What Can Price Theory Say about the Community Reinvestment Act?

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T he Community Reinvestment Act (CRA or Act) is credited with funneling billions of dollars in loans and investments to distressed U.S. communities over the last two decades. Passed in 1977 in response to concerns that banks were failing to make loans in declining communities, the Act in essence requires federal bank regulators to assess banks' lending and investment activities and encourage expanded lending and investment in lower-income communities.[1] Its passage was viewed as an important step in curbing lending practices that might discriminate against borrowers in low-income communities and assuring that banks would provide much-needed funding for urban and rural development. And CRA has indeed changed the way bankers think about lending in low-income communities in the United States. With federal regulators looking over their shoulders, bankers today are more careful about their lending and investment practices, particularly to the extent that such practices differ across the often-diverse communities they serve. While it is difficult to quantify the contribution of CRA to community development, some lower-income neighborhoods undoubtedly have benefited from the Act. The percentage of low-income loans in the typical bank's loan portfolio has grown, albeit modestly, in recent years, and many cities have received sizeable grants from banks in support of their community development efforts.

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[1] All depository institutions except credit unions are subject to CRA regulations—i.e., CRA is applicable to commercial banks, savings banks, and savings and loans. Throughout this article the simpler term *banks* will be substituted for *depository institutions*.

Yet, 25 years after its passage, CRA continues to draw criticism and generate controversy. The controversy stems in part from differences of opinion regarding the need for CRA as a tool to counter discriminatory lending practices given that comprehensive fair-lending laws are also in place. Critics of the Act maintain that there is little evidence that banks discriminate by neighborhood or community when lending and that therefore there is little need for legislation that goes beyond the protection offered by laws preventing discrimination based on minority status. Proponents of CRA, however, argue that the Act is needed because in its absence some banks would indeed discriminate based on a borrower's location, and perhaps even completely refuse to serve some neighborhoods, essentially redlining those communities. Many proponents believe that CRA offers minorities additional protection against discrimination even if banks don't redline.

Some proponents of CRA also argue that the Act improves lending-market performance by increasing the information available about lending in low-income areas. If so, then CRA can be beneficial for both borrowers and lenders. Canner and Passmore (1995, 77–79) discuss this view of CRA as a mechanism for correcting for market failure due to externalities and compare this perspective to other views of how CRA affects bank lending. If CRA partially corrects for market failure, then lending markets can become more efficient.

But critics of CRA have suggested that such government intervention in the banking industry reduces the efficiency of credit markets. They argue that this intervention, which in the case of lending allows some low-income borrowers to secure loans at below-market interest rates or on better-than-market terms, can distort credit markets and cause resources to be wasted. There are those who maintain that CRA lending represents a substantial subsidy to low-income borrowers and suggest that direct government aid or government loan programs provide a more efficient means of assisting low-income communities. Lacker (1995, 15–18), for example, is skeptical of the externalities argument, wondering why lending in low-income neighborhoods should be any more susceptible to market failure than lending in more affluent neighborhoods. He argues that funding community development directly out of general tax revenues seems more promising than employing CRA to redistribute income to alleviate the problems of the nation's low-income neighborhoods.

Without denying the benefits of CRA, we identify unique lending costs the Act imposes and analyze how these costs affect credit markets. We argue that CRA enforcement requires some banks to expand their low-income lending to such an extent that unprofitable loans are likely to be made, creating inefficiencies in credit markets. These inefficiencies are created as banks modify lending in response to CRA regulations and examinations. We also explore why CRA continues to survive in today's banking environment, despite the above costs that it imposes on banks but not on banks' competitors. Requirements that

impose higher costs on only one segment of an industry are notoriously diffi-
cult to maintain in a competitive environment, and since the passage of CRA
in 1977, the financial services industry has clearly become more competitive.
Banks must charge customers in some markets higher prices in order to sus-
tain lower, unprofitable prices in other markets. As competitors successfully
target these higher-priced markets, however, one would expect the source of
funding to eventually dry up. A number of industries—telecommunications,
electric utilities, and airlines—that have also been subject to deregulation and
increased competition over the last 20 years have seen similar requirements
erode as markets became more competitive.

    We believe that CRA has survived for 25 years for two reasons: (1) a
portion of CRA's costs can be shifted to banking products for which there
are fewer alternatives offered by banks' competitors, and (2) CRA's costs are
relatively small. Looking ahead, while many community activists support
CRA and would like to see it play an even larger role in funding community
development, we consider it unlikely that CRA will take on an expanded role
because competition imposes very real limits on banks' ability to draw funds
from customers to support CRA lending.

1.   CRA AND COST SHIFTS

In evaluating the effects of CRA on bank lending, we model CRA as a require-
ment to expand output of one product of a multiproduct firm. More specifically,
this requirement is that a bank's low-income lending equal a fixed proportion
of total lending.[2] We also assume that CRA requires banks to expand low-
income lending beyond the level that would prevail in the absence of the Act.
We begin by discussing a proportion-based requirement in general terms, and
then illustrate some of the consequences for costs and output using a hypo-
thetical example of a lawn mower manufacturer. A detailed presentation of
the consequences of a proportional CRA lending requirement concludes the
section.

A Requirement to Expand Output

Requirements meant to encourage expanded output of one product sold by a
multiproduct firm are not unique to banking. For example, regulations adopted

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[2] The CRA regulations define four income categories (see, for example, Board of Governors
Regulation BB). A low-income individual or family is one with income less than 50 percent of
area median income. Moderate income is income that is at least 50 percent and less than 80
percent of area median income. Middle income is at least 80 percent and less than 120 percent
of median income. Upper income is 120 percent or more of median income. In our model the
phrase *low-income* corresponds to the low- and moderate-income categories in the regulations, while
middle- to high-income (MHI) corresponds to the two higher-income categories.

in California in 1990 encourage expanded production of environmentally benign motor vehicles. These regulations require that specific percentages of passenger cars and certain light-duty trucks produced for sale in the state by each of the seven largest auto manufacturers be zero-emission vehicles (ZEV). The objective was that ZEVs compose 2 percent of production by model year 1998 and 10 percent by 2003.[3]

In a competitive industry, a requirement to expand output beyond the level chosen by a firm will generally mean that the additional output is produced at a loss. A producer in such an industry normally chooses to produce the quantity at which its marginal costs just equal the price buyers are willing to pay. Since marginal costs of production generally rise with increasing output, and because in a perfectly competitive market a single price exists for the firm's entire output, profits are greatest at a level of output where marginal costs equal the market price. If production is below this level, the cost of producing an additional unit is below the price buyers are willing to pay, so the firm will continue to expand output in order to increase profits. The producer will not choose to expand output beyond the point at which marginal costs equal price because it would suffer losses on this additional output.

