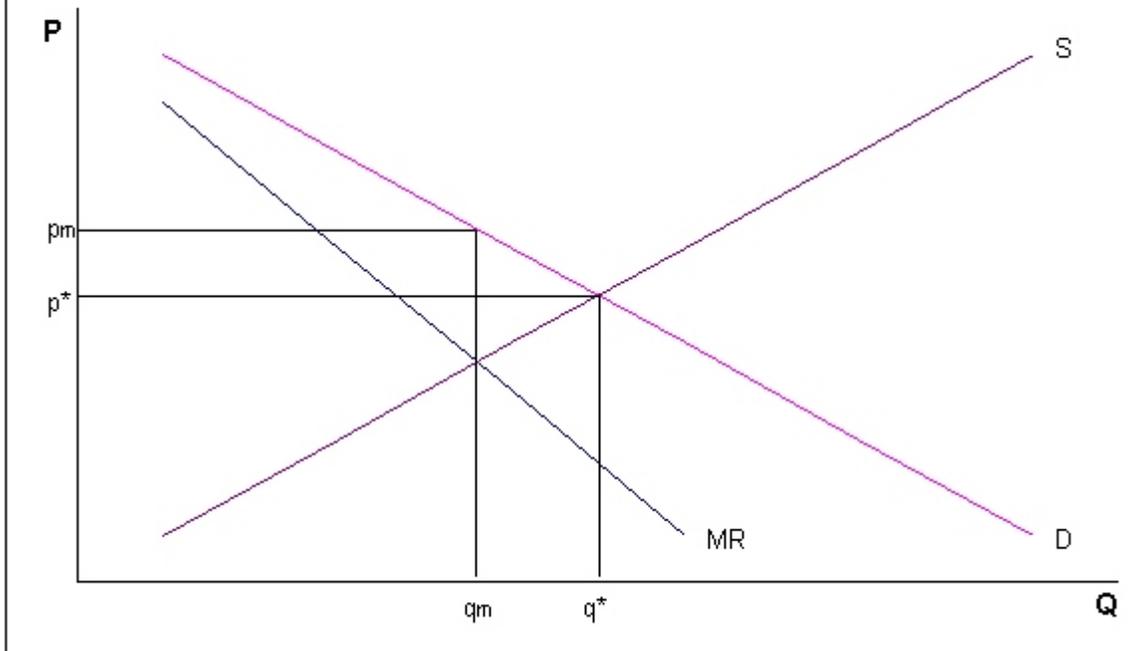


Figure 3. The imperfect information case

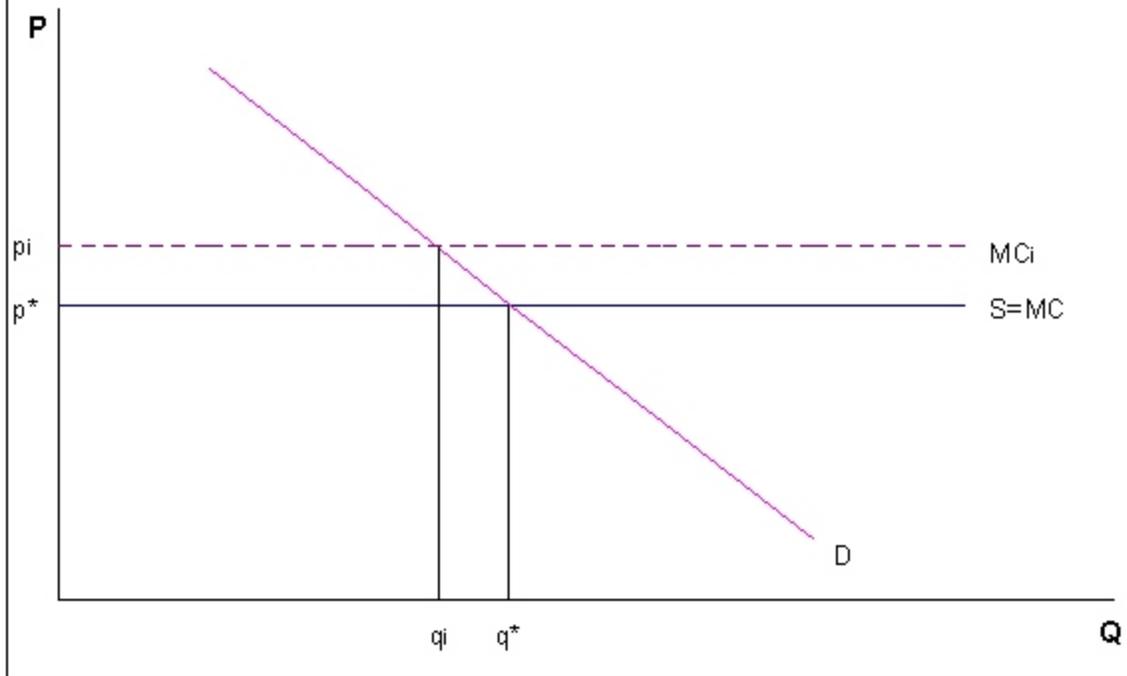


