WHAT WE KNOW ABOUT MORTGAGE LENDING DISCRIMINATION IN AMERICA

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By
The Urban Institute
Washington, D.C.

Margery Austin Turner
John Yinger
Stephen Ross
Kenneth Temkin
Diane K. Levy
David Levine
Robin Ross Smith
Michelle DeLair

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Despite the generous help provided by all these individuals and organizations, any errors and omissions that may remain in this report are, of course, our own.

FOREWORD

This report adds to the growing body of evidence that discrimination remains a significant problem, and a sizeable barrier to opportunity, in America. It outlines how discrimination can affect minorities' access to mortgage capital—the key to becoming a homeowner—at multiple stages of the lending process, and it suggests directions for further research and oversight on these important issues.

HUD commissioned this independent study to review and extend what we know about the complexities of mortgage markets nationwide. Expanding opportunity through the fight against housing discrimination is a central part of HUD's mission, and building knowledge is a very important part of that effort.

HUD will use this information to further develop its policies and programs aimed at ensuring equal opportunity for all. We welcome and commend the hard work of our partners—public, private, and nonprofit—in advancing that cause.

Xavier de Souza Briggs
Deputy Assistant Secretary
for Policy Development and Research

Executive Summary

Owning a home in a neighborhood of one's choice is a major aspect of the American dream. Owning a home is one of the primary ways of accumulating wealth in our society. There is also evidence that—by creating a greater stake in the neighborhood—homeownership increases a people's willingness to invest in community problem-solving. And homeownership is even known to increase people's overall sense of well-being.

Yet not all Americans enjoy equal access to the benefits of homeownership, in part because of unequal access to capital. Minorities are less likely than whites to obtain mortgage financing and, if successful in obtaining a mortgage, tend to receive less generous loan amounts and terms.

Prepared for the U.S. Department of Housing and Urban Development (HUD) by the Urban Institute, this report provides a comprehensive review and re-analysis of the best available evidence on possible discrimination by mortgage lenders. It provides an up-to-date summary of what we know—and outlines what we need to know—about mortgage lending discrimination in America.

Beginning with an overview of the principal stages in the mortgage lending process (advertising and outreach by lenders, pre-application inquiries by prospective borrowers, loan approval or denial, and loan administration), this report concludes that minority homebuyers in the United States do face discrimination from mortgage lending institutions, although important gaps remain in what we know. The major findings of this report are:

FINDING #1. ***Discrimination can begin at the early stages of the mortgage lending process, including pre-application inquiries by would-be borrowers.*** This analysis reviewed results from HUD-funded "paired testing" that was carried out in selected cities. Testers of different races, who were matched on credit history and other traits, approached lenders with the same types of mortgage needs. Overall, minorities were less likely to receive information about loan products, received less time and information from loan officers, and were quoted higher interest rates in most of the cities where tests were conducted.

*FINDING #2. **At later stages of the process, racial disparities in loan denial rates cannot be "explained away" by differences in creditworthiness or by technical factors affecting the analyses.*** Statistical re-analysis of data assembled by the Federal Reserve Bank of Boston (data that include measures of creditworthiness and other important factors) finds large differences in loan denial rates between minority and white applicants, and these differences cannot be explained away by data or statistical problems asserted by prior critics of the "Boston Fed" study. This analysis presents substantial evidence that discrimination exists, shifting the "burden of proof" to those who would argue that these differences are entirely due to racially neutral underwriting criteria.

*FINDING #3. **Good intentions—on the part of lenders—are not enough.*** In-depth examination of the mortgage loan origination process from an individual lender's perspective suggests that even among institutions with good intentions, and where loan officers take pride in working with borrowers who need more help on loan applications, minority customers may not be receiving equal treatment. The evidence on organizational change suggests that achieving significant reductions in lending discrimination may require such changes in business practices as: improving employee awareness of and attitudes toward fair lending obligations; making the "business case" for fair lending and its importance to the firm; implementing clear incentives that support change; monitoring employee performance on fair lending; tackling underwriting standards that have disproportionate, negative effects on minorities but serve no clear business purposes; and more.

This report concludes by recommending priority next steps in measuring mortgage discrimination and developing policies and practices to better combat it. These recommendations include:

- Expanded research on lender decisions about office locations, advertising and outreach, and referrals that may discourage minorities from ever applying for loans with some institutions;

- Stepped-up testing at the pre-application stage and possibly the loan approval stage as well, for research, enforcement, and self-assessment by lenders themselves;

- Replication and enhancement of the methodology employed by the Boston Fed in new, nationwide studies of mortgage lending, including systematic analysis of mortgage loan performance to determine the "business necessity" of lending criteria and procedures that disproportionately disadvantage minorities;

- Expanded research on loan terms and conditions, including objective examination of relatively recent market trends such as risk-based pricing and credit-scoring formulas, as well as analysis of overages and fees; and

- Rigorous evaluation of fair lending "best practices" to find out what really works to increase lending to traditionally under-served groups.

Lending institutions particularly need tools that they can use to monitor and assess their own anti-discrimination efforts. While the "stick" of litigation or regulatory action creates important incentives for lenders to care about the potential for discrimination in their policies and procedures, lenders cannot take action if they do not realize that they are discriminating. Neither regulators nor fair housing groups have sufficient resources to investigate all lending institutions. Self-testing is one important strategy that lenders can use to monitor their performance and identify any problems that may exist.

CONTENTS

Introduction

A major element of the American dream is a home of one's own in the neighborhood of one's choice. Owning a home is one of the primary ways of accumulating wealth in our society, a form of wealth acquisition that is especially protected in the U.S. tax code. Being a homeowner is also known to increase people's feelings of control over their lives and their sense of overall well-being. High rates of homeownership are believed to strengthen neighborhoods as well, by increasing residents' stake in the future of their communities.