If the firm produces two goods and a regulation requires that the production of one good be expanded to be at least a certain percentage of total production of both goods, then a penalty cost is incurred for the production of the second good. The penalty cost consists of the losses from additional sales of the first good, for these losses must be incurred when additional quantities of the second good are sold. The imposition of a penalty cost matters little if all firms are subject to the same regulation. But if some firms are free of regulation, such firms will gain market share in the second good. Unregulated firms do not sustain a penalty cost, so they can charge a lower price and acquire some of the regulated firms' customers.

An Example

To illustrate how a market might respond to a regulation requiring expansion of output, consider a simple hypothetical example of a lawn mower manufacturer that sells both electric- and gasoline-powered lawn mowers in a competitive market. Legislators in this example impose a requirement that all manufacturers of lawn mowers produce relatively more electric-powered models in order to protect the environment.

The supply curve for electric lawn mowers identifies the quantity of such mowers the firm will produce at various prices. As the market price increases,

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[3] California regulations have since been modified to allow manufacturers to meet the percentage requirements with a combination of ZEVs and very low emission vehicles. ZEV mandates were adjusted to allow manufacturers to receive partial credit for extremely low emission vehicles that were not pure ZEVs. See California Environmental Protection Agency (2001).

the manufacturer is able to recover higher manufacturing costs, and the number of electric-powered mowers it is willing to produce increases. The number of electric mowers produced at a given price depends on the firm's marginal cost of production. This cost rises as the firm produces more. The demand curve is horizontal because the firm in our example operates in a perfectly competitive market—it is only a small manufacturer in a large market for electric mowers. It cannot affect the market price for electric mowers because its portion of the market is almost insignificant. Given its demand and supply curves, the firm will produce a quantity of mowers identified by the intersection of supply and demand curves, or for our example, 100 electric mowers. The firm earns its highest profit by manufacturing 100 electric lawn mowers.

The manufacturer also chooses to produce the quantity of gas mowers determined by the intersection of supply and demand curves for this product. The equilibrium price and output quantities differ, however, in the gas and electric mower markets. In equilibrium, we will assume the manufacturer produces 100 electric mowers and 900 gas mowers, for a total output of 1,000 lawn mowers.

Suppose legislators decide that electric lawn mowers are more environmentally friendly and that their use should be encouraged. Legislation is therefore passed requiring that electric mowers account for 15 percent of total mower production rather than the current 10 percent. The legislative requirement leads the manufacturer to increase its output of electric mowers beyond 100. The manufacturer's marginal cost exceeds marginal revenue when it produces more than 100 mowers. With a regulation requiring the manufacturer to expand production of electric mowers to 150, the manufacturer suffers losses on each of the last 50 electric mowers produced.

Because of this requirement, the firm's supply curve for gas mowers will shift leftward to a position above what it would be without the requirement. Why does the requirement raise the manufacturer's cost of producing gas mowers? Because the number of electric mowers produced is determined by the manufacturer's production of all lawn mowers, both electric and gas. As a result, when the manufacturer wishes to expand its production of gas mowers, it must also expand its production of electric mowers in order to comply with the electric mower output requirement. So when a firm increases gas mower production, it is required to produce electric mowers at a loss.

The output requirement will affect manufacturers to different degrees because their cost curves vary. Some firms are especially skillful or well equipped for producing electric mowers; others are more skillful at gas mower production. For example, a manufacturer located in a city with battery and electric-motor suppliers can be expected to have relatively low costs for electric mower manufacture because shipping costs for these mower components will be low. For manufacturers especially equipped to make electric mowers, one would expect that production of electric mowers as a percentage of all mowers would

be well above average in the absence of an output requirement, or above 10 percent in our example. For such manufacturers, electric mowers might represent 25 percent of their total mower output. The legislative requirement that electric mowers compose 15 percent of all mowers would not result in a cost increase for these manufacturers—the requirement is nonbinding for them.

## CRA in a Competitive Banking Environment

CRA requirements impose a mandate to expand lower-income community lending analogous to an automobile industry requirement promoting electric vehicles and our hypothetical example of a requirement to expand electric mower production. While CRA also promotes community development investments and service, banks focus their CRA compliance efforts on lending; therefore, our analysis of CRA does so as well. We begin with a look at the effect of CRA on an individual bank assumed to be operating in a competitive banking environment. A requirement to expand lower-income lending will produce an increase in the effective cost of other types of lending. This increase in banks' effective lending costs means that nonbank lenders gain a competitive advantage. We then broaden our analysis to cover the financial services industry as a whole, including nonbank competitors. As will be shown, federal bank regulators lose much of their ability to influence the number of loans made to low-income communities when financial institutions not subject to CRA lending requirements emerge.

CRA and One Bank

When a bank operates in a perfectly competitive market, its supply and demand curves for loans made in low-income communities appear as shown in Figure 1a. The bank's supply curve identifies the number of loans it is willing to make at various interest rates. As the market rate of interest increases, the bank is able to recover higher costs of lending, and the number of loans the bank is willing to make increases. The number of loans it will make at a given interest rate, say R_L, depends on the bank's marginal cost of lending.[4] The bank's marginal cost of lending rises because to increase its lending it must, for example, spend more to attract qualified loan officers from other fields or make increasingly higher outlays for marketing to attract additional borrowers. The demand curve D in Figure 1a is horizontal since the bank is only a small part of a huge lending market. Given demand curve D and

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[4] While in Figure 1a, and throughout the article, the supply curve is represented as equivalent to the marginal cost curve, this is a simplification. A firm's output also depends on its average variable cost curve. The supply curve would be equivalent to the marginal cost curve only at market prices above the intersection of the marginal and average variable cost curves.

Figure 1 Single Bank, without CRA

a. Low-Income Loans

b. Middle- to· High-Income Loans
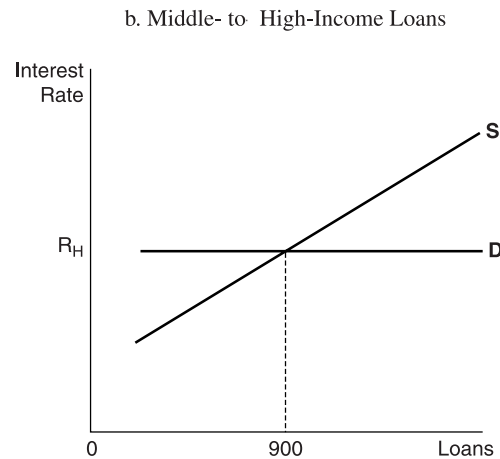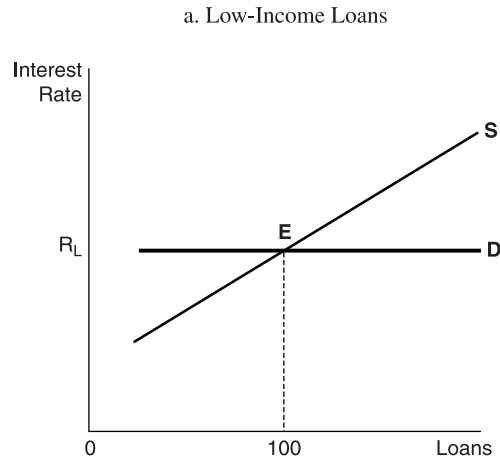
supply curve *S*, the bank will make 100 low-income loans—where the supply and demand curves intersect at point *E* in Figure 1a.

