

RACIAL, ECONOMIC, AND INSTITUTIONAL DIFFERENCES IN HOME MORTGAGE LOANS: St. Joseph County, Indiana

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ABSTRACT: *Numerous studies have documented racial and economic disparities in the home mortgage market. Almost all of these have been done in large urban areas, many of which have long histories of racial conflict and discrimination. Further, little attention has been paid to institutional disparities, i.e., the ways in which mortgage lenders differ among themselves in their community reinvestment performance. In this study, we profile the home mortgage lending of several institutions doing business in the medium-sized urban area of St. Joseph County, Indiana. We find tremendous differences between lenders, suggesting that bank practices and policies exert a great impact on how well low income and minority neighborhoods and individuals are served. Lender characteristics, such as the legal structure of the institution (e.g., commercial bank, credit union, savings and loan), branch locations, and other factors are associated with these disparities. We conclude by suggesting that several heretofore ignored variables need closer examination.*

Over the last decade, numerous authors have evaluated the existence and degree of racial and economic disparities occurring in the urban home mortgage market. From the early work done by Shlay (1987a, 1987b, 1987c) and Dedman (1988) through the frequently cited study published by the Boston Fed (Munnell, Browne, McEneaney & Tootell, 1992), the results

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are virtually unanimous. Studies across the country show that blacks proportionally apply for fewer loans than whites, yet are rejected more often. Researchers consistently find that white neighborhoods receive many (three to four) times more loans per 1,000 mortgageable structures than do minority neighborhoods. Regression analyses, using various model specifications and data sets, agree that redlining and racial variables show consistent, significant and negative associations with home mortgage lending. This is true even after applying controls for obligation ratios, credit history, loan to value ratios, and property characteristics.

In this study, we make three important contributions to the literature on residential mortgage patterns. Throughout this study "banks" refers generically to banks, savings and loans, savings banks, credit unions, and bank holding companies.

First, almost all studies have focused on aggregate bank performance, i.e., how well do all the lending institutions in an area do at serving the community. Very little attention has been paid to institutional disparities (i.e., the ways in which banks differ among themselves in their community reinvestment performance). As Kim and Squires (1995) put it, most studies of mortgage lending have focused on the demand side (characteristics of borrowers, the properties they intend to purchase, and the surrounding neighborhoods) while paying little attention to the supply side (the characteristics of lending institutions). We examine measures and create indices that allow us to look individually at the community reinvestment performance of several institutions. This allows us to examine whether and why some lending institutions do better than others at serving low income and minority areas and individuals. Wide variations between lenders may suggest that bank practices and policies exert a strong impact on how well different groups and areas are served. We go a step further to see what lender characteristics, if any, seem to be held in common by the more successful and less successful sorts of lenders. In particular, we examine whether the type of institution (e.g. commercial bank, credit union, savings and loan), local or nonlocal ownership, the size of a bank, and locations of bank branches are related to bank performance.

Second, many analyses have focused on racial disparities in denial rates. While denial rates are important, they tell only part of the story. High denial rates may indicate that a lender targets areas and individuals ignored by others, while low denial rates are worth little if few lower income minorities apply. In this analysis, we examine how lenders differ in the amount of business they do with low income and minority neighborhoods and individuals. One cannot make a loan to someone who does not apply and, as we show, some institutions deal more than others with low income and minority applicants.

Third, almost all previous work has been done on large urban areas, many of which have long histories of racial conflict and discrimination. The situation in other types of areas is unknown. To the extent possible, we replicate previous studies to see whether similar results can be found in a moderate sized urban area. Specifically, we examine St. Joseph County, Indiana, which contains the cities of South Bend and Mishawaka.

BACKGROUND

Home Mortgage Legislative Movement

Allegations of redlining, the systemic abandonment of low income and minority neighborhoods by banks, have persisted in US urban centers since at least the late 1960s

(Benston, 1979). In response to these allegations, grassroots community reinvestment groups have organized and pushed for legislative reforms to increase their access to bank credit and to bank lending data. During the 1970s, two main acts were passed in an attempt to increase access to bank loan records and to affirm the responsibilities banks have to local communities and individuals. The primary objective of the 1975 Home Mortgage Disclosure Act (HMDA) is to facilitate the examination of credit flows and of the geographic locations where credit is and is not available. HMDA requires federally regulated commercial banks and thrifts making conventional and government guaranteed (FHA and VA) home mortgage loans within Standardized Metropolitan Areas (SMAs) to disclose the geographic location of each loan originated by census tract.

The Community Reinvestment Act (CRA), formally Title VIII of the Housing and Community Development Act of 1977 (91 Stat. 1111), states that financial institutions have a “continuing and affirmative obligation to help meet the credit needs of the local communities in which they are chartered...consistent with the safe and sound operation of such institutions” (91 Stat. 1147). The community includes minority and integrated neighborhoods as well as all-white neighborhoods. The Act further states that an institution’s record of meeting credit needs includes low and moderate income neighborhoods (91 Stat 1147).

HMDA and CRA are path breaking legislative acts. Unfortunately, during the 1980s, legislative authority failed to translate them into effective monitoring. Public reports of lax enforcement, compelling evidence of lending discrimination in major cities, and a multi-billion dollar taxpayer bailout of the savings and loan industry all contributed to grassroots support for a stronger community reinvestment movement. Hence, key legislative reforms were made in 1989. In particular, HMDA data requirements were extended. HMDA now requires lending institutions to report not only the geographic location of originated loans as in the past, but also to report the gender, race and income of all applicants who are granted and/or denied home mortgage refinancing, home improvement loans, or conventional, FHA, or VA home mortgage loans (Canner & Smith, 1991, 1992). These amendments greatly strengthened the quality of CRA information and HMDA data available to community reinvestment researchers (Guskind, 1989).

The National Scene

Using information from HMDA, CRA, and other sources, various authors have documented that whites and blacks experience different results when it comes to obtaining a home mortgage. Finn (1989) found that, even after controlling for income and other factors, whites in Boston received three times as many residential loans per mortgageable housing unit as blacks. In her study of Baltimore, Shlay (1987a) concluded that racial composition played a large and independent role in explaining disparities in residential mortgage distribution among neighborhoods. Dedman (1988) discovered that between 1981 and 1986, Atlanta financial institutions made five times as many home loans per 1,000 housing units in white neighborhoods as in black neighborhoods having similar income levels. Studies of Chicago (Brady, Dubridges, & Klepper, 1980; Dunham, 1991; Peterman, 1990; Peterman & Sanshi, 1991; Shlay, 1986, 1987b, 1988; Shlay & Freedman, 1986), Detroit (Blossom, Everett, & Gallagher, 1988), Los Angeles (Dymski & Veitch, 1991; Dymski, Veitch, & White, 1990), and New York (Williams, Brown, & Simmons 1988; Bartlett, 1989; Lueck, 1992; Caskey, 1992) produced similar findings.

Many regard the October 1992, Federal Reserve Bank of Boston's "Mortgage Lending in Boston: Interpreting HMDA Data" (Munnell, Browne, McEneaney, & Tootell, 1992) as the most persuasive study of racial discrimination in residential lending. The authors of the study attempt to address the complaints leveled at earlier HMDA data analyses and their failure to include all relevant variables regarding a bank's loan acceptance/denial decision. Rather than using HMDA data alone, these researchers supplement HMDA data with actual loan application data from Boston area financial institutions. They conclude that even if two mortgage applicants are identical financially, a minority applicant is 60% more likely to be rejected than a comparable white applicant. This means that 17% of Hispanic or black residential mortgage applications, instead of 11%, would be denied a mortgage loan even if the minority applicant had the same obligation ratios, credit history, loan to value ratios, and property characteristics as a white applicant (Munnell, Browne, McEneaney, & Tootell 1992).

As with most pathbreaking or landmark research, this one has been the target of both criticism and praise. James H. Carr and Isaac F. Megbolugbe (1993, 1994) review and refute the critiques of several of the major criticisms of the Boston Fed study. In addition, two of the original Boston Fed researchers, Browne and Tootell (1995) respond to their critics in a recent article. Criticisms of the original study are of three types: critiques based on default rates, charges of flawed model specification or omitted variables, and charges of flawed data.

Criticism based upon default rate evidence has been the most persistent charge against the Boston Fed Study. Brimelow and Spencer (1993), Brimelow (1993), and Becker (1993) all use average mortgage default rate data to claim that banks do not discriminate. They contend that because default rates among whites and blacks are similar in Boston, lenders must be acting in an impartial manner. These authors contend that if banks were discriminating against creditworthy minorities, observed minority default rates would be lower than white default rates.