But not all Americans enjoy equal access to the benefits of homeownership. Federal law prohibits discrimination in the home buying process, mandating that all would-be home buyers must be treated equally by real estate agents, lenders, appraisers, and insurance brokers.[1] However, existing enforcement mechanisms may not be sufficient to guarantee equal treatment or equitable results. Indeed, research clearly shows that minorities still face substantial discrimination in the process of looking for a home to buy (or rent).[2]

Many people believe that minorities also face discrimination when they try to obtain a mortgage—a necessity for most Americans wanting to buy a home. There is no question that minorities are less likely than whites to obtain mortgage financing and, if successful, receive less generous loan amounts and terms. But whether these differences are the result of discrimination—rather than the inevitable result of objectively lower creditworthiness—is still debated in some quarters. The problem here is not that analysts or practitioners have ignored the question of discrimination in mortgage lending. Many research and investigative studies have addressed certain facets of it, using different data sets and analytic techniques to study various outcomes. The problem is that these studies have not produced a clear consensus on a set of conclusions.[3]

The purpose of this report is to sort through the research evidence on mortgage lending discrimination, in order to 1) provide policy makers with a comprehensive and comprehensible review of the current state of knowledge on lending discrimination, 2) add new evidence and insight by looking at the mortgage application process from a lender's perspective; and 3) identify important questions that still need to be answered in order to recommend how best to further the goal of fair housing for all. This report draws upon a comprehensive review and re-analysis of existing evidence regarding discrimination by mortgage lenders, commissioned by the United States Department of

Housing and Urban Development and conducted by the Urban Institute.[4] It provides an up-to-date summary of what we know—and what we need to know—about mortgage lending discrimination.[5]

Our review of the existing research evidence concludes that minority homebuyers in the United States do face discrimination from mortgage lending institutions. Discrimination in home mortgage lending takes two forms—differential treatment and disparate impact—and in many instances, it is difficult, if not impossible to disentangle the two. Although significant gaps remain in what we know, a substantial body of objective and credible statistical evidence strongly indicates that discrimination persists:

*FINDING #1. **Discrimination can begin at the early stages of the mortgage lending process, including pre-application inquiries by would-be borrowers.*** This analysis reviewed results from HUD-funded "paired testing" that was carried out in selected cities. Testers of different races, who were matched on credit history and other traits, approached lenders with the same types of mortgage needs. Overall, minorities were less likely to receive information about loan products, received less time and information from loan officers, and were quoted higher interest rates in most of the cities where tests were conducted.

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In-depth examination of the mortgage loan origination process from an individual lender's perspective suggests that even among institutions with good intentions, and where loan officers take pride in working with borrowers who need more help on loan applications, minority customers may not be receiving equal treatment. The evidence on organizational change suggests that achieving significant reductions in lending

discrimination may require such changes in business practices as: improving employee awareness of and attitudes toward fair lending obligations; making the "business case" for fair lending and its importance to the firm; implementing clear incentives that support change; monitoring employee performance on fair lending; tackling underwriting standards that have disproportionate, negative effects on minorities but serve no clear business purposes; and more.

Given the body of evidence reported here, no one can argue that more research is needed to justify aggressive monitoring and enforcement efforts. But more research is needed to refine and target enforcement strategies, to enable lending institutions to monitor their own performance so that they know whether they have a problem to address, and to design remedies to reduce discrimination in lending. Specifically, we recommend:

- Expanded research on lender decisions about office locations, advertising and outreach, and referrals that may discourage minorities from ever applying for loans with some institutions;
- stepped-up testing at the pre-application stage, and possibly the loan approval stage as well, for research, enforcement, and self-assessment (by lenders);
- replication and enhancement of the Boston Fed methodology nationwide, including systematic analysis of mortgage loan performance to determine the business necessity of lending criteria and procedures that disproportionately disadvantage minorities;
- expanded research on loan terms and conditions, including objective examination of risk-based pricing and credit-scoring formulas, as well as analysis of overages and fees; and
- serious evaluation of fair lending best practices to find out what works.

This report begins with a brief review of the issues involved in measuring the incidence and severity of lending discrimination, including different ways in which discrimination can be defined and measured and the reasons why lenders might discriminate. This is followed by assessments of the evidence on discrimination at each major stage in the mortgage lending process—in some cases including new work conducted specifically for this project. We then shift focus, looking at the mortgage application process and the potential for discrimination from a lender's perspective, in order to better understand what it will take to recognize and remedy discrimination.

The report concludes by recommending priority next steps in measuring mortgage discrimination and developing policies and practices to better combat it.

WHY IT IS DIFFICULT TO MEASURE LENDING DISCRIMINATION

Investigative activities by fair housing advocates and others have identified and successfully prosecuted cases of mortgage lending discrimination. However, analytic studies measuring the overall incidence of discrimination are subject to widely differing interpretations. The crux of the problem is that legal evidence of discrimination in specific cases is not the same as statistical measures of the overall level at which discrimination occurs. For analytic estimates of discrimination, researchers need to be confident that individual instances of discrimination are more than isolated occurrences, and that they add up to a consistent pattern that favors whites and outweighs in a statistical sense any corresponding pattern that favors minorities.

Two characteristics of mortgage financing make it especially difficult to reach definitive statistical estimates of discrimination. The first is that the home mortgage lending process is a complex series of stages. Discrimination could be occurring at any one or more of these, and could take different forms at different stages. But until the stages themselves are clearly distinguished, and the incidence of discrimination measured at each, its overall incidence cannot be properly interpreted. The second is that what everyone now acknowledges to have been deliberate discrimination by many institutions in American society in the past has left a legacy of economic inequality between whites and minorities that still exists today. This legacy includes racial and ethnic differences in characteristics that influence the creditworthiness of any mortgage applicant—income, accumulated wealth, property values, and credit history. Much of the current debate about mortgage lending discrimination stems from disagreement about how much of minorities' differential success in obtaining mortgage loans is due to credit-relevant factors that vary with race or ethnicity (and that may flow from the Nation's discriminatory past) and how much is due to ongoing discrimination.

DIFFERENT FORMS OF DISCRIMINATION

Discrimination in mortgage lending can take two different forms. It is important to understand the distinctions clearly, because the different forms of discrimination may require different measurement strategies, as well as different remedies. The fundamental distinction is between differential treatment and disparate impact discrimination.