Supply and demand curves for lending in other markets will be similar and are represented in Figure 1b. We define other lending as loans to all borrowers except those in low-income communities. We will call them middle- to high-income (MHI) borrowers.[5] Note that in this market too the bank chooses to

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[5] For expository purposes, we represent the supply and demand curves of all other loan markets by the supply and demand curves of Figure 1b, even though each type of loan has its own supply and demand curves.

make the number of loans determined by the intersection of supply and demand curves. The equilibrium interest rates and loan quantities differ, however, in the two markets. In our example, in equilibrium the bank makes 100 low-income loans and 900 other loans for a total of 1,000 loans.

What effect do CRA requirements to expand lending have on the bank in our model? If binding, CRA requirements oblige the bank to make more low-income loans than it would if there were no requirements. Without CRA requirements, the bank chooses to make 100 low-income loans representing 10 percent of its total loans. Binding regulations, however, require the bank to extend more low-income loans in order to merit a satisfactory CRA rating. While its profit-maximizing output is 100 low-income and 900 other loans, binding CRA regulations require the bank to make low-income loans equal to, say, 15 percent of all loans. Although CRA examiners do not have explicit minimum percentage guidelines that banks must meet, they do expect bank lending to low-income individuals, in the absence of extenuating circumstances, to be roughly proportional to the low-income population. More will be said about examiner expectations later in Section 2.

Figures 2a and 2b illustrate the case in which CRA requirements are binding; in our example, the bank in Figure 1a must make more than 100 low-income loans. In Figure 2a the bank's marginal cost exceeds marginal interest earnings when it extends more than 100 low-income loans. With a regulation requiring low-income loans equal to 15 percent of total loans, the bank makes 150 loans, but it suffers losses equivalent to area BCE on low-income loans between 100 and 150. The bank would like to charge borrowers an interest rate sufficient to cover its higher costs of making each additional loan. The bank's low-income customers, however, are only willing to borrow at the interest rate of R_L.

Supply and demand curves for the bank's other lending market are shown in Figure 2b. The S curve in Figure 2b is the bank's cost of making MHI loans, without CRA requirements. The S' curve is the bank's cost of making MHI loans with a binding CRA requirement. The S' curve lies above the S curve for most of its range, reflecting the additional cost of a requirement to make at least some unprofitable low-income loans. We define unprofitable loans as those for which marginal cost exceeds marginal revenue. The S' curve begins to diverge from S at the level of MHI lending for which CRA requirements become binding.

In our example, with a CRA requirement that low-income loans account for 15 percent of all loans, the point of divergence is 567 MHI loans. If the rate of interest is such that the bank wishes to make only 567 loans—R'_H in Figure 2b—it will not be required to make any low-income loans for which costs exceed interest earnings. At 567 MHI loans the bank can make 100 low-income loans [$100/(567 + 100) = 15$ percent], exactly the number of low-income loans it would make without a CRA requirement.

Figure 2 Single Bank, with CRA

a. Low-Income Loans

b. Middle- to High-Income Loans
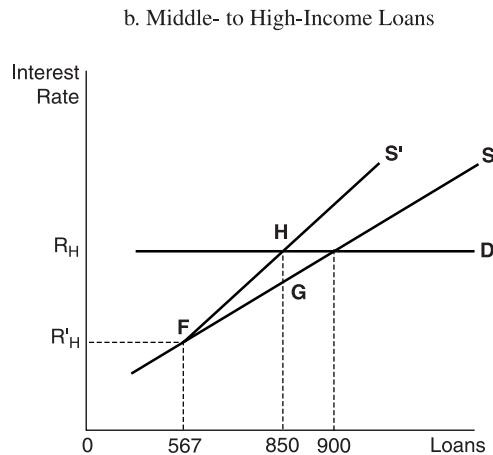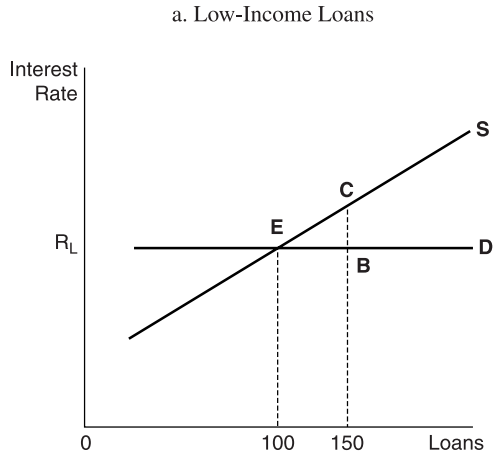
If the market rate of interest for MHI loans is above R'_H, the bank will find its most profitable combination of MHI and low-income lending to include more than 567 MHI loans and, because of CRA, more than 100 low-income loans. Since the S' curve represents not only the costs of making MHI loans, but also the losses generated by whatever quantity of low-income loans are called forth by the profit-maximizing level of MHI loans, it represents the bank's most profitable levels of high-income lending, given CRA.[6]

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[6] In Figures 2a and 2b we have assumed that the bank will continue to make a total of 1,000 loans (150 low-income and 850 MHI) after CRA is imposed. By imposing an additional

Figure 3 Middle- to High-Income Loans: Banking Industry with CRA
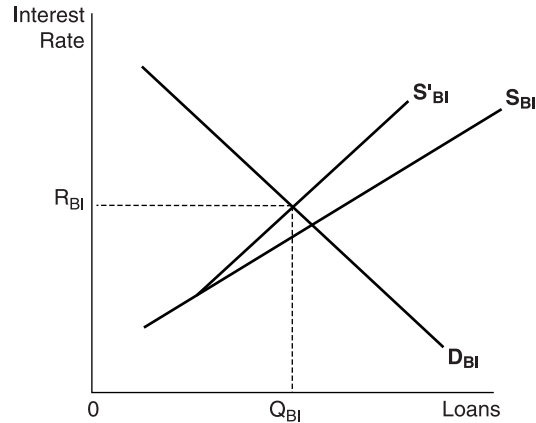
Banking Industry and Nonbank Competition

Banks today compete with nonbanks in most banking-product markets (see *Increased Competition from Nonbanks* in Table 1). For example, securities brokers offer money market mutual funds, for some customers an attractive alternative to holding a deposit account at a bank. Likewise, finance companies offer consumer and business loans, and nonbank mortgage lenders offer residential mortgage loans, all in competition with similar loan products offered by banks. These nonbank competitors are free from CRA requirements. With nonbank competitors present, regulators face limits on their ability to employ CRA requirements to expand low-income lending; limits are present but less severe in the absence of nonbanks.