Browne and Tootell (1995) posit that this line of argument is flawed for several reasons. First, the relationship between default rates and what bankers really worry about, expected profitability, is indirect at best. Second, critics assume that mortgage market discrimination will create a pool of minority applicants who on average are less likely to default than a white pool of applicants. This will not be true if discrimination is random in the sense that some loan officers simply do not like Hispanic or black applicants or the way in which they dress, act or speak. This kind of discrimination would lead to loan rejections among both highly qualified and less qualified loan applicants. Third, critics must assume that the underlying default probability distributions are the same among whites and minorities. Otherwise an average white default standard applied to a minority applicant will not create an acceptance pool that has a lower average default risk. This assumption is unlikely to be true, given the empirical evidence, and confuses the concepts of marginal applications and average applications. Looking at averages of group default rates mixes together different applicants, different characteristics, and different default rates. Therefore, they reveal little about how individual applications within those distributions are treated (Browne & Tootell, 1995, Carr & Megbolugbe, 1993).

The possibilities that a model omits relevant variables and/or includes dependent variables that inaccurately reflect their relationship to the dependent variable are potential

problems for any regression analysis. The Boston Fed study has been criticized by Zandi (1993) for ignoring the presence of another variable, the subjective assessment of credit history, when calculating an applicant's creditworthiness. Carr and Megbolugbe (1993, p.7) respond that the variable Zandi wants included is itself "tainted by discrimination". Horne (1994a) asserts that the variables, funds available for closing and the dollar amount of gifts received, are omitted. These were collected under slightly different guises. When tested neither applicants' liquid assets, nor the presence of a gift or grant, was found to be significant at the 5% level. Criticisms related to specification errors also are unpersuasive. The appendix of the Boston Fed study includes many different model specifications that address the potential specification problems posed by Horne (1994a, 1994b). Yezer, Phillips, and Trost (1994) assert that loan terms and mortgage denial are determined simultaneously through a process of negotiation. Browne and Tootell (1995, p.63) respond that "A truly simultaneous determination of loan terms and mortgage denial seems doubtful on both conceptual and econometric grounds."

Liebowitz and Day (1993) assert that the Boston Fed's data set is filled with many typographical errors. Horne (1994a, 1994b) makes similar charges. In response to these charges Carr and Megbolugbe (1993, 1994) reevaluated the Boston Fed's model. After a thorough cleaning of the data set, they found that the errors in the data set did not bias or eliminate the main results of the original study. Minority applicants were rejected about 57% more often than comparable white applicants.

In sum, the defenses of the Boston Fed article put forward by Browne and Tootell (1995) and by Carr and Megbolugbe (1993, 1994) address each of the criticisms leveled at the original article. As a result, the Boston Fed study (Munnell, Browne, McEneaney, & Tootell, 1992) in the face of severe and sometimes virulent criticism, deserves its status as the definitive study concerning the existence of discrimination in mortgage lending.

Previous National Research

Existing research has provided powerful documentation of racial disparities in home mortgage lending. Still, there are several limitations to these studies. Most studies have focused on large urban areas, many of which have long histories of racial conflict and discrimination. The situation in other parts of the country has not been carefully explored. Even more importantly, studies have paid little attention to variations in lending between different types of financial institutions. Do all types of lenders tend to do equally well (or poor) at serving low income neighborhoods and groups? If not, what are the characteristics of the lenders that do better? There are at least three reasons for wanting to know whether and why lending institutions differ in their community reinvestment performance:

First, simply finding that an individual's race or a census tract's racial composition is correlated with the likelihood of a loan being approved or denied is not proof of overt discrimination. There are other plausible explanations. Race may be a proxy for other economic variables such as employment record or credit history. Unfortunately, these variables are rarely available to researchers because federal law does not require that banks disclose this information. Only the Munnell and associates (1992) study is exempt from this criticism, but even it looked at only one city. Furthermore, analyses usually have nothing to say about how discrimination in other markets (e.g., the labor market) gets carried through to the home mortgage market or how the actions of realtors, homebuyers, home

sellers or mortgage insurance companies may influence patterns of mortgage credit allocation. Similarly, the racial composition of a neighborhood may serve as a proxy for the riskiness of a loan.

However, if some financial institutions are able to make loans to low income and minority neighborhoods and individuals while others do not, these criticisms hold less weight. If wide variation in denial rates and shares of loans to low income and minority neighborhoods exist, one must assume that these unmeasured influences have a larger effect on some institutions than on others in order for the criticisms to remain credible. The existence of widespread variation would suggest that lender discretion plays an important role in mortgage market outcomes and should not be ignored because of less than perfect data disclosure on the part of financial institutions.

Second, there is a growing concern that commercial banking industry consolidation will lead to increases in average financial institution size and increase the number of bank main branches located afar. These trends, in turn, may adversely affect a lender's likelihood of denying a mortgage application and/or its effectiveness in originating loans to low income and minority individuals and neighborhoods. As Shlay and Goldstein (forthcoming) note, "It has been hypothesized that as institutions become more massive and international in scope, they will devote fewer resources to local communities, particularly within those communities where they have the fewest ties and experience." Campen (1993, p.239) further argues that:

it seems reasonable to suppose that when decision making power is concentrated in distant headquarters, local communities will find banks less knowledgeable about local circumstances, less concerned with solving local problems, and, especially, less susceptible to the local organizing campaigns that have been vital in bringing about agreements for improved CRA performance.

However, those advocating the further reduction of geographic barriers to banking and supporting greater banking industry consolidation also seem to have persuasive arguments. They contend that as loan and deposit bases become more diversified, overall banking risk is decreased and the stability of the financial system as a whole is enhanced. Furthermore, freeing up the market geographically leads to increased competition, increased services, improved credit availability, and a more efficient allocation of financial resources (Mengle, 1990; Evanoff & Fortier, 1986). Also, larger institutions may have greater expertise in marketing to low income and minority areas and individuals and more resources to devote to them. As a result, the economy as a whole, including small businesses, minority neighborhoods, and taxpayers, are all better off with fewer, larger financial institutions.

In addition, the enormous increase in mergers in the 1980s, combined with better information from an improved CRA and HMDA, have provided opportunities for community groups to enhance community reinvestment performance through challenges to bank mergers and increased opportunities for federal financial regulatory agencies to evaluate lenders' community reinvestment performance. Community groups have successfully challenged a local bank's attempt to acquire or be acquired by another bank or bank holding company based upon CRA grounds. Furthermore, the federal financial regulatory agencies have had a greater number of merger applications requiring examination on CRA grounds

prior to approval. As a result, banks must either negotiate in good faith with community groups to increase lending in low income and minority neighborhoods or risk that their merger applications be rejected. The National Community Reinvestment Coalition (NCRC) estimates that, as of May 1996, banks and savings and loans have made CRA commitments totalling \$130 billion since the late 1970s. These commitments reflect agreements reached with community groups and/or voluntary pledges.

Participants on each side of this debate seem to have well reasoned foundations for their assertions regarding the impact of banking industry consolidation on community reinvestment performance. Unfortunately, the empirical evidence supporting either position is extremely limited.

Kim and Squires (1995) note a third reason why supply side (lender) characteristics may be related to community reinvestment performance. Different types of institutions have different interests. Commercial banks are involved in many sorts of activities. Mortgage lending is not their main line of business. Hence, banks are more likely to reject applications because of their limited commitment to mortgage lending. Mortgage lending is far more important to savings and loans. Because mortgage loans constitute a higher share of their lending activity, Kim and Squires hypothesize that savings and loans will review applications more carefully (hence avoiding racial bias) and will be more willing to work with marginal applicants.

We can think of several other reasons why the type of institution may be important. Different types of institutions have different types of legal obligations, report to different federal agencies, and may serve different types of clientele. For example, credit unions place restrictions on membership and may be especially willing to take risks on behalf of their membership. Certain types of mortgage companies (which we will refer to as “consumer finance corporations”) target higher risk groups and offer them higher interest loans. Depository institutions (e.g., commercial banks) have greater legal CRA obligations than nondepository institutions (e.g., mortgage companies). Like thrifts, mortgage institutions and credit unions may be more heavily dependent on mortgage lending than commercial banks. Hence, it seems reasonable to investigate whether the legal form of the lender (commercial bank, mortgage company, savings and loan, etc.) is related to its community reinvestment performance.

Kim and Squires also argued and found that the racial composition of the lender’s labor force was related to the approval rate for African-American borrowers. Racial minorities may feel more comfortable in a financial institution where nonwhite employees are visible. Even if the case is not handled by an African-American loan officer, the presence of African-American officers may create peer pressure for loan approval from other officers.

We suggest that similar arguments can be made for branch locations. Convenient locations are more likely to attract customers to a bank. Further, the fact that a lender has a branch location in a low income or minority area may give it a better understanding of that area and the people in it, hence improving its lending and marketing practices. If nothing else, the presence of branch locations in an area suggests that the lender is motivated to do business there. Thus, lenders that have a presence in low income and minority neighborhoods are likely to do more business there than lenders that do not.