Differential treatment discrimination occurs when equally qualified individuals are treated differently due to their race or ethnicity. In mortgage lending, differential treatment might mean that minority applicants are more likely than whites to be discouraged from applying for a loan, to have their loan application rejected, or to receive unfavorable loan terms—even after taking into account characteristics of the applicant, property, and loan request that affect creditworthiness. A finding of differential treatment discrimination means that minorities receive less favorable treatment from a given lender than majority applicants with the same credit-related characteristics (as observable by the lender).

Disparate impact discrimination occurs when a lending policy, which may appear to be color-blind in the way it treats mortgage loan applicants, disqualifies a larger share of minorities than whites, but cannot be justified as a business necessity.[6] A widely cited example is the policy of minimum mortgage loan amounts—setting a dollar limit below which a lending institution will not issue mortgages. More minorities than whites will be adversely affected by any given loan cut-off, because—on average—minorities have lower incomes than whites and can only afford less costly houses. Policies such as minimum loan amounts, which disproportionately affect minorities, are illegal unless they serve an explicit business necessity. If these policies do not accurately reflect creditworthiness, or if they could be replaced by policies serving the same business purpose with less of a disproportionate effect on minorities, then they are deemed under Federal law to be discriminatory.

The point for public policy is that policies which are discriminatory in effect may have adverse consequences of much greater magnitude than practices that treat individuals differently on the basis of their race. Federal policy makes disparate impact discrimination illegal so that institutional policies do not simply perpetuate patterns of racial inequality, many of which are the consequence of past discrimination. In other words, achieving a world of truly fair lending will require remedies that go beyond color-blindness.

POSSIBLE MOTIVES FOR DISCRIMINATION

The most straightforward explanation for why discrimination occurs is prejudice (often referred to by analysts as taste-based discrimination). If lenders—or their employees—are prejudiced against minorities, they consider them to be inherently inferior and prefer not to interact with them or have them as customers. The lending industry has long argued that it does not discriminate, because doing so would go against the very reason for being in business—maximizing profits. It is not the color of a customer's skin that matters, according to an often-quoted statement of this viewpoint, but the color of his or her money. This argument does not dispose of the discrimination issue, however. First, it is entirely possible for prejudice to persist among profit-motivated businesses, due to market imperfections, information barriers, and the large number of people who participate in a loan-approval decision. In fact, suggestive, though not definitive, evidence that prejudice may indeed be a factor at work comes from one study in which black-white disparities in loan approval rates decline as minority representation in either a lender's overall workforce or its management staff increases.[7]

Moreover, even if there is no "taste-based" discrimination in the industry, discrimination may in fact be in a mortgage lender's perceived economic self-interest. Discrimination for this type of reason is referred to as economic discrimination, to distinguish it from discrimination due to prejudice. The key point here is that some factors that influence a lender's expected rate of return may also be highly correlated with race or ethnicity. For example, minorities may be less likely than whites to have affluent family members who can help them out if they get into a financial bind, or they may be more likely to be laid off in the event of an economic downturn. If lenders think that race is a reliable proxy for factors they cannot easily observe that affect credit risk, they will have an economic incentive to discriminate against minorities. Thus, denying mortgage credit to a minority applicant on the basis of information that is valid for minorities on average—but not necessarily for the individual in question—may be economically rational. But it is still discrimination, and it is illegal.

Recent attention has focused on cultural affinity as another possible reason for discrimination. This argument attributes discrimination to the lack of affinity among white loan officers for the culture of certain minority groups. Because they feel less comfortable with minority borrowers, or because they are not able to understand the way minorities communicate, loan officers may exert less effort to determine creditworthiness or to help minority borrowers meet underwriting criteria. The literature suggests several possible explanations for why this type of behavior might be occurring, but most turn out to be forms of either prejudice or economic discrimination. Another version of the cultural affinity argument is that blacks and whites tend to sort themselves by lender—black to black, white to white—and the resulting pattern of loan offerings is discriminatory to minorities. Indeed, there is some suggestive evidence that applicants may sort themselves by race in selecting lenders, but not that this form of "cultural affinity" results in differential loan denial rates.[8]