Figure 3 depicts the banking industry's cost curves for MHI loans—S_{BI} without CRA and S'_{BI} when subject to CRA, with no nonbanks present. These curves represent the horizontal summation of individual bank MHI cost curves like those shown in Figure 2b. Bank cost curves vary and are a function of many factors, including bank size.[7] The demand curve for MHI loans is given by D_{BI} in Figure 3. Unlike the single bank's demand curves in Figures 1 and 2, the industry demand curve is downward sloping. The market interest rate,

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cost on banks, CRA may instead result in a decline in total bank lending below 1,000 loans. Such a decline in total lending does not change the conclusion that a low-income requirement raises the effective cost of high-income lending.

[7] Only banks with minimum average cost at or below the market price can earn a profit, so only such banks will be present.

given CRA, is R_{BI}, determined where the S'_{BI} and D_{BI} curves intersect. The quantity of MHI loans made is Q_{BI}.

Nonbank competitors are introduced in our analysis in Figures 4a through 4c. Figure 4a depicts the banking industry's supply curves, which are like those in Figure 3. Figure 4b shows the supply curve, S_N, for nonbanks. We assume that nonbanks have the same cost structure as banks but are not subject to CRA, so the S_N curve is an exact replica of the S_{BI} curve in Figure 4a.[8] The financial industry supply curve S_{FI} in Figure 4c is the horizontal summation of the nonbanks' supply curve S_N and the banks' supply curve S'_{BI} reflecting CRA costs. The second supply curve, S'_{FI}, in Figure 4c, represents a summation of bank and nonbank supply curves in a theoretical case in which nonbanks are subject to CRA and have supply curves like S'_{BI} in Figure 4a. In this scenario, all firms incur higher costs because of CRA and thus S'_{FI} lies above S_{FI}. By comparing interest rates and loan quantities when the supply curve is S'_{FI} with rates and quantities when the supply curve is S_{FI}, we can illustrate changes that result when firms not subject to CRA are introduced. The industry price and quantity are found at the intersection of the D_{FI} and S_{FI} curves in Figure 4c—interest rate R_{FI} and quantity Q_{FI}. Because S_{FI} lies below and to the right of S'_{FI}, R_{FI} is lower than R'_{FI}.
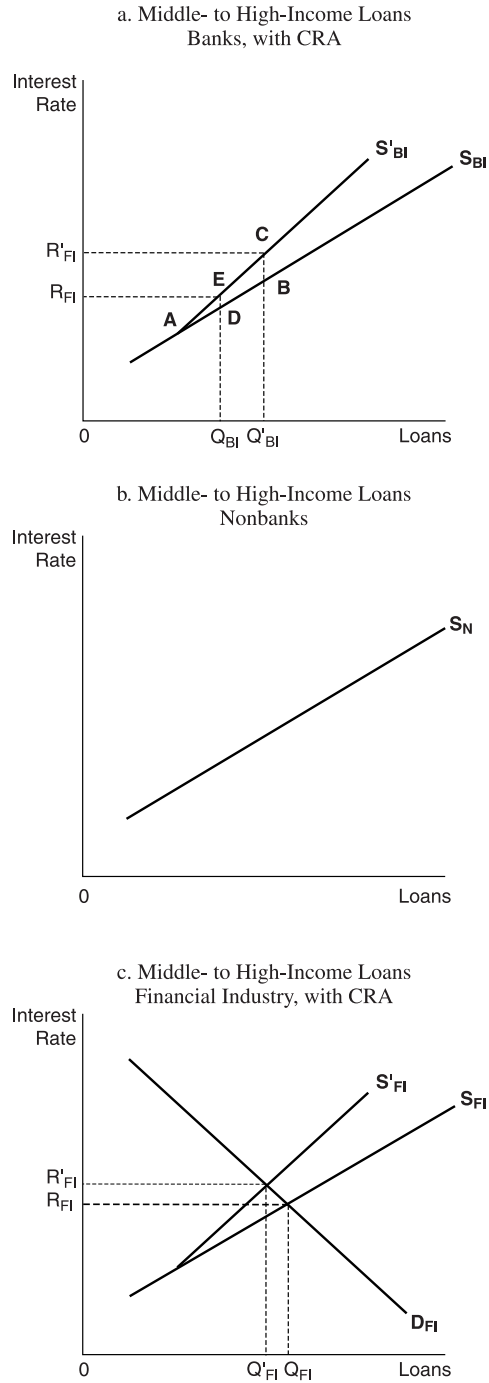
At the market interest rate of R_{FI} in Figure 4a, banks will make Q_{BI} loans, as determined by the intersection of the S'_{BI} curve and the market interest rate of R_{FI} that was determined in Figure 4c. In contrast, if banks face only competitors that are subject to CRA, the market interest rate is R'_{FI} (as determined in Figure 4c), and the quantity of bank loans is higher at Q'_{BI} in Figure 4a. The lower market interest rate R_{FI} reflects the presence of nonbank competitors, not subject to CRA, and causes banks to make fewer loans. In addition, the size of the CRA subsidy is lower in the presence of nonbank competitors. Without these nonbanks, the subsidy is the ABC triangle in Figure 4a; with nonbank competitors, the subsidy is the smaller triangle ADE.

This CRA subsidy represents the transfer of costs from low-income to high-income borrowers. The subsidy is due to CRA's lending requirement, which results in low-income borrowers receiving loans at prices below banks'

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[8] For expository purposes we have assumed that the cost structures of banks and nonbanks are the same. Such an assumption means, however, other things being equal, that banks would immediately convert to nonbank status if they were able to do so costlessly and could avoid CRA by converting. In practice, banks may not want to convert because they hold certain advantages as banks. Some observers maintain that transactions accounts offer banks a low-cost source of funds. While some nonbanks offer accounts with certain transaction features, accounts at nonbanks typically do not provide all of the payments features of a bank checking account. Further, banks may have cost advantages because of special lending skills, access to information not available to nonbanks, or access to what some argue is underpriced deposit insurance. A lower cost curve may allow banks to continue to compete successfully against nonbanks despite the costs that CRA imposes on high-income lending, so banks would not choose to convert to nonbank status. In Section 4 we provide further discussion of possible bank cost advantages.

Figure 4 Financial Services Industry

a. Middle- to High-Income Loans
Banks, with CRA

Interest
Rate

S'_{BI} S_{BI}

C

R'_{FI}

E   B

R_{FI}

A   D

0   Q_{BI} Q'_{BI} Loans

b. Middle- to High-Income Loans
Nonbanks

Interest
Rate

S_N

0   Loans

c. Middle- to High-Income Loans
Financial Industry, with CRA

Interest
Rate

S'_{FI} S_{FI}

R'_{FI}
R_{FI}

D_{FI}

0   Q'_{FI} Q_{FI} Loans

marginal cost of making the loans. While low-income borrowers benefit, high-income borrowers that receive a bank loan pay more than they would have paid in the absence of the CRA requirement.