DATA AND METHODS

St. Joseph County is located in the North Central part of Indiana, about 100 miles east of Chicago. Its two largest cities are South Bend (population 110,000) and Mishawaka (population 40,000). The South Bend-Mishawaka MSA had a total population of 247,052 according to the 1990 Census. By race, approximately 87.8% of residents are white and 12.2% are nonwhite. The corresponding national averages are 80.3% and 19.7%. In this respect, the South Bend-Mishawaka SMA is probably more representative of the US as a whole than many of the larger cities previously studied.

Our study of St. Joseph County originally began when a community group asked the first author of this paper to analyze the home mortgage lending records of local banks. After analyzing only a few banks, it became apparent that area institutions differed dramatically in the extent to which they served low income and minority areas and individuals. Therefore, we decided to undertake a much more systematic data collection and analysis effort. Specifically, we gathered the following types of data:

HMDA Loan Application Registers

Starting in 1990, banks were required to provide information on every home mortgage application they received. The information included the type of loan (conventional, FHA, or VA), the requested amount, the final disposition of the application (e.g., approved, denied, withdrawn, not accepted), the census tract in which the desired property was located, and the income, race, and gender of the applicant(s). Complete records for the county were purchased from the Federal Financial Institution and Examination Council for 1990, 1991, and 1992. Following the practice of other researchers (Kim & Squires, 1995), we included only applications for owner-occupied homes that were either approved or denied.

Census Tract Data

The HMDA data sets also include some information on census tracts, while other information was gathered directly from published census reports for the county. There are 69 census tracts in St. Joseph County. Information available for each tract includes the median income of the tract, the racial composition of the tract, and the percentage of adults having only a ninth grade education or less.

Lending Institution Data

Again, the HMDA data includes some information on banks. In particular, HMDA lists the location of the parent institution, making it possible to see whether the bank is locally headquartered or not. In addition, simply by looking at the lender's name or by drawing on other knowledge we had, we could determine whether an institution was a commercial bank, credit union, savings and loan, or mortgage company. Also, a few lenders that are technically mortgage companies were classified as "consumer finance corporations". Such lenders tend to target groups and areas ignored by others, but also charge much higher interest rates. We used *Moody's Bank and Finance Manual* and *McFadden's American Financial Directory* to look up the amount of assets held by lenders as of 12/31/92. Data

from the previous 12 months were used for two very small lenders that went out of business before December 1992. In a few cases, when we could not locate information on a bank or were otherwise unsure how to code it on a particular variable, a call to the bank itself produced the needed information. While 56 different banks received applications for home mortgages during the period 1990-1992, 17 institutions made about 96% of the actual loans.

Information on branch locations, originally gathered for a separate project, also was used here. Each lender identified in the HMDA data was looked up in the 1995 South Bend phone book. The address of each lender's main branch and any branch locations were recorded. We then used the Census Bureau's TIGER/Census Tract Street Index, along with census maps, to identify the census tract in which each office was located. Lenders were classified as having either (1) no branches in the county, (2) some branches but none in low income areas, or (3) at least some branches in low income areas. We originally intended to indicate whether a lender had branches in heavily minority areas, but we did not find a single branch office located in one of the county's six minority tracts. We referred back to phone books from 1990 to determine whether changes in branch locations affected the coding of any institution.

A few clarifications regarding the data are in order. In our analyses (and in the published HMDA reports), a census tract is classified as "low to moderate income" if the median income of the tract is 80% or less of the county median income. In St. Joseph County, 23 of the 69 census tracts are classified as low income and these tracts have about one-fourth of the county's population and occupied housing units. Similarly, applicants are classified as low income if their income is less than 80% of the county median. For our purposes, we defined a minority tract as one in which 50% or more of the population was non-white. Six tracts, with about 5% of the county's population and 6% of the housing units meet this definition. The six minority tracts are 10, 19, 20, 21, 23, and 29. All six of the minority tracts are also low income tracts.

Several caveats are noted concerning these data:

- Like most other studies, we lack information on important variables such as the credit and work histories of individual applicants and property characteristics. However, the few studies that do have such variables suggest that, even after these are controlled, variables like race and characteristics of the census tract continue to be highly significant. Further, while omission of variables may cause aggregate bank performance to appear worse than it really is, it is much less likely that such variables can account for apparent wide differences between banks. For example, if two banks are direct competitors and one does a great deal of business with low income areas while another does not, it is hard to see how something like individual credit histories could account for this.

- Another important omitted variable is the interest rate charged. Some of the lenders that seem to do the "best" job of serving low income and minority neighborhoods and individuals (e.g., consumer finance companies) probably do so at a price, a much higher interest rate than is charged by others. The cost of obtaining credit ideally should be considered when evaluating a bank's overall community reinvestment performance, but we are not able to do so here.

- The data only cover the period 1990-1992. Several banks now claim that their community reinvestment performance has gotten much better. Two of the banks that had the

least impressive records for serving low income and minority areas and individuals (1st Source and Norwest Bank) during 1990-1992 apparently did dramatically better in later years. If such improvements have occurred widely, they may reflect the influence of community groups that have pressured and negotiated with area banks for changes in their lending practices. Of course, other explanations, such as the change in Presidential administrations, CRA enforcement, and changes in bank personnel may also be plausible.

- We focus only on owner-occupied home mortgage loans. Home improvement loans, small business loans, and other investments in community development should be considered when looking at a bank's overall community reinvestment performance.

- While more than 8,000 home mortgage loans were made during this period, only a relative handful of lending institutions were involved. At the same time, the tremendous variability between even these few institutions strongly suggests the utility and need for examining banks separately. The scarcity of institutions involved makes it difficult to determine why the variability exists and it is possible that a few large atypical lenders skew the results. While we will examine the apparent effects of such things as bank type, bank size, local ownership, and branch locations, we caution that these results must be regarded as tentative and that a much larger sampling of banks across the nation is called for.

Method of Analysis

The analysis is divided into three parts. First, we provide descriptive analyses of the community reinvestment performance of leading lenders in the area. These analyses illustrate the significant differences that exist among area lenders.

Second, we examine what characteristics are shared in common by those lenders that do the largest share of their business with low income and minority neighborhoods and individuals. This is perhaps the most unique part of our analysis because it offers some ideas as to what types of lenders are most effective at attracting low income and minority applicants.

Third, we use multivariate logistic regression to simultaneously examine how characteristics of individuals, neighborhoods, and lenders affect the probability of a loan application being denied. As with other studies, this will enable us to see whether, after controlling for income, the race of applicants and the racial composition of their preferred neighborhood are associated with loan denial rates. Unlike most other studies, this analysis will let us examine whether and how lender characteristics are related to loan denial rates.

RESULTS

Descriptive Analyses of Individual Lenders

Table 1 provides an overview of the characteristics of the major home mortgage lenders in St. Joseph County. According to HMDA records, 56 institutions made almost 8,500 home mortgage loans between 1990 and 1992. This figure is low because not all institutions reported for all three years. In particular, Waterfield Mortgage was not required to file in 1990, hence its loan total is probably underreported by several hundred loans. Waterfield is the residential lending arm of Indianapolis based Union First Savings Bank. However,

Characteristics

Characteristics		Demographic Characteristics						Overall Lending	
		Type of Institution	Ownership	Size	Branches	Loans Originated	Denial Rate	CMIRP	
Name									
field/UFSB of Indiana	Mortgage company	In state	Large	Some LowMod	1330	5.5%	64.1		
corp Mortgage	Mortgage company	Local	Small	Some LowMod	1263	3.1%	62.5		
source Bank	Bank	Local	Large	Some LowMod	947	12.9%	21.9		
d Mortgage	Mortgage company	In state	Medium	Some LowMod	834	5.8%	63.0		
y American Bank & Trust	Bank	Local	Medium	Some LowMod	672	11.7%	42.2		
ard Federal	Savings and loan	Out of state	Large	Some LowMod	560	8.8%	44.8		
waka Federal Savings	Savings and loan	Local	Medium	No LowMod	546	8.4%	26.0		
ty/Ameritrust	Bank	Out of state	Large	Some LowMod	501	32.2%	46.9		
dent Financial Corp	Mortgage company	In state	Small	No LowMod	320	0.9%	65.1		
est Mortgage	Mortgage company	Out of state	Large	Some LowMod	270	6.9%	41.7		
ntage Mortgage	Mortgage company	Out of state	Large	Some LowMod	201	13.7%	71.4		
ski Federal S & L	Savings and loan	Local	Small	Some LowMod	178	3.3%	65.1		
na Federal Bank	Savings and loan	In state	Medium	No LowMod	139	7.9%	31.8		
est Bank of Indiana	Bank	Out of state	Large	Some LowMod	126	5.3%	21.9		
thers Credit Union	Credit union	Local	Medium	Some LowMod	111	9.0%	84.4		
Mortgage	Mortgage company	Out of state	Large	Some LowMod	59	4.8%	53.1		
ican General Finance	Consumer finance	Out of state	Large	No LowMod	34	61.4%	59.9		
her lenders					380	30.8%			
b lending institutions					8471	11.1%			

17 lenders accounted for almost 96% of all the loans that were made. We will pay particular attention to these top 17 performers (listed in the order of the number of loans they made). Of these, the top eight, each of whom made 500 or more loans, may be of particular interest. While some of the smaller banks aim for "niche" markets (e.g., Teachers Credit Union targets teachers and their families, while some of the other small banks are concentrated in specific areas of the county), the larger institutions tend to do business countywide and generally are direct competitors with each other in the residential lending market. (The one major exception is Mishawaka Federal Savings, which primarily does business in the predominantly white city of Mishawaka.)