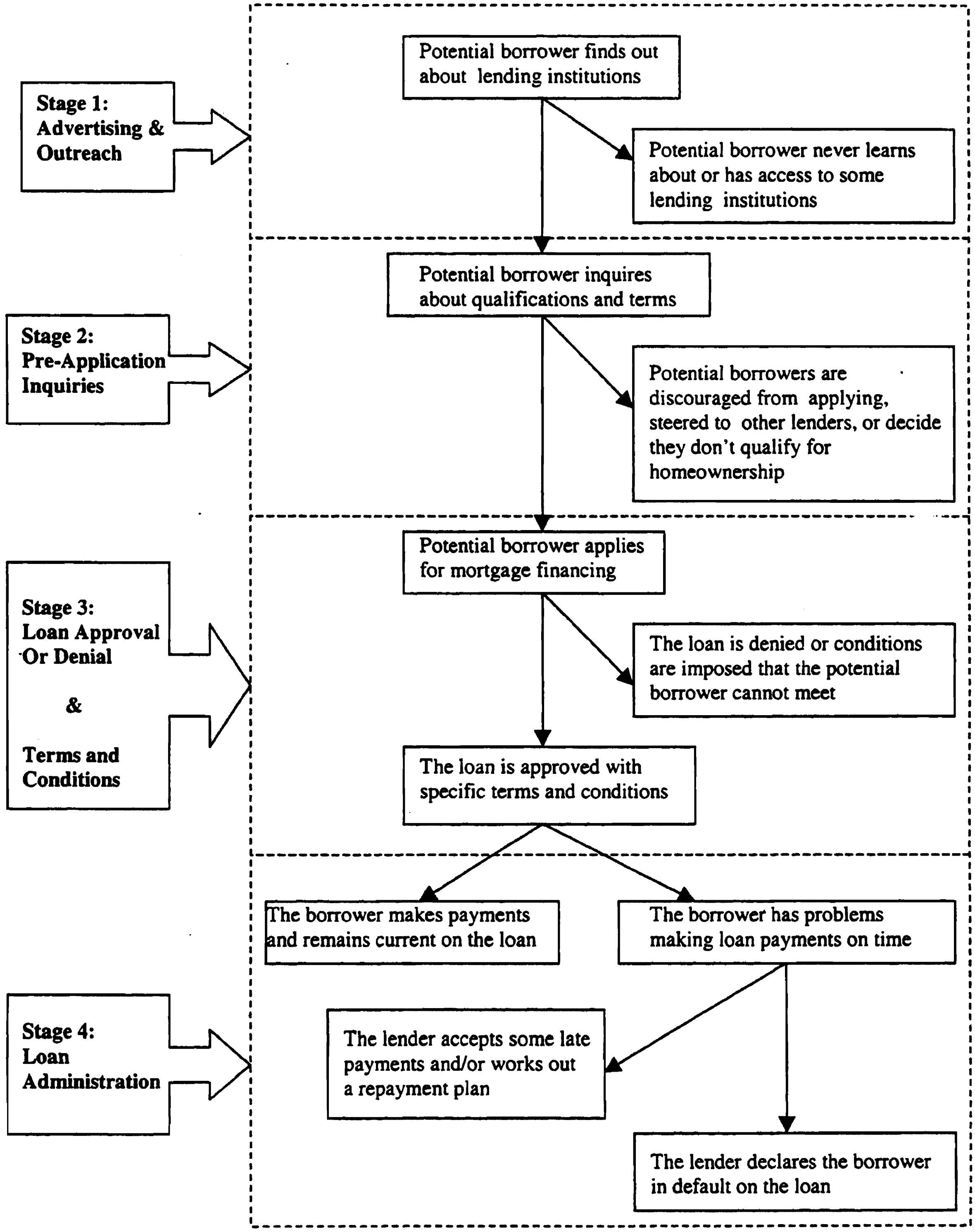
POTENTIAL FOR DISCRIMINATION THROUGHOUT THE MORTGAGE LENDING PROCESS

Home mortgage lending is a complex process, composed of many different decision points and institutional policies. Exhibit 1 provides an overview of key stages in the process. As discussed earlier, there is a potential for discrimination to occur at any one or more points along the way. This makes research challenging, for several reasons:

- A finding of little or no discrimination at one stage in the process does not necessarily prove the absence of discrimination in the process as a whole.
- Discrimination may take different forms from one stage to the next, so that a single set of measurement techniques may not apply across the entire process.
- Discrimination at one stage may influence the characteristics and requests of potential borrowers at a subsequent stage. For example, if a lender systematically steers minorities to apply for federally insured loans, while whites are encouraged to apply for conventional loans, analysis of the loan approval decision will be complicated by the fact that minorities and whites are requesting different types of loans, regardless of their qualifications.

To date, very little research has focused on lenders' outreach, advertising, or office location decisions (the first stage in the process). And there has been almost no analysis of potential discrimination in the way loans are administered or how foreclosure decisions are made. Thus, although considerable analysis has focused on potential discrimination at the loan approval stage, the existing evidence provides an incomplete picture of the overall incidence of discrimination experienced by minority homeseekers. The next four sections of this report focus in turn on four major stages in the mortgage lending process, summarizing what we know about the levels of discrimination occurring at each.

Exhibit 1: Key Stages in the Mortgage Lending Process



Stage 1: Advertising And Outreach

The loan approval/denial decision is what comes to mind when most people think about the mortgage lending process. And, indeed, this decision has received the most analytic attention to date. But the mortgage lending process starts considerably earlier than that, with preliminary stages filtering out some would-be mortgage applicants before they even get to a loan officer. The process actually begins with advertising and other outreach efforts—how potential mortgage applicants find out about lending institutions and loan alternatives.

To some extent, lenders use traditional means to advertise loans, such as newspapers and television, which are available on an equal basis to all who care to look. But they may also make special efforts to reach (or avoid) particular segments of the population. One outreach strategy that some lenders use is direct mail solicitations of potential customers, sometimes targeted by zip code. Who receives such solicitations—and who does not—could have a discriminatory effect. Another important facet of outreach is the placement of branch offices, for which we have legal evidence of discrimination from an investigation of the Decatur Federal Savings and Loan Association, which began in 1989 with a U.S. Justice Department investigation and ended with a consent decree signed by the two litigating parties in 1992.

The investigation found that Decatur Federal had opened 43 branches in the Atlanta metropolitan area between its founding in 1927 and the late 1980s, only one of which was in a largely black neighborhood. During the same period, it closed two offices—the one originally opened in the largely black neighborhood and another one in a neighborhood that had become largely black. Along with this history of branch closings, Decatur Federal explicitly applied different criteria for closing branches in black neighborhoods than the criteria it applied to branches in white neighborhoods. In addition, the Justice Department obtained evidence that Decatur Federal had explicitly excluded black census tracts from its market area, even though it was a large-volume lender able to compete throughout the Atlanta metropolitan area. Finally, a former Decatur Federal account executive told investigators that she was specifically instructed by the bank not to solicit loans south of interstate 20, an area that included many of Atlanta's black neighborhoods.[9]

Legal evidence of this type, which proves discrimination in a single institution, points the way for researchers to define and devise ways of measuring the incidence of similar practices across institutions or markets. How frequently does discrimination occur at this initial stage in the mortgage lending process? What forms does it take? How does it influence minorities' access to lending institutions? Unfortunately, there are no statistical estimates, as yet, of the incidence of discrimination during the advertising and outreach stage of the mortgage lending process. This is an area where more research is clearly needed.

Stage 2: Pre-Application Inquiries

The second important stage in the mortgage lending process encompasses the information and encouragement people receive when they call or visit a lender's office to inquire about mortgage loan terms and conditions. Do minorities and whites receive different levels of service and assistance? Are they given different amounts or types of information? Are they told they may qualify for different types of loans? Do they receive different degrees of encouragement and help in understanding how to overcome barriers to application and approval?

Existing knowledge about lender behavior at this stage comes primarily from paired testing (also known as fair lending audits). Testing has been widely used for analytic as well as investigative studies of discrimination by landlords and real estate agents. But only a few relatively small-scale investigative studies—primarily by the National Fair Housing Alliance (NFHA)—have been applied to mortgage lending.