Implications for Expansion of CRA

In addition to reducing a bank's MHI lending, the presence of nonbank competitors not subject to CRA is likely to diminish the effectiveness of CRA as a tool for expanding lending to low-income borrowers. Specifically, an increase in the stringency of CRA requirements in the presence of nonbank competitors will result in a smaller dollar amount of funds available for low-income lending.

The following example illustrates this constraint on regulators' ability to expand low-income lending. Assume first that banks are the only type of financial institution in the industry. With an S'_{BI} only slightly above S_{BI} in Figure 4a, meaning a CRA requirement causes banks to make only a small number of low-income loans above the quantity they would make without the requirement, the subsidy is small. The size of the subsidy will initially increase, but as the CRA requirement becomes more stringent, the subsidy will decline. In graphical terms, as the S'_{BI} curve swings counterclockwise and away from S_{BI}—that is, CRA requirements become more stringent—the area of the ABC triangle increases at first, then later decreases.[9] The area will shrink as the S'_{BI} curve becomes ever more vertical because the BC side of the triangle draws near point A of the triangle.

But with nonbanks competing with banks and attracting their customers, the market rate of interest will rise less than it would in the absence of nonbanks for any given increase in CRA stringency. The smaller increase occurs because the nonbanks' supply curve is unaffected by the increased stringency. As a result, S_{FI} in Figure 4c, derived by summing banks' S'_{BI} curve from Figure 4a and nonbanks' S_N curve from Figure 4b, does not swing as far as the S'_{BI} curve because its swing is damped by the stable nonbank curve. Thus, the interest rate changes little. Because the market interest rate rises less, the height of the BC side of the triangle in Figure 4a is also smaller in the presence of nonbanks. The ability of regulators to enlarge the size of the subsidy—i.e., the size of the triangle—is diminished by the existence of nonbanks.

Policymakers interested in assisting communities by expanding lending therefore face very real constraints. They could impose stricter requirements on banks in order to generate greater CRA lending benefits. For example, they might require that low-income loans account for 20 percent of total loans,

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[9] In addition, as CRA requirements become more stringent, point A in Figure 4a shifts along the S_{BI} curve toward the origin. Point A represents the level of lending at which CRA requirements become binding. In this graph this point shifts toward the origin as the required minimum ratio of low-income loans to total loans is increased.

rather than the 15 percent in our earlier example. However, stricter require-
ments eventually produce a declining subsidy as the quantity of MHI loans
made by banks declines and nonbank competitors acquire more of the banks'
customers.

2.   CRA IN PRACTICE

The graphical analysis in Section 1 captures the essential elements of CRA's
low-income lending requirement.[10] However, there are two critical assump-
tions that need further elaboration. The analysis assumes that regulators expect
banks to match or exceed a specific ratio of low-income lending to total lend-
ing. While this ratio is a simple statistic and only one of several indicators
considered in a fairly complex CRA lending review, it provides regulators
with an important benchmark of acceptable lending practice. The graphical
analysis also assumes that absent CRA, banks would extend all the profitable
low-income loans possible, and it thus implies that CRA causes banks to make
unprofitable loans. Since the banking industry is currently quite competitive,
and there is little evidence of discrimination based on geographical location,
we believe our assumptions are reasonable in today's banking environment.
These assumptions are explained in more detail below.

CRA Enforcement and Lending Ratios

The Community Reinvestment Act requires regulators to "assess the [bank's]
record of meeting the credit needs of its entire community, including low-
and moderate-income neighborhoods," and to "take such record into account"
when evaluating a bank's merger application (12 U.S.C. 2901, sec. 804). Fed-
eral bank regulators make their assessment, assigning a bank one of four
ratings: (1) substantial noncompliance, (2) needs to improve, (3) satisfactory,
and (4) outstanding. Banks that receive low ratings are likely to have difficulty
convincing regulators to approve merger applications. Thus, banks anticipat-
ing future mergers will tend to make at least enough low- and moderate-income
loans to ensure that a merger will not be denied, which for some banks will
likely involve an expansion in lower-income lending beyond the level they
would choose in the absence of the Act. While the CRA regulations require
examination of a bank's record of meeting the credit needs of its "entire com-
munity," the intent is clearly to promote more lending in low- to moderate-
income communities. For example, the Federal Reserve's Regulation BB

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[10] While our article focuses on CRA's low-income lending requirement, CRA enforcement
also seeks to encourage expanded lending within banks' local markets as well as expanded small-
business and small-farm lending. Measuring such lending by each bank and basing the bank's
CRA rating, in part, on these types of lending provide the encouragement.

specifies "a very poor geographic distribution of loans, *particularly to low- or moderate-income geographies*" (emphasis added) as one of the factors that can cause a bank to receive a rating of substantial noncompliance. The Act also requires examiners to evaluate banks' efforts at meeting the "credit needs" of the community, which includes lending and investments, but the CRA rating is most dependent on lending.[11]

The discussion in Section 1 suggests that CRA examiners require banks to achieve a certain minimum ratio of low-income lending to total lending. And in practice, CRA examiners do calculate the ratio of a bank's low-income lending to total lending and compare that figure to the proportion of low-income population to total population in the bank's assessment area as a rough benchmark of appropriate lending procedures.[12] Examiners recognize, however, that there might be legitimate reasons why a bank's low-income lending would not be proportional to the low-income population. For example, examiners will take into consideration the prevalence of rental housing in an area when examining a bank's mortgage lending patterns, since the demand for mortgage lending would likely be lower in areas with a high proportion of rental properties. Likewise, adjustments are made for areas where income levels are extremely low or unemployment is high, since individuals with very low incomes or those that are unemployed are unlikely to be willing or able to borrow.

Still, in general, given these adjustments, if low-income households compose 20 percent of the population in the bank's assessment area, then examiners expect approximately 20 percent of the bank's total loans to be made to low-income households. Barring unusual circumstances, if the bank increases its total loans, it will be expected to increase its low-income loans proportionally. Our assumption of a fixed proportion of low-income loans to other loans in the graphical analysis reflects this regulatory approach to CRA enforcement.[13] Whenever the bank considers making a loan that does not qualify for CRA credit—say, a loan to an individual in a high-income community—it will take into account that it will also be required to add to its low-income lending.

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[11] Large banks are rated based on three tests: a lending test, an investment test, and a service test. On each of the three tests, the bank receives a rating. The lending test, however, is predominant. A bank's numerical score on the lending test receives twice the weight of scores on either the investment or service tests before these three scores are summed to obtain the composite CRA score (FFIEC 1997, 15–16). Small bank CRA ratings generally depend only on lending, though investment and service activities can earn the small bank extra credit toward its final rating.

[12] The shorter term *low-income* will be used in place of the term *low- and moderate-income* throughout the remainder of the article.