Of the top 17 lenders, seven were mortgage companies, four were banks, one was a credit union, one was a consumer finance company, and the other four were savings and loans. Six were owned locally, four others were owned in-state, and the other seven had out-of-state ownership. In terms of overall assets, three banks were small (having assets of less than \$100 million), five were medium sized (assets between \$100 million and \$1 billion) and the other nine were large (assets greater than \$1 billion). Assets are based on the size of the lender's parent company, and are not limited to assets held only in St. Joseph County. Hence, the largest lenders, in terms of assets, need not have the largest shares of the St. Joseph market. Waterfield Mortgage made the most loans of any lender in the area, followed by Trustcorp Mortgage and 1st Source Bank.

All 17 of these lenders have branches in the county and most also have at least one branch in a low income area of town. This is primarily because many lenders have their main office in downtown South Bend, which is itself a low income area and is surrounded by other low income areas.

Denial rates vary dramatically between lenders, ranging from almost zero to as high as 61%. Overall, a little over 11% of all home mortgage applications were denied. As noted before, we follow the common practice of only including applications that were either approved or denied. It should be noted that withdrawal rates (not shown) also differ substantially between lenders. Countywide, a little over 6% of all home mortgage loan applications are withdrawn. However, some lenders have much higher withdrawal rates. In particular, Trustcorp, which has one of the lowest denial rates, 3.1%, also has the highest withdrawal rate, 18%. (Trustcorp accounts for more than 41% of all the loan applications in the county that were withdrawn.) Because the decision to withdraw a loan application can be affected by many factors beyond the lender's control, most researchers pay little attention to withdrawals. The tremendous variability between banks, however, suggests that withdrawals may deserve closer attention. In particular, it could be important to know whether some lenders encourage withdrawals to keep their denial rate low. For our own part, we did separate analyses in which withdrawals were treated the same as denials. This had little effect on our major conclusions, although it did change the relative standings of some banks on some of our measures.

The last column of Table 1 presents a Community Mortgage Relative Performance Index (CMRPI) score for each bank. This is based on the information in Tables 2 and 3 concerning loans to low-income and minority areas and individuals. The higher the score, the better the lender does in making loans to low income and minority neighborhoods and individuals.

s to Census Tracts

Bank Name	Low Income Census Tracts			Minority Census Tracts		
	% of Apps.	Denial Rate / Diff.	% of Loans	% of Apps.	Denial Rate/ Diff.	% of Loans
field/UFSB of Indiana	15.7%	10.4%	14.9%	1.8%	8.0%	1.7%
corp Mortgage	16.6%	5.6%	16.2%	1.6%	14.3%	1.4%
ource Bank	9.9%	31.5%	7.8%	1.6%	41.2%	1.1%
d Mortgage	14.4%	7.1%	14.1%	3.1%	3.7%	3.1%
y American Bank & Trust	15.1%	20.9%	13.5%	6.4%	24.5%	5.5%
ard Federal	15.1%	21.5%	13.0%	2.4%	26.7%	2.0%
awaka Federal Savings	3.0%	16.7%	2.7%	0.3%	0.0%	0.4%
ty/Ameritrust	18.9%	43.6%	11.4%	2.6%	63.2%	1.4%
edent Financial Corp	10.2%	3.0%	10.0%	1.2%	0.0%	1.3%
est Mortgage	10.3%	13.3%	9.6%	1.0%	33.3%	0.7%
ntage Mortgage	27.9%	18.5%	26.4%	2.1%	20.0%	2.0%
ski Federal S & L	18.5%	2.9%	18.5%	1.1%	0.0%	1.1%
na Federal Bank	7.3%	9.1%	7.2%	1.3%	0.0%	1.4%
est Bank of Indiana	6.0%	37.5%	4.0%	0.0%	0.0%	0.0%
hers Credit Union	27.0%	21.2%	23.4%	8.2%	0.0%	9.0%
Mortgage	11.3%	14.3%	10.2%	1.6%	0.0%	1.7%
ican General Finance	44.3%	71.8%	32.4%	6.8%	66.7%	5.9%
her lenders	14.0%	53.2%	9.5%	2.4%	53.8%	1.6%
ending institutions	14.4%	20.7%	12.9%	2.3%	24.4%	2.0%

Table 2 examines bank lending in the low income and heavily minority areas of town. Three types of information are presented:

1. The percentage of all its applications that a bank received from such areas. For example, 27% of the home mortgage loan applications that Teachers Credit Union received were from low income areas. 1st Source Bank, on the other hand, received only 9.9% of its applications from low income areas.

2. The lender's denial rate for such areas, as well as the difference between the denial rate for the area and the lender's overall denial rate. For example, NBD Mortgage denied 14.3% of the applications it received from low income areas, which was 9.4 percentage points higher than its overall denial rate of 4.8% (Table 1). Presenting the numbers this way makes it possible to see whether, compared to other lenders in the area, a bank has relatively high or low denial rates. It also makes it possible to see whether the lender treats applications from particular areas differently than applications in general.

3. The percentage of a bank's loans that were made to low income and minority census tracts. For example, American General Finance did almost a third of its business in low income areas, while Mishawaka Federal Savings made only 2.7% of its residential mortgages there.

A relatively low percentage of applications from an area may indicate that the bank does not target that area or that if it does, its marketing lacks effectiveness (or at least is not as effective as its marketing elsewhere). Denial rates are more difficult to interpret. A high denial rate could mean that a lender is particularly unfriendly to individual applications from certain areas (especially if the denial rate for an area is much higher than the bank's overall denial rate). However, it could also mean that the lender, perhaps because of its marketing programs, effectively attracts many higher risk applicants from an area. Hence, a high denial rate, if combined with relatively large numbers of applicants from an area, could still result in a large number of loans being made in that area. However, a high denial rate combined with a low share of applications from these areas would result in relatively few loans going to these areas.

Table 2 and Fig. 1 show that lenders differ substantially in the amount of business they do in low income areas of town. Some make less than 6% of their loans there, while a few do a fourth or more of their business in such areas. As Table 2 and Fig. 2 show, this differential reflects the variability in the applicant pool and in the denial rates. Teacher's Credit Union and Advantage Mortgage attract relatively large numbers of applicants from low income areas and have about average denial rates. Hence about one-fourth of their business comes from the low income parts of town. American General Finance has by far the largest percentage of applicants from low income areas. Hence, despite high denial rates, it still does almost a third of its business there. Similarly, Society combines above average application and denial rates to produce an above average share of the low income area market. Banks which do the least business in low income areas have few applications from such areas (e.g., Indiana Federal Bank, Mishawaka Federal Savings) and/or above average denial rates (e.g., 1st Source, Norwest Bank).