The NFHA audits, funded by the U.S. Department of Housing and Urban Development's Fair Housing Initiatives Program (FHIP), were conducted by fair housing enforcement organizations using testers who posed as first-time homebuyers and refinancers at the pre-application stage. Testers, matched on ratios that relate a household's income and debts to the desired loan amount, visited lenders in person to inquire about the types and terms of loans for which they might qualify.[10] After each visit, testers answered a set of closed-ended questions and wrote extensive narratives about their experiences. NFHA conducted tests in seven cities (Atlanta, Chicago, Dallas, Denver, Detroit, Oakland, and Richmond), with about two-thirds of the tests concentrated in Chicago and Oakland.

NFHA concluded that lenders often appeared to be less interested in giving information to black customers than to whites; that they urged black customers, but not whites, to go to another lender; and emphasized to black customers, but not whites, that application procedures would be long and complicated. According to these investigative audits, blacks were also more likely than equally qualified whites to be told that they did not qualify for a mortgage (before they had filed a formal application), and whites were more likely to be "coached" on how best to handle potentially problematic aspects of their credit profile.[11]

Given their purpose, NFHA's tests were not designed to produce statistically valid measures of the incidence of discrimination across lenders or markets. In fact, NFHA's method for selecting lenders was structured specifically to build evidence for potential litigation. In Oakland and Chicago, the original two cities for the testing project, an initial target group of lenders was selected based on market share and lending performance data suggesting inferior treatment of minority applicants and minority neighborhoods. Follow-up tests were conducted for lenders where evidence of differential treatment was found on the first visit, and lenders tested in the other five sites were selected based on findings of discrimination from the tests in Oakland and Chicago. Thus, the resulting sample of tests cannot be interpreted to reflect the incidence of discrimination in these cities or the Nation as a whole, because it skews the sample toward likely discriminators in a way that cannot be replicated or accounted for by statistical weights.

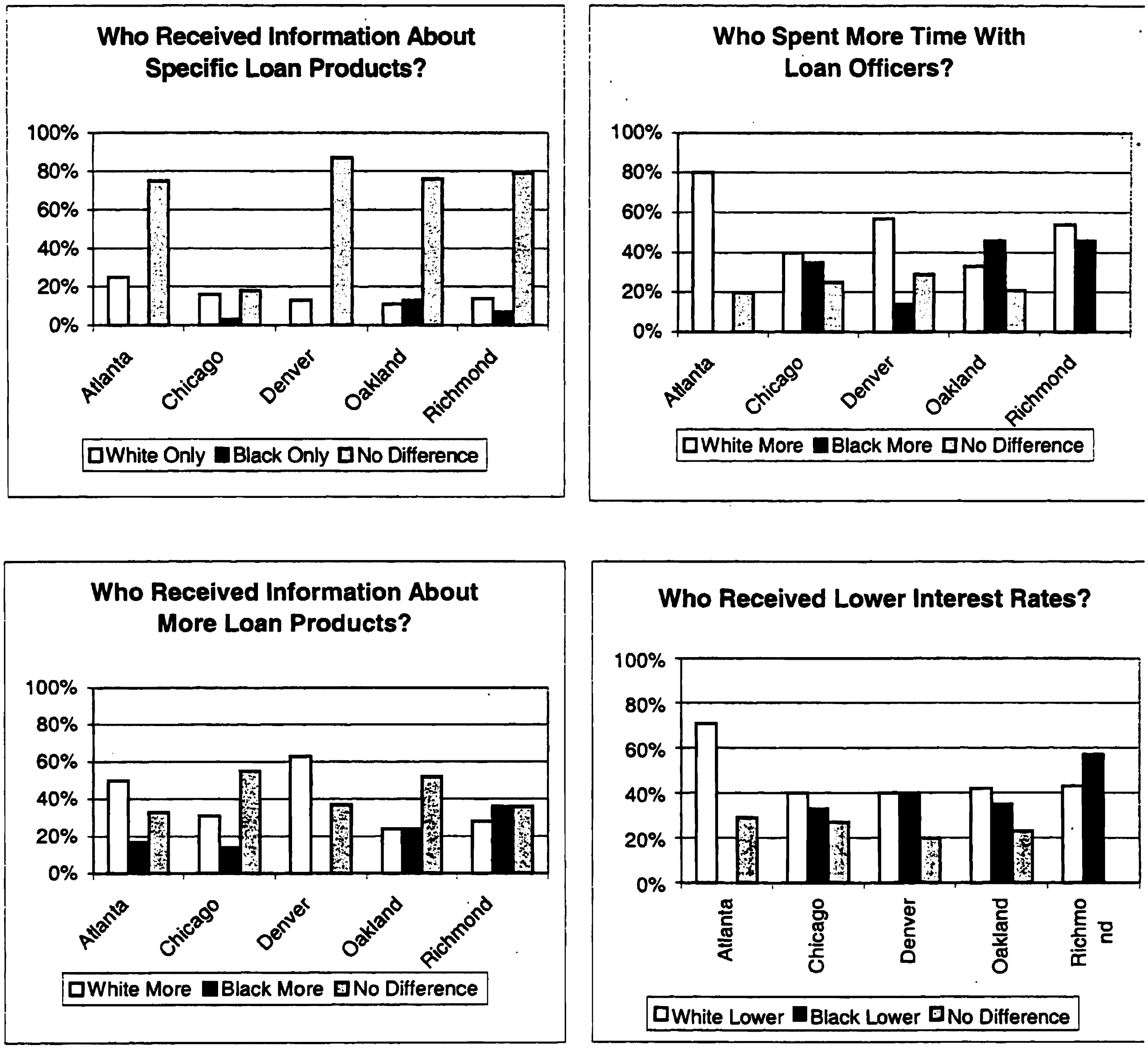
Despite these limitations, NFHA gave the Urban Institute access to data from a large number of the tests they conducted, enabling researchers to construct a database of statistically tractable information. Specifically, researchers extracted a limited number of closed-ended information items[12] from the NFHA test reports for 150 paired tests. This data set provides the opportunity to learn more from a research perspective about the presence and forms of discrimination at the pre-application stage. Exhibit 2 summarizes key findings from the Urban Institute analysis of these data. It is important to keep in mind that the findings reported here apply only to the specific sample of lenders tested by NFHA, which were selected in large part because they had already shown signs of potential discriminatory behavior. [13]