[13] CRA performance evaluations for individual banks are available from websites maintained by the federal agencies that regulate banks. These evaluations provide a fairly detailed explanation of the factors examiners consider important in the determination of a CRA rating. An evaluation typically provides a calculation of the bank's proportion of low-income lending to total lending, which is compared to the proportion of low-income households in the assessment area. These evaluations often note when the two proportions are very different.

Does CRA Encourage Unprofitable Lending?

Without a doubt CRA has increased low-income lending (Litan et al. 2001). If in the absence of CRA, however, banks would have extended all profitable loans possible, then it is likely that the Act has resulted in at least some unprofitable loans.[14] Given the competitive nature of today's banking industry, it is hard to imagine that banks would overlook many opportunities to make additional profitable loans. When CRA was enacted in 1977, substantial regulatory restrictions on entry and pricing allowed some banks to exercise monopoly power in local banking markets. In such cases bankers would be expected to exploit monopoly power by restricting lending. If banks did restrict loans, it seems plausible that they would tend to prefer higher-income lending at the expense of low-income lending. Today, however, there are fewer entry and pricing restrictions in the banking industry, so monopoly power is likely to be quite limited. (See Table 1 for a review of competition in banking.)

Of course, one could argue that even in competitive markets, some banks might nevertheless prefer to avoid lending in certain low-income neighborhoods because of a bias against minorities predominant in a neighborhood or because of a lack of experience in lending to low-income borrowers, for example. Although not conclusive, a number of studies suggest there is little evidence of such failure to lend to individuals in low-income communities.[15] So, once again, in the absence of CRA we would expect banks to make all possible profitable loans, and if our expectation were met, CRA pressures to extend lending would produce unprofitable loans.

CRA may also be causing more low-income lending than is profitable because regulations generally do not make exceptions for differences in business strategies, market niches, or capabilities. Some banks are simply less adept at lending in low-income communities than others. For example, certain banks are especially skilled at making loans and gathering deposits from individuals in high-income communities or providing personal banking services to high-income individuals and make these services a large part of their deposits and loans. For such banks, CRA requires an expansion of low-income lending beyond the profit-maximizing equilibrium, acting as a tax on such banks' high-income lending. While one might imagine that there are few niche banks that specialize in personal banking, all banks will be on a continuum from those most capable at low-income lending to those most capable at high-income lending.[16]

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[14] See, for example, Gramlich (2001).

[15] For reviews of the literature on geographic discrimination, see Lacker (1994, 6–9) and Evanoff and Segal (1996, 24–25).

[16] In some cases, a bank can improve its CRA rating not only by making low-income loans but also by purchasing such loans made by other lenders. If a niche bank, for example, is able to purchase low-income loans from a lender specializing in making such loans, then the cost imposed by CRA on the niche bank might be lowered.

Recently the Board of Governors of the Federal Reserve System surveyed banks in order to quantify the profitability of CRA lending. Profitability in the Board study was measured in terms of accounting profits, that is, return on equity. The Board asked respondents to measure profits based on revenues and costs associated with such items as overhead and the servicing, pricing, delinquency, and prepayment of CRA loans (Board of Governors 2000b). This definition of profitability differs from that used in Section 1, where profitability is defined as the difference between marginal revenue and marginal cost. The Board survey found that bank loans that qualify for CRA credit are profitable for most banks, with many institutions reporting that they are as profitable as comparable non-CRA loans. However, a high proportion of institutions reported that CRA loans are less profitable (44 percent of institutions in the case of home mortgage lending), and almost none reported them as more profitable.

Yet, to answer our question regarding unprofitable lending, we must move beyond an examination of the average profitability of all CRA loans and examine only those low-income loans that are made simply because of the presence of the Act. In other words, in the absence of CRA, banks would make a certain number of low-income loans, but only if these loans were expected to be profitable. The Act may require banks to make additional loans that are unprofitable. The average profitability of all low-income loans might be positive even if banks make unprofitable loans in response to CRA. So while the Board study does not answer our question, the fact that CRA loans are often less profitable suggests that unprofitable loans may be lowering the average. Given the competitive nature of the banking industry, we believe it is reasonable to assume that CRA encourages banks to make unprofitable loans.

Still, no industry is perfectly competitive. And the banking industry has some characteristics suggesting that it is no exception, despite the fact that its competition is quite strong. For example, observers have noted that switching costs may be significant in banking, meaning that it is costly for a consumer to change banks to take advantage of a superior interest rate or lower fee (Rhoades 2000). Switching costs might be significant for a consumer because shifting transaction accounts to a different bank would require the consumer to contact his or her employer, utilities, and mortgage company to modify direct deposit and direct withdrawal arrangements. As a result of switching costs, banks might exercise some pricing power over existing customers, providing a source of supracompetitive profits. If banks enjoy a measure of monopoly power in pricing, then some of the additional low-income loans CRA will induce are not necessarily unprofitable. Nevertheless, even if banks do not lose money on these additional loans, the requirement to make additional loans will lower profits below the bank's profit-maximizing level of lending, and the economic analysis found in Section 1 of this article will be unaffected.

Because profits are diminished for each additional CRA loan beyond the profit-maximizing quantity, banks will take account of the lost profits when deciding to make an MHI loan. Accordingly, a CRA requirement will mean an increase in the marginal cost of making MHI loans, or equivalently a leftward shift in the supply curves for bank MHI lending in the graphs.

3.   EFFICIENCY AND EQUITY

While CRA has expanded lending in low-income neighborhoods, any benefit derived from the expansion may be offset by costs resulting from less efficient credit markets. Furthermore, some costs CRA imposes may be borne disproportionately by low-income individuals. The expansion of lending to low-income communities distorts credit decisions on loans made to individuals and businesses in both low- and high-income communities. At the same time, CRA can place banks at a cost disadvantage in relation to nonbanks, which are not subject to CRA, further distorting the market. Banks will attempt to shift the costs of making unprofitable loans to those customers who have the fewest alternatives to bank products.[17] Since low-income individuals frequently have few alternatives, they will tend to bear more than their share of such costs.

Efficiency Losses

Efficiency losses occur for several reasons. Imagine that one of the 50 borrowers discussed in Section 1 is a small-business owner in a low-income community who plans to undertake a project that will produce a rate of return equal to R_L in Figure 2a. Consequently, this borrower is willing and able to pay an interest rate as high as R_L to borrow to fund the project. But the bank, having already made 100 loans, finds that its cost of making this 101st loan is greater than R_L, as indicated by the S curve above R_L. The 101st loan is inefficient and results in a wasteful misallocation of resources inasmuch as costs exceed benefits as measured by the loan's rate of return. Because of CRA, the project is undertaken by the business owner, even though the project's economic benefits—as measured by the income the owner earns on the project—are smaller than the costs of the resources employed to fund it. This project is funded, but the resources could be employed elsewhere in a project that delivers benefits exceeding resource costs.