To view these numbers another way, about one-fourth of St. Joseph County's population and housing units are located in low income areas, yet such areas receive only about 13% of all home mortgage loans. This low total reflects the fact that fewer than 15% of all home mortgage applications come from low income areas, plus the denial

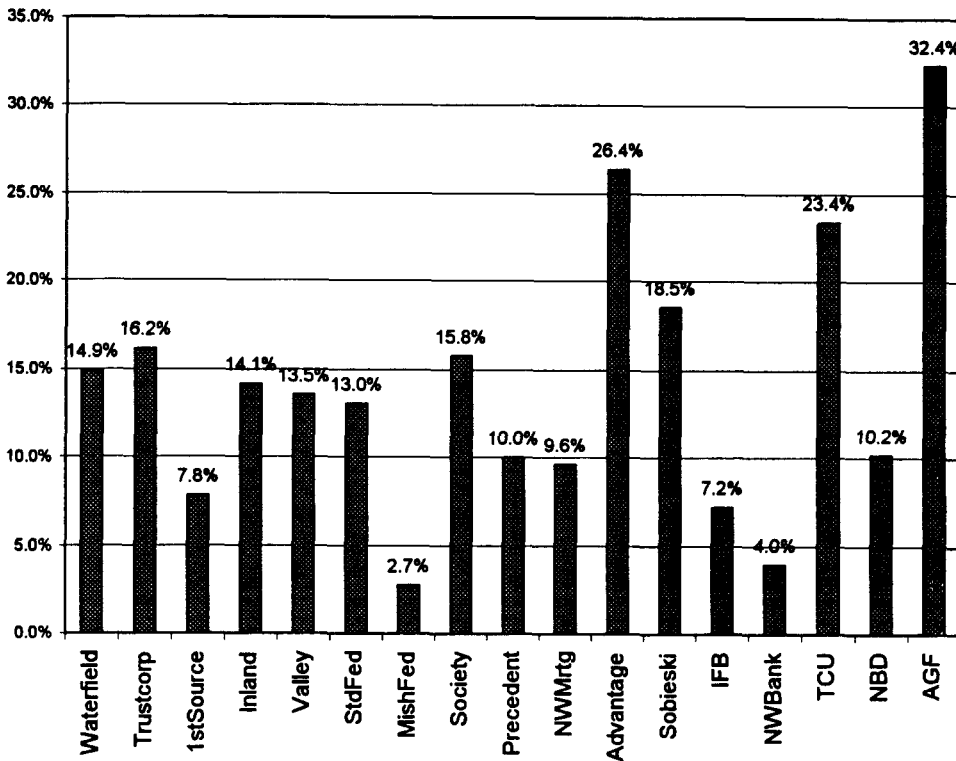


FIGURE 1
Percentage of All Home Mortgage Loans That Go to Low Income Areas

rate for low income areas (20.7%) is almost double the overall denial rate (11.1%, as shown in Table 1).

That low income areas are underrepresented in the number of loans received may or may not be understandable. However, it is difficult to understand why there should be so much variability between banks, particularly when institutions that seem to be direct competitors are compared. For example, among the eight largest lenders, there is a 6:1 differential in the amount of business done in low income areas (2.7% by Mishawaka Federal on the low end, 16.2% at Trustcorp on the high). Among the top three lenders, the differential is about 2:1 (7.8% at 1st Source v. 16.2% at Trustcorp).

The second part of Table 2 examines loans to minority census tracts. These are the six census tracts which are 50% or more nonwhite. They hold about 5% of the county's population and 6% of its housing units. As the last line of the table shows, relatively few applications are received from such areas, applications that are received are twice as likely to get rejected (24.4% compared to the overall denial rate of 11.1%), and only 2% of loans made go to these parts of the county. Two of the smaller lenders, American General Finance and Teachers Credit Union, do a far higher share of their business in minority areas than most other lenders. Even among the other lenders, there is more than a 10:1 dif-

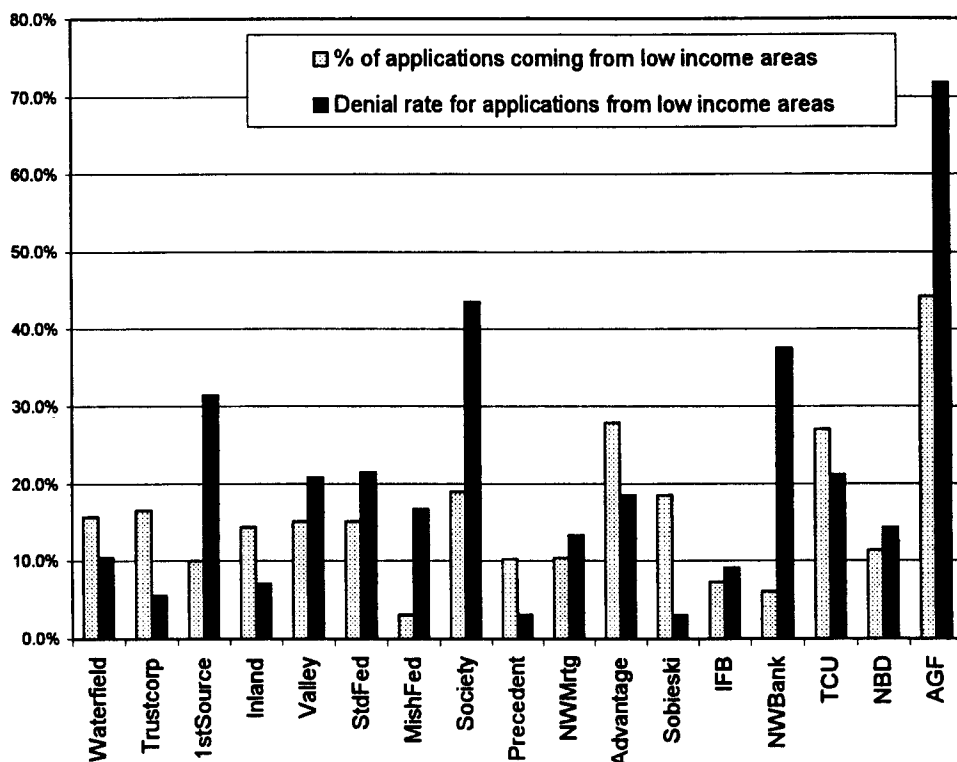


FIGURE 2
Application and Denial Rates for Low Income Areas

ference in the amount of business done in minority areas. These differentials are the product of radically different application and denial rates.

Table 3 shifts the focus from areas to individuals. The last row of the table shows that about one-third of all loan applications come from low income individuals. However, because the denial rate is much higher for this group (18.5% versus the overall rejection rate of 11.1%), about 30% of the loans actually made go to low income individuals. American General Finance and Teachers Credit Union both made about one-half or more of their loans to this group. The other lenders do as little as 9.5% (Norwest Bank) to as much as 40.9% (Society/Ameritrust) of their business with low income individuals. Among the eight largest lenders the differential is more than 2:1 between banks, and among the three largest, the differential is about 1.7 to 1.

Finally, the last part of Table 3 examines loans to black applicants. Blacks account for about 9% of the county's population, yet they receive less than 3% of the home mortgage loans. Relatively few blacks apply for loans (3.2% of the total) and those who apply are more than twice as likely as the population as a whole to have their application denied. As before, there is tremendous variability between lenders. One bank (Indiana Federal) reported no loans to blacks during this period, while another (Teachers Credit Union) did

Lending to Individuals

Bank Name	Low Income Applicants			Black Applicants		
	% of Apps.	Denial Rate/ Diff.	% of Loans	% of Apps.	Denial Rate/ Diff.	% of Loans
Bank of America	35.1%	7.7%	34.3%	5.1%	18.1%	4.4%
Bank of Montreal	33.1%	2.6%	33.3%	2.8%	2.8%	2.8%
Bank of the West	22.5%	21.2%	20.4%	3.8%	43.9%	2.4%
Bank of the South	35.8%	3.8%	36.6%	2.4%	9.5%	2.3%
Bank of the Midwest	24.7%	18.6%	22.8%	1.8%	28.6%	1.5%
Bank of the South	31.1%	14.1%	29.3%	3.3%	30.0%	2.5%
Bank of the South	20.5%	18.9%	18.1%	0.2%	0.0%	0.2%
Bank of the South	52.1%	46.8%	40.9%	3.4%	40.0%	3.0%
Bank of the South	39.9%	0.8%	40.0%	2.5%	0.0%	2.5%
Bank of the South	27.2%	12.7%	25.6%	4.5%	15.4%	4.1%
Bank of the South	37.8%	11.4%	38.8%	5.2%	25.0%	4.5%
Bank of the South	40.2%	6.8%	38.8%	2.2%	0.0%	2.2%
Bank of the South	21.9%	15.2%	20.1%	1.3%	100.0%	0.0%
Bank of the South	12.0%	25.0%	9.5%	0.8%	0.0%	0.8%
Bank of the South	50.8%	12.9%	48.6%	13.1%	12.5%	12.6%
Bank of the South	21.0%	15.4%	18.6%	6.5%	25.0%	5.1%
Bank of the South	76.1%	67.2%	64.7%	9.1%	87.5%	2.9%
Bank of the South	39.0%	52.8%	26.6%	1.1%	16.7%	1.3%
Bank of the South	33.0%	18.5%	30.3%	3.2%	23.7%	2.7%

almost 13% of its business with blacks. Some banks did not turn down any of the (generally few) black applications they received, while others turned down more than half of them.