The most basic measure of service at the pre-application stage is whether or not a tester is seen by a lender and given information about specific loan products. In four of the five cities in the re-analysis data set, African-American testers were more likely to be denied such information than white testers. In Chicago and Atlanta the difference was statistically significant. Moreover, in four of the five test cities lenders spent more time with white than with minority testers. In Atlanta the disparity in favor of whites averaged 27 minutes, in an interaction that averaged 62 minutes (for whites). Oakland was the exception city, where loan officers spent significantly more time with black testers. Not only did lenders spend more time with whites, in three of five cities, they provided whites with information about more possible loan products.

What about the loan products? The information available does not support detailed comparisons of the terms and conditions offered to whites and blacks, but it does indicate which testers were quoted a product with a 30-year term. Comparing the interest rates quoted for these 30-year mortgages reveals that African-American testers were more likely to be quoted higher interest rates than their white counterparts in three of the five cities. In Atlanta the difference was statistically significant. In only one city (Richmond) were whites quoted higher rates than blacks.

A notable feature of the paired test results is their regional variation. Although several treatment variables show the same general pattern across cities, differences between cities are substantial. This is particularly striking because the two cities with the most tests—Chicago and Oakland—yield opposite results. In Chicago all the statistically significant findings were unfavorable to black testers, while in Oakland, differences in treatment were rarely significant and, when they were, they often benefited African-American testers. This contrast highlights the need to better understand regional differences in mortgage lending practices and in the incidence and forms of lending discrimination.

Exhibit 2: Findings from FHIP Data Re-Analysis



Stage 3: The Loan Approval Or Disapproval Decision

The decision about whether to accept or reject a mortgage loan application has been the subject of an impressive amount of sophisticated statistical analysis. The primary information used in these studies is a repository of data compiled as a consequence of the 1975 Home Mortgage Disclosure Act (HMDA). HMDA mandated the annual reporting of information, by all mortgage lending institutions with at least $10 million in assets, on the number and dollar amount of both home mortgage and home improvement loans, by census tract or county. Since passage of Section 1211 of the Financial Institutions Reform, Recovery, and Enforcement Act of 1989, HMDA data have also included the race, gender, and income of mortgage loan applicants.

HMDA data are routinely used to compare a lender's denial rates for minority and white loan applicants, as a measure of their loan performance with regard to minorities. These analyses typically show that mortgage applications by minorities are rejected at higher rates than whites, even controlling for such factors as applicant income.

Although many useful studies are based on HMDA data, these data alone cannot prove or disprove the existence of lending discrimination, because they do not provide enough information to control for all relevant differences between white and minority borrowers. Even though HMDA data now include borrowers' race, ethnicity, and income, they do not include critical information on the wealth and debt levels of loan applicants, their credit histories, the characteristics of properties serving as collateral, the terms of loans for which applications were submitted, or the underwriting criteria used to determine eligibility. Herein lies a good part of the story behind the fierce analytical debate about what can and cannot be said about discrimination in mortgage lending.

The seminal study in the debate over discrimination at the loan approval stage is a study by researchers at the Federal Reserve Bank of Boston that was initially released in 1992 and published in final form in 1996.[14] Other recent studies make valuable methodological and substantive contributions,[15] but the lack of a data set comparable to the one collected for the Boston Fed Study casts a shadow over all this other research and makes the results difficult to interpret. Only the body of work that includes the Boston Fed Study itself and the contributions of its numerous critics makes it possible to derive a credible estimate of discrimination in the loan approval process at the regional level.

The Boston Fed Study began with the HMDA data, but assembled the additional information needed to measure discrimination through a survey of Boston-area lenders. This survey collected 38 additional variables for each application in the Boston Fed sample, covering the whole array of information needed to control for legitimate differences in applicant creditworthiness. That the Boston Fed sponsored the study and gained the cooperation of area lenders could suggest that the lending community did not expect the study to find statistically compelling evidence of discrimination. But it did just that—finding that minority status was indeed a statistically significant and fairly large influence in lending decisions, even when a mass of detailed information systematically related to the lending decision was controlled for in the statistical analysis. The Boston Fed's basic model found that the probability of loan denial in the Boston area was about 80 percent higher for a black or Hispanic applicant than for a white applicant, after loan, property, and applicant characteristics were all controlled for.

The findings of the Boston Fed Study had an explosive effect on the mortgage lending discrimination debate, initially stimulating extensive soul searching by the industry followed by a great deal of analytic scrutiny of both the study's data quality and its methodological approaches. The findings have emerged remarkably intact in the face of most of this scrutiny. But certain complex analytical questions remain that some analysts conclude are enough to undermine the credibility of the original findings. Specifically:

- ***Omitted Variables***. Key variables that affect the lending decision, and that are correlated with race or ethnicity, may have been omitted from the Boston Fed analysis. If so, the estimated impact of minority status on the approval decision is overstated, because it partly reflects the impact of other, legitimate factors that vary with race and ethnicity.

- ***Data Errors***. Mistakes in data entry or data coding may have distorted the Boston Fed analysis, possibly leading to over-estimates of the importance of minority status. In addition, some loans in the Boston Fed data set may have been incorrectly classified as approved or disapproved.

- ***Incorrect Specification.*** When analysts "specify" a predictive equation, they have to make assumptions about how different factors interact to influence the approval or denial decision. If the Boston Fed's equations were incorrectly specified, they might again overstate the importance of minority status.

- *Endogenous Explanatory Variables.* Some of the variables in the Boston Fed equations that are used to help explain or predict loan approval may in fact be decided at the same time as—or in conjunction with—the loan approval decision. If this is the case, the independent effects of minority on loan outcomes cannot be disentangled without more complex models of the interactive process.