To illustrate the second source of inefficiency, imagine an owner of a business in a high-income community. This business owner, with a project capable of earning more than R_H, would have received a loan if the bank's

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[17] For an example of cost shifting in banking see Fama (1985), who discusses banks shifting their reserve requirement costs to customers with the fewest alternatives.

cost curve had been S in Figure 2b. Instead, however, the loan is denied. The bank will make 900 loans if its cost curve is S, but only 850 loans if S'. As a result, the economic benefits from the project in the high-income community are unrealized.

A third type of inefficiency arises because CRA requirements result in less business for banks and more business for other, less efficient providers. While in Section 1 we assumed that costs of making unprofitable loans are borne by high-income borrowers, banks may shift some of these costs to depositors as well. The costs imposed by CRA, shifted to depositors in the form of lower interest rates paid by banks on deposits, means some individuals will elect to hold their transactions accounts in other places, such as money market mutual funds (MMMFs). Yet using a MMMF for payments purposes can be far less convenient than using a bank account and may result in an inefficient use of the individual's resources. Firms offering MMMFs typically do not have as many branches as banks, nor do they offer widespread ATM networks. Further, such firms often impose a minimum check size requirement on MMMFs, making such accounts more difficult to use for day-to-day purchases. While the consumer is willing to tolerate these inconveniences to earn the higher rate paid by the MMMF, the inconveniences would have been avoided if CRA had not led the bank to pay lower rates.

Furthermore, observers have often argued that banks can be especially effective lenders because they have access to information about borrowers' finances that allows them to better assess creditworthiness. For example, because bank borrowers often hold transactions accounts with the same bank, banks have unique access to information about the financial health of borrowers. But if such transaction deposit relationships are severed because banks lose customers by paying lower interest rates on deposits as a result of CRA, then this information will be lost. Such information is valuable because it lowers the cost of making loan decisions. If lost, the economy's resources are wasted, either because more resources are consumed by making lending decisions or because less creditworthy projects are funded.

Equity

While CRA is intended to benefit low-income communities by ensuring that banks do not overlook them, the law may at the same time impose additional costs on low-income individuals. Some of the costs of such lending will tend to be shifted to depositors in the form of lower interest rates or perhaps higher fees on transactions deposits. In effect, individuals holding transactions accounts are taxed so that more CRA loans can be made.

Such a tax may fall more heavily on low-income and minority individuals. High-income individuals hold a smaller percentage of their wealth in the form of checking account deposits than do low-income, and whites hold a smaller

percentage than do nonwhites (Davern and Fisher 2001, Tables 1 and H). While CRA may produce additional loans for such individuals, it also tends to tax them.

4.   WHY HAS CRA SURVIVED?

Why has CRA survived despite the presence of nonbank competitors who can offer lower prices since they avoid cost shifts inherent in CRA's low-income lending requirements? After all, in a number of other regulated industries, most notably telecommunications and airlines, the entry of unregulated competitors made it difficult to pursue social objectives that require firms to shift costs from one customer group to another.

In the telecommunications industry, regulators were forced to slash telephone-rate subsidies as competition became more intense and deregulatory policies were implemented. Kahn (1990, 343) argues that during the 1980s the prices of long-distance service calling and basic residential service were brought closer to their respective costs. He provides as evidence an increase in the local telephone charges component of the Consumer Price Index (CPI) and a decline in the average price of long-distance calling from December 1983 to December 1989. Local telephone charges rose 19.3 percent in real terms, while average long-distance charges fell 44.5 percent interstate, and 24.1 percent intrastate, respectively, during the period. Temin (1990, 350) cites telephone price data from the CPI for 1977–1987 that show a sharp rise in the ratio of local to interstate telephone rates during the post-AT&T divestiture period of 1983–1987 and concludes that cross subsidies from long-distance to local calls were reduced but not eliminated.

In the airline industry, average airfares fell and fare subsidies diminished when the industry was deregulated in 1978 and prices began to be set in competitive markets. Prior to deregulation, fares on longer and more heavily traveled routes had been too high relative to costs, while fares on shorter and less heavily traveled routes had been too low; in effect, heavily traveled routes subsidized less-traveled routes (Joskow and Rose 1989, 1469). Airfares were declining prior to deregulation and the entry of new competitors, but the decline in real airfares was quicker and larger once the industry was deregulated (Winston 1998, 100). Morrison and Winston (1998, 484) estimate that average airline fares are approximately 33 percent lower in real terms since deregulation. But declines in airfares at airports in smaller communities— those designated as small hub or nonhub airports by the Federal Aviation Administration—were consistently smaller than declines in fares at airports in larger communities during the post-deregulation (1978–1996) period (Morrison and Winston 1997, 43). Despite continued interest in maintaining low rates

at smaller community airports, competition today will not allow the subsidies that could make this possible.

If banking followed the trend in the telecommunications and airline industries, one would expect CRA's influence on bank lending to have declined, but it has not. Two factors may help to explain CRA's resilience. First, banks maintain some competitive advantages compared to their unregulated competitors despite aggressive competition. These advantages allow banks to shift costs to certain bank customers and hold at bay nonbanks, which would otherwise lure bank customers with lower prices and cause CRA's low-income lending requirements to collapse. Second, as a practical matter, CRA low-income lending requirements may not impose large costs. Both factors are further discussed below.

CRA Costs Can Be Shifted If Banks Have Competitive Advantages

Among financial institutions, banks are unique in offering transaction deposits and widespread branch facilities to provide convenient deposit and withdrawal. While there are nonbank alternatives to transaction deposits—money market mutual funds for example—for most individuals the alternatives cannot completely substitute for a bank deposit account. According to the 1998 Board of Governors Survey of Consumer Finances, 90 percent of households have a bank transactions account, while only 16 percent have any kind of mutual fund (Kennickell, Starr-McCluer, and Surette 2000, 11). Because nonbank alternatives offer only imperfect substitutes for bank deposits, banks have greater leeway to charge higher prices for these accounts without incurring a loss of customers to nonbank competitors. As a result, some of CRA's cost of making unprofitable low-income loans can be shifted to holders of transaction accounts with little loss of these customers to nonbank competitors. As long as such shifts are possible, banks have less incentive to lobby for repeal of CRA.

CRA's costs might also be shifted to small-business borrowers. Observers argue that banks may hold a competitive edge in lending to small businesses because of long-standing relationships with these borrowers. The special lending skills that bank loan officers have developed over the years and the credit information that is obtained through long-standing relationships are difficult for nonbanks to acquire. While this competitive advantage may erode, it could be some time before nonbanks are on an equal footing with banks in the quality of lending services they offer.

Table 1 The Growth of Competition in Banking

Banking industry competition became more intense starting in the late 1970s for two reasons. First, the banking industry itself became more competitive as entry barriers were dropped, branching restrictions were removed, and interest rate restrictions fell. Second, banks faced mounting competition from nonbank competitors.

Barriers to Entry Fall

● After the massive bank failures of the Great Depression, fairly strict requirements were imposed on the granting of bank charters.