Tables 2 and 3 show that there is a great deal of variability between banks on these eight different share and denial measures. However, there is also much variability within a bank across measures. Some banks do much better on some variables than on others. For example, Valley American Bank is one of the leading banks in making loans to minority areas (Table 2). However, it is well below average in the number of loans it makes to black individuals (Table 3). Also, some banks which make many loans to low income and minority areas and individuals have high denial rates, suggesting that those banks might be able to make even more loans than they do.

To get a rough idea of a bank's overall performance, we created the Community Mortgage Relative Performance Index (CMRPI). Our procedure was as follows:

- The 17 lenders were ranked on the percentage of loans made to low income areas, minority areas, low income individuals, and blacks. They were also ranked on the corresponding denial rates.
- The rankings were summed. Denial rates were weighted only half as heavily as shares. This is because of the ambiguous nature of denial rates. While a lower denial rate may be preferable, a high denial rate does not necessarily mean that the lender is being "unfriendly". It could mean that the lender attracts higher risk applicants.
- The summed rankings were converted to a scale ranging from 0 to 100. A score of zero indicates that the lender had the weakest performance of every lender in every category. A score of 100 indicates that the lender finished first in every category. Hence, the higher the score, the better the overall performance.

Note that, as the name implies, the index only measures performance relative to the other major lenders in the area. A high score could indicate that the bank was the best performer in a bad lot. Conversely, a low score could indicate a solid performance if all lenders in the area are doing well in terms of loans made to low income and minority areas and individuals. The key strength and weakness of the measure is that it avoids saying anything about absolute performance. Banks can argue about how many loans should go to low income and minority areas and individuals. It is much more difficult for them to argue about their standing, relative to other lenders in the area.

Fig. 3 and the last column of Table 1 present the CMRPI. Teachers Credit Union, which generally made relatively many loans to low income and minority areas and individuals while having low to average denial rates, had the best (i.e., highest) score. 1st Source Bank, which made relatively few loans to low income and minority areas and individuals while also having some of the highest denial rates, tied for the worst (i.e., lowest) score with Northwest Bank. Fig. 3 shows that, even among lenders that made roughly similar numbers of total loans, there was great variability on the CMRPI.

Several conclusions can be drawn from the descriptive statistics:

- Low income areas, minority areas, low income individuals, and blacks receive a disproportionately low share of the home mortgage loans in St. Joseph County. This is because relatively few loan applications are received from such areas and individuals, while those who do apply are much more likely than the general population to have their application rejected.

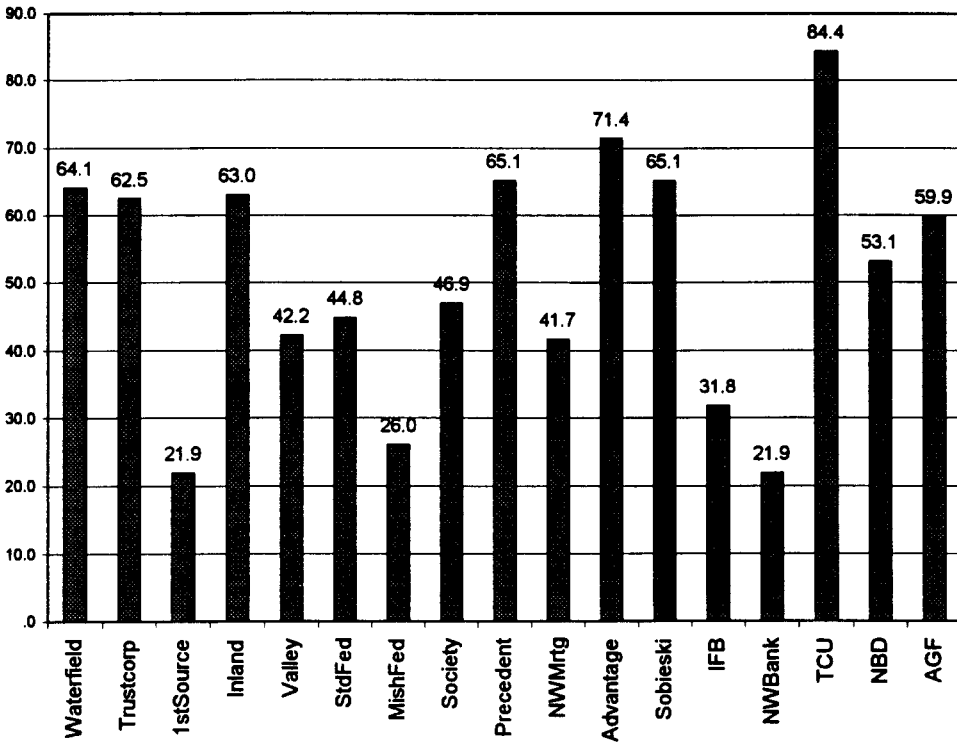


FIGURE 3
Community Mortgage Relative Performance Index

- At least some of the above may be attributed to factors such as income and credit history. However, it is far more difficult to explain the tremendous bank-by-bank variability that exists. Some of the difference between banks might be attributed to the fact that some small lenders go after niche markets that either include (or exclude) low income and minority areas and individuals. However, even among the largest lenders, which generally compete on a countywide basis, there are tremendous differences in the types of applicants that are drawn to the bank and in the banks' denial rates.

Analyses of Community Reinvestment Market Share and Lender Characteristics

The previous section showed that there were tremendous disparities in the community reinvestment performance of St. Joseph County lenders. Here, we examine what characteristics, if any, tend to be held in common by those lenders who do more of their business with low income and minority neighborhoods and individuals. For convenience, we will refer to the percentage of a lender's loans that go to low income and minority neighborhoods and individuals as its community reinvestment market share.

Characteristics by CMRPI

Name	Demographic Characteristics						Overall Lending	
	Type of Institution	Ownership	Size	Branches	Loans Originated	Denial Rate	CMRPI	
ers Credit Union	Credit union	Local	Medium	Some LowMod	111	9.02%	84.4	
ntage Mortgage	Mortgage company	Out of state	Large	Some LowMod	201	13.73%	71.4	
endent Financial Corp	Mortgage company	In state	Small	No LowMod	320	0.93%	65.1	
eski Federal S & L	Savings and loan	Local	Small	Some LowMod	178	3.26%	65.1	
rfield/UFSB of Indiana	Mortgage company	In state	Large	Some LowMod	1330	5.54%	64.1	
d Mortgage	Mortgage company	In state	Medium	Some LowMod	834	5.76%	63.0	
corp Mortgage	Mortgage company	Local	Small	Some LowMod	1263	3.14%	62.5	
ican General Finance	Consumer finance	Out of state	Large	No LowMod	34	61.36%	59.9	
Mortgage	Mortgage company	Out of state	Large	Some LowMod	59	4.84%	53.1	
ty/Ameritrust	Bank	Out of state	Large	Some LowMod	501	32.21%	46.9	
ard Federal	Savings and loan	Out of state	Large	Some LowMod	560	8.79%	44.8	
y American Bank & Trust	Bank	Local	Medium	Some LowMod	672	11.70%	42.2	
est Mortgage	Mortgage company	Out of state	Large	Some LowMod	270	6.90%	41.7	
na Federal Bank	Savings and loan	In state	Medium	No LowMod	139	7.95%	31.8	
awaka Federal Savings	Savings and loan	Local	Medium	No LowMod	546	8.39%	26.0	
est Bank of Indiana	Bank	Out of state	Large	Some LowMod	126	5.26%	21.9	
ource Bank	Bank	Local	Large	Some LowMod	947	12.88%	21.9	
her lenders					380	30.78%		
ending institutions					8471	11.10%		

Table 4 presents the same information as Table 1 except that banks are sorted according to their scores on the CMRPI. At first glance, there do not seem to be many obvious relationships. Locally owned banks get the highest and lowest CMRPI scores and are scattered throughout the rest of the rankings. The six highest scoring lenders include two small banks, two medium banks, and two large banks. For types of institutions, most mortgage companies appear in the top half of the distribution while most commercial banks appear in the lower half.