Because of the importance of the Boston Fed Study, this project undertook a comprehensive review and re-analysis to assess these critiques. In some cases, re-analysis shows that the critics are simply wrong; the problem they identify does not exist or the bias involved is empirically insignificant. In several cases, however, we agree with the critics that a limitation in the Boston Fed Study could potentially lead to a serious overstatement of discrimination, and we have explored these cases in detail. Moreover, we find that the critical literature has raised several important issues concerning the interpretation of the Boston Fed Study's results. This analysis leads to the following major conclusions:

- The large differences in loan denial rates between minority and white applicants found by the Boston Fed cannot be explained away by data errors, omitted variables, or inter-relationships between factors that influence loan approval (endogeneity).

- The Boston Fed Study results do not definitively prove either the presence or the absence of differential treatment discrimination in loan approval, nor do they definitively prove either the presence or the absence of disparate impact discrimination.

- The Boston Fed Study results provide such strong evidence of differential denial rates (other things being equal) that they establish a presumption that discrimination exists, and effectively shift the "burden of proof" to those who would argue that these differences are entirely due to legitimate underwriting criteria that reflect an applicant's creditworthiness and therefore serve a business necessity.

- The best way to determine whether the observed minority-white differences in loan denials are the result of underwriting practices justified by business necessity would be to replicate the Boston Fed Study with the addition of loan performance data, while the best and possibly only way to distinguish differential treatment discrimination from disparate impact discrimination at the loan approval stage is to conduct paired testing.

The remainder of this section explains these conclusions is discussed in greater detail and then turns to other evidence regarding potential discrimination at the loan approval stage.[16]

What We Can Learn from the Boston Fed Study

Critics of Boston Fed Study have argued that key variables that affect the lending decision, and that are correlated with race, may have been omitted from the analysis. If so, the estimated impact of race on the approval decision would be overstated because it would incorporate the impacts of other, legitimate factors that co-vary with race. Others present evidence of data errors in loan terms, application characteristics, or loan outcomes in the Boston Fed data base that they think lead to upwardly biased estimates of discrimination.[17] Finally, critics argue that single-equation models of loan denial are inevitably biased because many loan terms—in particular the loan-to-value ratio, which changes if the applicant changes the downpayment—are actually the result of negotiation or participation in a special loan program. In other words, key explanatory variables in the Boston Fed equations may in fact be *endogenous*—decided at the same time or in conjunction with the outcome they are supposed to help explain or predict.[18] If this is the case, the independent effect of race may be incorrectly estimated.

We have examined all of these arguments and, where possible, tested them with the public-use version of the Boston Fed Study's data. We conclude that the large differences in loan denial rates between minority and white applicants that are identified by the Boston Fed Study cannot be explained by data errors, omitted variables, or the endogeneity of loan terms. No reasonable procedure for solving any of these potential problems eliminates the large positive impact of minority status on loan denial. In particular, some scholars have made the reasonable argument that a variable indicating whether a loan application meets the lenders' underwriting guidelines should be included in the Boston Fed's loan denial equation to correct for aspects of applicants' credit histories that are omitted from other explanatory variables. If this variable does indeed capture such omitted elements, however, then the unobserved factors influencing "meets guidelines" will be correlated with unobserved factors influencing loan denial. We show that this is not the case. It follows that the "meets guidelines" variable does not correct for omitted variables. In addition, we find that accounting for the endogeneity of various loan terms never results in a substantial reduction in the estimated minority-status coefficient, and in several particularly plausible cases, this step actually makes that coefficient larger.

Based on our review of the Boston Fed Study and its critics, we conclude that no study has demonstrated either the presence *or the absence* of differential treatment discrimination in loan approval, at least not in a large sample of lenders. This conclusion puts the authors of this report at odds with the authors of the Boston Fed Study, who claim that they measure differential treatment discrimination, but also with several of their critics, who claim that there is no discrimination at all. The Boston Fed Study results constitute differential treatment discrimination only under the assumption that all lenders use the same underwriting guidelines. With this assumption, any group-based difference in treatment after controlling for underwriting variables implies that the guidelines are applied differentially across groups, which is, by definition, differential treatment discrimination. Because virtually all lenders sell some of their loans in the secondary mortgage market, they have some incentive to use the underwriting guidelines that institutions in that market, such as Fannie Mae and Freddie Mac, have established. However, not all loans are sold in the secondary market, and the lending process often involves many individuals in the same lending institution, who may not always apply guidelines uniformly. No evidence currently exists to determine the extent to which underwriting standards vary across lenders.

Moreover, we find that no study has conclusively demonstrated either the presence *or the absence* of disparate impact discrimination in loan approval. The Boston Fed Study results measure disparate impact discrimination only under the assumptions that 1) different lenders use different underwriting guidelines, 2) existing guidelines are accurately linked to loan profitability, on average, and 3) deviations from average guidelines cannot be justified on the basis of business necessity. These assumptions could be satisfied, for example, if underwriting guidelines vary across lenders solely for idiosyncratic reasons or if some lenders purposefully develop guidelines that have a disparate impact on minority applicants. However, no existing study sheds light on whether or not these assumptions are met.

Although the Boston Fed Study does not definitively prove the existence of either differential treatment or disparate impact discrimination, it clearly establishes the presumption that one or both exists. This presumption can be rebutted only with evidence that observed differences in loan approval between minorities and whites can be entirely explained by profit-based differences in the underwriting guidelines used by the lenders to which minorities and whites apply. To use the legal term, the Boston Fed Study makes a *prima facie* case that discrimination exists. If such a case were made in a courtroom setting, the burden of proof would shift to lenders. To escape the conclusion that they are discriminating, lenders would have to prove that their actions were based on "business necessity"; that is, that they used underwriting guidelines with a clear connection to the return on loans, that they applied these guidelines equally to all groups, and that no equally profitable guidelines without a disparate impact on minority applicants were available. In our view, no scholar has come close to showing that the observed inter-group differences in loan approval in Boston can be justified in business terms.