● The Comptroller of the Currency (Comptroller) denied applications for national bank charters when it determined that existing banks already adequately served markets. State banking authorities operated in a similar manner.

● In October 1980 the Comptroller ended its policy of assessing the competitiveness of markets when making charter decisions.

Branching Restrictions Fall

● Federal and state restrictions on banks' ability to branch were an important feature of the U.S. banking environment throughout the 20th century. Restrictions protected existing banks from competition.

● In addition to restrictions on bank branching, the ability of bank holding companies (BHCs) to operate across state lines was also restricted. The Bank Holding Company Act of 1956 largely prohibited bank holding companies from owning banks outside the BHC's headquarters state, but included a provision allowing ownership of banks across state lines if legislation in the non-headquarters state specifically provided for such rights. No states had such legislation.

● Interstate banking restrictions began to fall when, in 1978, Maine became the first state to pass legislation to allow BHCs headquartered in other states to purchase banks in its state. Other states followed suit, so that by 1990 all but four states allowed cross-border purchases—though interstate branching remained largely prohibited.

● In the early 1980s states began to remove restrictions on in-state bank branching.

● The Riegle-Neal Interstate Banking Act of 1994 largely eliminated restrictions on interstate branching.

Interest Rate Ceilings Fall

● The Banking Act of 1933 prohibited the payment of interest on checking accounts and authorized the Federal Reserve to regulate interest rates on time and savings deposits.

● Interest rate ceilings were initially set well above the interest rates banks were paying.

● Beginning in the mid-1960s the situation changed. Ceilings were set below market rates beginning in mid-1966 and generally remained below market rates until ceilings were eliminated in the mid-1980s. Ceilings were viewed at the time as a means of enhancing the flow of loans to mortgage borrowers. In effect, when market interest rates rose above the ceilings, depositors cross-subsidized mortgage borrowers.

● Bank depositors responded by moving their funds to money market mutual funds (MMMFs), and these funds grew rapidly in the 1970s.

● In March 1980 Congress responded by passing the Depository Institutions Deregulation and Monetary Control Act, which phased out all interest ceilings on savings and time deposits and authorized banks nationwide to pay interest on a new type of checking account, the Negotiable Order of Withdrawal (NOW) account. NOW accounts had previously only been available in certain states.

Table 1 The Growth of Competition in Banking (continued)

Increased Competition from Nonbanks

● Companies offering MMMFs compete with banks for consumer and business savings and checkable deposits. MMMFs gained prominence in the late 1970s. By the end of 1999, MMMF balances amounted to $1.46 trillion. This compares to $4.54 trillion in deposits at banks and savings institutions as of the end of 1999.

● Competition for loans increased as well. Large businesses can borrow by issuing commercial paper, and commercial paper as a source of funds has grown rapidly. Commercial paper outstanding in 1975 was $48 billion; as of the end of 1999 it totaled $1.4 trillion. In comparison, all business loans made by banks and savings institutions summed to $1.0 trillion.

● Nonbank lenders play an important and growing role in serving businesses that are too small to effectively borrow in the commercial paper market. As of 1993, such lending accounted for 35 percent of credit extended to small businesses.

● Nonbanks have made important inroads in consumer lending, accounting for 58 percent of such loans in 1998.

Sources: Board of Governors, *Federal Reserve Bulletin* (2000a), Tables 1.21 and 1.32; Cole and Wolken (1996); Federal Deposit Insurance Corporation (1999); Gilbert (1986); Hahn (1983); Kennickell, Starr-McCluer, and Surette (2000); Robertson (1995).

CRA May Impose Relatively Small Costs

Although CRA has undoubtedly resulted in an overall increase in low-income lending, at many banks the increase may have been relatively small. If CRA has caused only minor changes in bank behavior, banks are at little disadvantage to nonbank competitors because of the Act.

There is some empirical evidence to support the notion that the CRA-induced increase in low-income lending by banks has been fairly small. Evanoff and Segal (1996, 32) find that during the 1980s, growth of low-income mortgage lending by banks lagged growth of middle- and high-income lending. According to Litan et al. (2001, 26), from 1993 through 1999, low-income home purchase loans at institutions subject to CRA rose from 31.5 percent to 35.0 percent of total mortgage loans. Mortgage lending, the focus of CRA lending, accounts for only 15 percent of the average bank's assets, so as a percentage of bank assets the change in the 1990s was fairly small.[18] Moreover, a good bit of this increase seems to have been accounted for by factors outside of pressure brought by CRA regulations, for example by declining costs of lending to low-income borrowers. Such declines may be the result of improvements in the quality of information available to lenders on such

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[18] Since banks often sell a large proportion of their mortgage loans in the secondary market, the proportion of mortgage loans to total assets tends to understate the importance of earnings from mortgage lending for bank profitability.

borrowers. Low-income lending by firms not subject to CRA grew even more rapidly than such lending by banks, suggesting that factors other than CRA have increased the attractiveness of low-income lending. For these nonbank institutions, low-income loans grew by 30 percent from 1993 to 1997 (Gunther 2000, 58).

So why haven't CRA regulations resulted in more low-income lending? In part because regulators must balance two conflicting goals when enforcing CRA: expanding low-income lending and assuring bank safety and soundness. The Act requires that additional loans be made only to the extent "consistent with safe and sound [bank] operation" (12 U.S.C. 2901). Thus, one would expect regulators to be reluctant to push banks too far in providing support for community development. Large increases in low-income lending imply a substantial reduction in profits or even losses for the bank. Because bank regulators are not only responsible for encouraging low-income lending but also for enforcing safety and soundness requirements, they are understandably loath to take steps that could undermine soundness.[19]

5. CONCLUSION

There is broad support for efforts to revitalize distressed low-income communities. A partnership of private and public interests as represented by CRA is considered by many an ideal way to accomplish this social goal. While a direct government transfer program might provide the needed funds, private organizations bring a business acumen honed from experience operating in a competitive marketplace. Furthermore, if private firms can contribute to community development, then government budgets are less burdened. But there can also be serious problems in relying on private efforts mandated by legislation. In the case of CRA, a requirement to expand lending in low-income communities may in some circumstances distort credit markets: projects for which costs exceed benefits are undertaken, and projects are rejected when benefits exceed costs. Further, CRA's costs may result in banks losing business to firms that are less efficient at providing deposit and lending services.

While some would like banks to play a greater role in community revitalization, a more aggressive low-income lending policy that further disadvantages banks relative to unregulated competitors would be hard to sustain. CRA will likely survive in a more competitive economy as a tool to fight discrimination against low-income neighborhoods, but those who expect CRA to play a growing role in community development funding may be disappointed.

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[19] Gunther (1999) discusses the conflict between encouraging low-income lending and promoting safety and soundness. He provides evidence, at least for small banks, of the conflict between enforcement of safety and soundness standards and CRA compliance.

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