One problem is that lenders differ dramatically in the number of loans they make, hence they differ in their impact on the home mortgage market. For example, the locally owned banks with high CMRPI rankings tend to make relatively few loans compared to the locally owned banks with low ratings. Table 5 therefore provides descriptive breakdowns of community reinvestment market share by lender characteristics. Data from all lenders who did business in St. Joseph County are included here and in the subsequent logistic regression analyses, although obviously the largest lenders will have the greatest impact on the findings. About 13% of all loans are made in low income areas. For credit unions, the figure is almost twice as high. Consumer Finance Corporations also do above average business in low income areas. Branch locations are also clearly related to community reinvestment market share: Lenders with branches in low income areas do two to three times more busi-

TABLE 5
Low Income and Minority Lending by Characteristics of Lender

	Low/Mod Income Areas	Minority Areas	Low Income Applicants	Black Applicants
All lenders	12.9%	2.0%	30.3%	2.7%
Type of lender				
Bank	11.0%	2.4%	25.4%	2.2%
CFC	17.4%	2.9%	63.8%	1.5%
Credit union	24.6%	6.8%	39.8%	8.9%
Mortgage company	14.5%	1.8%	33.5%	3.3%
S & L	9.2%	1.2%	25.3%	1.3%
Location of ownership				
Within county	12.2%	2.2%	26.6%	2.4%
In state	13.5%	2.1%	35.1%	3.2%
Out of state	13.7%	1.5%	31.6%	2.8%
Asset size				
< \$100 million	15.4%	1.4%	34.8%	2.6%
\$100M to \$1B	11.4%	3.4%	27.9%	1.9%
> \$1 Billion	12.7%	1.4%	30.0%	3.3%
Branch locations				
No branches in county	4.2%	0.7%	25.5%	0.7%
No LowMod branches	6.7%	1.0%	27.1%	1.0%
Some LowMod branches	14.2%	2.2%	31.0%	3.1%

Logit Regression Models for Community Reinvestment Market Share Regressed on Lender Characteristics

Variable	Low Income Neighborhoods			Minority Neighborhoods			Low Income Individuals			Blacks		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
if bank (commercial is reference category)												
t union	1.815*	0.385	6.138	2.516*	0.890	12.375	1.848*	0.279	6.344	0.849*	1.089	
age co.	0.903*	0.190	2.468	0.768*	0.335	2.156	0.561*	0.160	1.753	1.945*	0.319	
gs & loan	0.026	0.124	1.027	-0.564	0.343	0.569	-0.063	0.082	0.939	0.524*	0.261	
on of ownership (out is reference category)	-0.077	0.126	0.926	-0.348	0.342	0.707	-0.070	0.088	0.932	-0.173	0.300	
n county	-0.512*	0.121	0.599	-0.206	0.310	0.814	-0.558*	0.085	0.572	-0.102	0.254	
te	-0.071	0.121	0.931	0.287	0.363	1.332	0.121	0.086	1.128	0.003	0.225	
size (> \$1 billion is reference category)												
0 M	0.654*	0.138	1.924	0.523	0.370	1.686	0.666*	0.091	1.946	-0.370	0.294	
m to \$1 B	0.181*	0.097	1.198	1.053*	0.215	2.865	0.159*	0.071	1.172	-0.586*	0.207	
locations (some is reference category)												
branches in county	-2.368*	0.460	0.094	-6.235	6.697	0.002	-0.663*	0.187	0.515	-5.015	4.379	
wwwMod branches	-1.068*	0.155	0.344	-1.324*	0.419	0.266	-0.405*	0.096	0.667	-0.751*	0.372	
int	-1.779*	0.096		-3.965*	0.251		-0.744*	0.069		-3.594*	0.212	

Significant at the .05 level.

ness there than lenders that do not. Patterns are similar for minority areas and low income and minority applicants. Location of ownership and asset size do not show any clear and consistent relation with community reinvestment market share.

Of course, lender characteristics are somewhat correlated with each other, (e.g., credit unions tend to be smaller and locally owned). To better disentangle these relationships, in Table 6 the different components of community reinvestment market share are regressed on all lender characteristics simultaneously. Specifically, all loan applications that were approved are included in the analysis. Four dependent variables are then computed. On the first, the approved loan is coded 1 if it was from a low income area, 0 otherwise. The process is repeated for minority areas, low income applicants, and black applicants. Each of these four dependent variables is then regressed on the lender's characteristics (i.e., the legal structure of the lender, the location of ownership, asset size, and branch locations). In these logistic regressions, a positive coefficient means that this type of lender has a higher community reinvestment market share for this dependent variable, while a negative coefficient means that its share tends to be lower.

CFCs and credit unions are consistently more likely to make their loans to low income and minority neighborhoods and individuals than other types of lenders. Conversely, lenders that do not have branches in low income areas tend to make relatively fewer such loans. Lenders headquartered within the county tend to make relatively fewer community reinvestment loans but the results are not always statistically significant. Smaller lenders tend to make more community reinvestment loans except when it comes to making loans to blacks.

Hence, at least in St. Joseph County, some types of lenders are much more likely to make community reinvestment loans than are others. Consumer finance corporations seem to specialize in such loans and credit unions, perhaps because of their clientele, also do above average business. Branch locations are also a key factor. Most large lenders in the area have at least one branch in a low income neighborhood. (This may be one thing that is different about St. Joseph County compared to larger urban areas.) Lenders that do not have low income branches do relatively little in the way of community reinvestment loans. Finally, the results provide only mixed evidence for the contention that small or locally owned banks do a better job of serving local communities. While this is sometimes true, particularly for smaller banks, effects are not always significant and sometimes run in the opposite direction.

Multivariate Analyses of Loan Denial Rates

Most analyses of home mortgage lending focus on denial rates. Here, we replicate and extend that work to St. Joseph County. We examine simultaneously how characteristics of the applicant (income, race, gender, and type of loan requested), characteristics of the area in which the applicant wishes to buy (income, racial, and educational composition), and the characteristics of the lender (type of bank, location of ownership, and asset size) are related to the probability of having a loan application denied. As we pointed out before, a bank's denial rate may or may not be a good indicator of how "friendly" the bank is toward its applicants. For example, a high denial rate may indicate that the bank attracts many low income, higher risk applicants. This becomes less problematic when multiple variables, such as income, are controlled for.

Logistic Regression of Denial on Characteristics of the Applicant, Census Tract, and Lender

Variable	Model 1: Individual Characteristics		Model 2: Model 1 + Tract Characteristics		Model 3: Model 2 + Lender Characteristics		Model 4: Model 3 + Branch Locations		Model 5: Model 4 + Lender Interactions	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Individual characteristics										
Income (in \$1000s)	-0.036*	0.002	-0.028*	0.002	-0.018*	0.002	-0.018*	0.002	-0.042*	0
Black applicant	1.006*	0.150	0.794*	0.160	0.839*	0.170	0.875*	0.171	0.350	0
Female applicant	-0.293*	0.098	-0.289*	0.098	-0.286*	0.106	-0.282*	0.106	-0.380*	0
Conventional loan	0.977*	0.086	1.107*	0.087	-0.226	0.126	-0.406*	0.130	-0.450*	0
Individual characteristics										
Median income of tract			-0.030*	0.006	-0.023*	0.006	-0.024*	0.006	-0.027*	0
Minority in tract			-0.004	0.003	-0.002	0.003	0.000	0.003	0.001	0
Tract with < 9th grade education			3.282*	1.080	2.874*	1.178	2.438*	1.186	2.298*	1
Tract of bank (commercial banks is reference category)										
Tract of credit union					1.468*	0.168	0.234	0.227	0.101	0
Tract of mortgage company					-0.717*	0.292	-0.640*	0.293	-0.642*	0
Tract of savings and loan					-1.514*	0.150	-1.604*	0.142	-1.543*	0
					-0.949*	0.120	-1.205*	0.139	-1.174*	0

Location of ownership (out of state is reference category)									
in county									
in state									
asset size (> \$1 billion is reference category)									
< \$100 M									
\$100M to \$1 B									
branch locations (some LowMod is reference category)									
branches in county									
LowMod branches									
asset & location of ownership interactions									
branch, within county ownership									
branch, in state ownership									
significant income & location of ownership interactions									
income, within county ownership									
income, in state ownership									
interaction of tract & asset size interactions									
median tract income, < \$100M assets									
median Tract Income, \$100M to \$1B Assets									
constant	-1.538	0.103	-1.006	0.257	0.544	0.288	0.754	0.291	1.630*

significant at the .05 level.

Table 7 presents the results of logistic regressions of loan denial on characteristics of the applicant, the area in which the desired home is located, and the lender. Variables are entered hierarchically in five stages. Because coefficients are fairly stable from one model to the next, we focus most of our discussion on the fourth and fifth models.

As Model 4 shows, higher income applicants, applicants from higher income areas and/or better educated areas, and those seeking a conventional rather than an FHA or VA loan are less likely to have their loan applications denied. Note that, unlike any other variable, the effect of conventional loans reverses sign once lender characteristics are added to the model. This reflects the fact that many types of lenders (e.g., credit unions) do not offer FHA or VA loans. Hence, type of lender, type of loan, and denial rate are all correlated with each other. These factors get disentangled once characteristics of the lender are included in the model. Perhaps surprisingly, female applicants are also less likely to be denied. Blacks, on the other hand, are more likely to have their applications denied. However, the racial composition of the tract is not related to loan denial when the income and educational composition of the tract is taken into account. If any areas are being discriminated against, it appears to be because of income rather than racial composition.