Figure 4. CRA effects in a perfectly competitive, full-information world

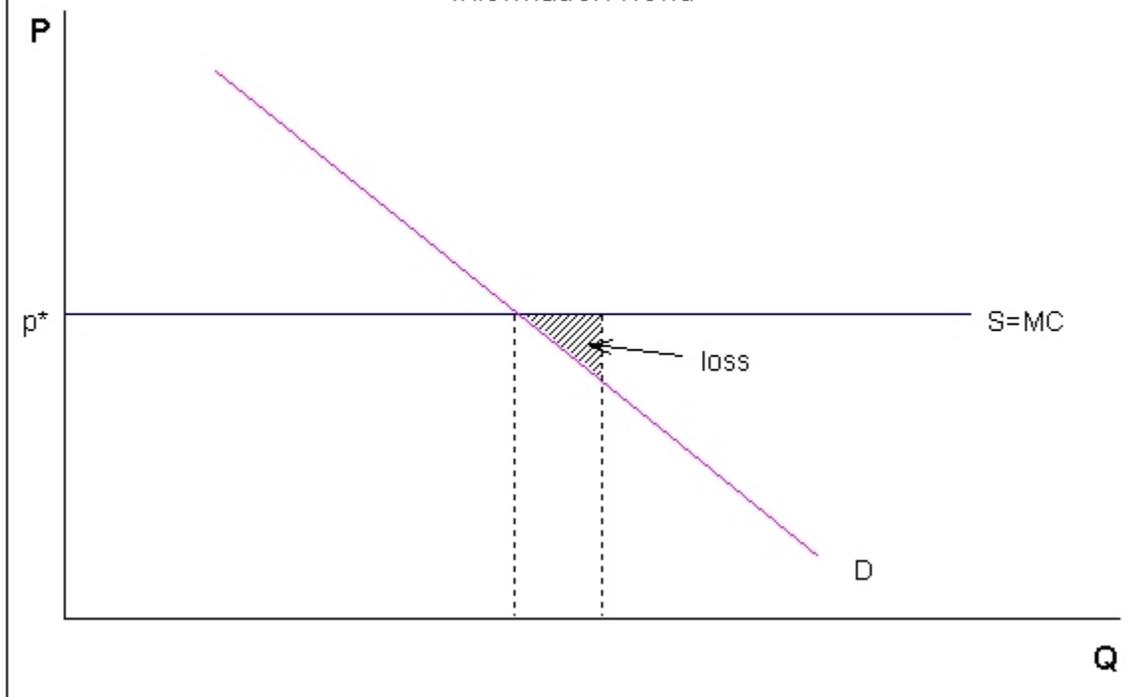


Figure 5. CRA effects in a monopoly world