Characteristics of the lender are also related to the probability of a loan being denied. Credit unions, mortgage companies, and savings and loans all have lower denial rates than commercial banks. Banks headquartered out of state have significantly higher denial rates. The very largest banks deny more loans than the smallest. Branch locations is another very critical variable: banks with locations in low income areas turn down fewer loans than banks without such locations.

These results replicate previous analyses which showed that, even after controlling for a host of relevant variables, blacks are more likely than others to have their applications denied. In addition, our results are consistent with Kim and Squires (1995), who found that some types of lenders were more likely to deny loans than others. However, Kim and Squires also argued that some lenders would review applications more carefully and be more willing to work with marginal applicants and, hence, would be less prone to racial bias. If this is also true in St. Joseph County, we should find that there are significant interactions between lender characteristics and characteristics of individuals and areas. For example, the negative effect of race should be larger for some types of lenders than for others.

There are many potential interaction terms that could be added to the model, and including all of them would no doubt result in severe problems of multicollinearity. Therefore, we relied on *stepwise regression procedures* to determine which interactions would be included. The results are shown in Model 5. Several things stand out.

- Kim and Squires (1995) found that the effect of race on denial rates was less for savings and loans than for commercial banks. We find no such difference here.
- We do find significant interactions between the race and income of the applicant with the location of the lender's ownership. One interpretation of these interactions is that lenders whose main office is located out of state are less affected by the applicant's race and more affected by the applicant's income than lenders with ownership within the county or state. That is, the decisions of out-of-state lenders are driven more by economic than by racial factors.

- There is also a statistically significant interaction between the assets of the lender and the median income of the tract. The very largest lenders tend to be more affected by tract income than are the very smallest.

DISCUSSION

Previous studies have shown that, nationwide, low income and minority areas and individuals are less likely than others to apply for home mortgage loans. When they do apply, their applications are more likely to be rejected, even after factors such as income are controlled. Our analyses show that St. Joseph County, Indiana, is no exception to this general pattern.

These differences can be, and have been, attributed to such factors as credit history and how good of a risk the desired property is. Like most other studies, our analyses cannot perfectly control for such factors. However, such explanations apply only to the performance of all banks collectively. Our analyses show that there are huge differences between banks in the number and types of applications they receive and in their loan denial rates. Such differences strongly suggest that bank discretion and lending practices have a substantial impact on the number and amount of loans made.

Our analyses also found that, in St. Joseph County at least, these discrepancies were associated with lender characteristics. Credit unions and consumer finance corporations did more of their business with low income and minority neighborhoods and individuals than other types of lenders. For credit unions, this may reflect the nature of their clientele. For CFCs, it probably reflects targeting groups and areas that are often ignored by others. Lenders with branch locations in low income areas also did more business there.

Of course, St. Joseph County may be unique in that most of the largest lenders have at least one low income branch, often in downtown South Bend. It may be that “branch locations in low income areas” is an indicator of the extent to which a lender includes any of South Bend in its marketing area. For example, Mishawaka Federal Savings and other lenders which lack branch locations in the low income areas of South Bend often have few branches in the rest of the city. Further, while downtown locations may be convenient for the residents of many low income neighborhoods, that probably is not why most lenders set up their offices there. Examinations of localities where branch locations in low income areas are not so common might give a better indication of how important such offices are and how the behavior and success of lenders is related to them.

Like Kim and Squires, we also found that lender characteristics were related to denial rates. Perhaps because of their differing options and economic interests, some types of lenders (e.g., commercial banks) tended to have higher denial rates than others. Unlike Kim and Squires, we did not find that the effect of race was any less for thrifts than it was for other types of lenders. One possible explanation is that in Milwaukee, which Kim and Squires studied, greater racial conflict has affected lenders in ways not found in St. Joseph County. The effect found in Milwaukee may have been produced by a few racially sensitive lenders that coincidentally happened to be savings and loans.

We did find that lenders owned out of state seemed less affected by race and more affected by income than other lenders, suggesting their decisions may be more economi-

cally than racially driven. This does not necessarily mean that blacks would be better off applying to an out-of-state lender. Because many blacks are also low income, the smaller effect of race on denial rates for out-of-state lenders will tend to be offset by the greater effect of income. Further, while out of state lenders may treat blacks and whites more equally, they treat them equally harshly because, as the model also shows, out of state lenders tend to have higher overall denial rates.

We noted that there was much concern about what the effect of increasing bank concentration would have on community reinvestment. We did find that small locally owned banks tended to have lower denial rates than others. However, we also found that this did not consistently result in doing more of their total business with low income and minority neighborhoods and individuals. Large out-of-state lenders may have higher denial rates, but they seem at least partially to compensate by sometimes attracting more low income or minority applicants. As we have argued, denial rates can be deceptive and more needs to be known about what attracts applicants in the first place.

Obviously, it would be wise to try to replicate these findings in other cities. It is always possible that a few large atypical lenders are skewing the results. Within St. Joseph County, we saw substantial variability within categories of lenders, suggesting there are many other important variables affecting lenders which have not yet been examined. What other sorts of factors motivate a lender to have superior performance and what exactly is it that the better lenders do that make them more effective? Anecdotal experience from St. Joseph County suggests that future research should focus on the following:

- Exposure to political pressure: In the early 1990s, a local community group, CASH PLU\$, entered into negotiations with selected area lenders. One of those chosen was 1st Source, the lender that received the lowest score on our relative performance index. After extensive negotiations, 1st Source refused to sign a formal agreement but apparently did make significant changes in its lending practices. Recent reports indicate that the bank made as many home mortgage loans to blacks in 1993 as it had in the three previous years combined. Further, the bank now appears to perform well above average on many of the factors examined here. Indeed, 1st Source Bank was awarded the 1994 Master Locksmith Award by the South Bend Human Rights Commission for its efforts to promote fair housing throughout the community. Whether these changes are due to the political pressure of CASH PLU\$ is unclear, but it seems worthwhile to examine the effects of such pressure more closely.

- Institutional attitudes, values, and beliefs: This could be one of the most difficult attributes to measure, but it could also be one of the most important. Do the administrators and personnel of a lending institution believe community reinvestment should be a goal? If so, is this belief based on social values or is it a pragmatic response to legal obligations? Do key figures in the organization believe they can promote community reinvestment (e.g., via advertising, community outreach, special credit programs), or do they feel that this is beyond their control (e.g., they cannot make community reinvestment loans because people do not apply for them or, if they do apply, they are not qualified)? Does the institution have programs for its employees that are designed to promote racial sensitivity and awareness of the problems of low income and minority loan applicants? Regardless of the formal positions and policies of the lender, what values are held

by employees and what actually happens in practice? Interviews with bank personnel might be one way of getting such information. Observational studies might be another.

- **Advertising practices:** CASH PLU\$ and other community organizations often pressure banks to advertise in minority newspapers, use minorities in their ads, etc. It needs to be determined whether banks that do this are more effective in attracting low income and minority applicants.

- **Minority outreach:** One possible explanation for low application rates is that some groups, particularly minorities, may feel uncomfortable with traditional bank settings. Banks that go out into the community and recruit or send loan representatives to nontraditional settings (e.g. neighborhood centers) may attract a larger applicant pool. Minority loan officers and board members may be important factors in attracting minority applicants. For example, during summer 1994 1st Source had bank employees canvas low income areas, informing South Bend residents of the bank's products and services. 1st Source also conducted a bilingual homebuyer's workshop and translated some of its brochures into Spanish.

- **Credit programs:** Banks often claim that credit problems make minorities and others more likely to have their loans denied. However, some institutions have credit counseling programs which help people put their financial affairs in order. Lenders that are willing and able to provide such services may find that it pays off with more loans (and more profits). 1st Source, for example, has held credit counseling seminars and established what it calls Credit Starter/Credit Builder loan products.

- **Bank growth strategy and goals:** In a period of rapid banking industry consolidation, some banks plan to grow through interstate bank mergers. In order to successfully pursue this strategy, these institutions must conform with the Community Reinvestment Act or risk that their mergers will be challenged and denied on CRA grounds.

In conclusion, the greatest success of this study is the way it illustrates the tremendous variability between lending institutions in St. Joseph County, Indiana. We have identified lender characteristics that seem to be associated with that variability. At the same time, it is clear that the most commonly suggested lender characteristics (type of bank, size, location, branch offices) cannot account for all of the variability that exists between different lenders. We think it is important to examine other factors that may motivate lenders. Further, we need to go beyond looking at particular characteristics of banks and look at what the banks actually do. Banks that adopt particular practices and procedures may be more effective than those that do not. Those practices and procedures need to be identified before we can get a clear idea of why lenders differ so dramatically in their community reinvestment performance.

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