In fact, the available evidence suggests that business necessity is unlikely to explain a large share of the observed minority-white difference in loan denial. In particular, legitimate differences in underwriting guidelines must be associated with real differences in lenders' experiences and are therefore most likely to arise between lenders that specialize in groups of borrowers with different average creditworthiness. Thus, if differences across lenders in legitimate underwriting criteria have a major impact on the observed minority-white difference in loan denial, then allowing underwriting criteria to vary across lenders should dramatically lower the estimated minority-status coefficient. This turns out not to be the case. The Boston Fed Study rejects the hypothesis that the underwriting model is different for single-family houses, multi-family houses, or condominiums. Moreover, analysts have found little evidence that individual underwriting variables receive different weights for minority and white applicants. In addition, the estimated coefficient on minority status is virtually the same when separate regressions (and hence separate underwriting guidelines) are estimated for lenders that specialize in lending to minorities and for other lenders. Finally, the minority-status coefficient is literally unaffected if one excludes two minority lenders, who together account for half of the minority applications in the Boston Fed sample.

As explained earlier, the "meets guidelines" variable might be related to the issue of business necessity. Under the assumption that minority households do a poorer job than white households in selecting lenders that meet their credit needs, including the "meets guidelines" variable (and treating it as endogenous) can be interpreted as a way to account for legitimate differences in underwriting guidelines across the lenders visited by minorities and whites. In this case, we find that roughly 27 percent of the minority-white difference in loan denial is due to business necessity, not discrimination. However, this assumption is not consistent with the results summarized in the previous paragraph. If minority households simply do a poorer job finding just the right lender, then, contrary to this evidence, the minority-white difference in loan approval should be larger for lenders that specialize in lending to minorities. This is not the case.

The best way to determine whether the observed minority-white differences in loan-denial rates are the result of underwriting practices justified by business necessity would be to replicate the Boston Fed Study in other cities, with the addition of loan performance data. This approach would make it possible to determine which observed application characteristics are accurate predictors of loan returns and therefore which underwriting guidelines are legitimate. Minority-white differences in loan-denial that remain after accounting for legitimate underwriting guidelines are evidence of discrimination. Unfortunately however, this approach would not be able to distinguish between differential treatment and disparate impact discrimination. A combination of application data (including credit history), and performance data should make it possible to identify legitimate underwriting guidelines, and even to determine if those guidelines vary by location or by some other variable. However, these data would contain only a few observations for each individual lender and therefore could not be used to identify each lender's actual underwriting guidelines. As a result, it would be impossible to determine whether remaining minority-white differences in loan denial for an individual lender are due to that lender's use of different guidelines for minorities and whites (differential treatment discrimination) or its use of illegitimate guidelines that place minority applicants at a disadvantage (disparate impact discrimination).

The best, and possibly the only way to isolate differential treatment discrimination in loan approvals is with the paired testing methodology. Specifically, two applicants with the same credit histories and in need of the same type of loan would apply for a mortgage at the same lender. Differential treatment discrimination exists if minority applicants are systematically treated less favorably in a large sample of cases. Research of this type would shed no light on disparate impact discrimination because it would compare the treatment of identically qualified minority and white applicants at the same lender. Thus, observed differences in treatment could not be due to underwriting guidelines that illegitimately magnify differences in credit characteristics between minorities and whites, that is, to disparate impact discrimination.

Unfortunately, a paired testing study of loan approval faces major challenges. Perhaps the most important is that it would be difficult, and might even be illegal, to assign false credit characteristics to testers as a means of ensuring that teammates have identical loan qualifications. This step would be difficult because it would require the cooperation of the firms that maintain the credit records used by lenders. It might be illegal because laws prohibit false statements on credit applications with intent to defraud. We do not believe that testing is a fraudulent activity, because testers would never actually close the loan transaction. But the courts have not yet ruled on this matter and any group that pushes paired testing into the loan-approval stage of the mortgage process might face high legal bills, if not worse. It might be possible to conduct tests using people's actual credit characteristics, but this approach would be administratively difficult because testers would still have to be matched to have the same credit qualifications. As a result, a very large pool of potential testers would be required.

USING DEFAULTS TO MEASURE DISCRIMINATION IN LOAN APPROVALS

Some researchers have used information on differential default rates as a strategy for determining whether or not discrimination occurs at the loan approval stage. This approach is premised on the argument that lenders who discriminate against minority applicants do so by effectively *raising* their underwriting standards—rejecting minorities who meet the standard required of whites, and only accepting minorities who meet a higher standard. If this is the case, minorities who receive loans will be less likely to default than whites. Therefore, if minority default rates are the same or higher than those of whites (other things being equal), lenders must *not* be discriminating.

As it turns out, this simple and intuitively appealing argument runs into severe methodological hurdles when used to measure discrimination in mortgage lending.

The first problem is that equations estimating the impact or race or ethnicity on default are biased if key underwriting variables are omitted from the analysis. Specifically, the default approach yields results that are biased *against* finding discrimination unless it includes *all* variables that a) influence default, b) are observed by the lender at the time of loan approval, and c) are correlated with minority status. The second problem is that the default approach cannot detect discrimination unless some relevant underwriting variables are *omitted* from the estimates of differential default rates, because the analysis requires at least some variables that a) influence default, b) are observed by the lender at the time the loan is approved, and c) are *not* correlated with minority status. Even if all variables that influence default and are observed by the lender are available for analysis (solving problem number one), it is virtually certain that some of these will be correlated with minority status (exacerbating problem number two). In the more likely case that the researcher does not have all this information, there is no way to rule out the likelihood that some of the omitted variables are correlated with minority status, which means that the estimates of discrimination will be understated (problem number one). Even if these two fundamental sources of bias can be avoided, the analyst might still not be able to obtain unbiased estimates of discrimination using the default approach, because the characteristics of the borrower that are unobserved by the lender and by analysts (characteristics, as noted earlier, that on average can give lenders an incentive to practice economic discrimination) can also introduce bias—generally a downward bias.

A new specification of the default approach asks a new question in an effort to overcome the problems just discussed. The new question is this: Is the minority-majority default difference greater in locations where the lending industry is more concentrated, a situation that presumably gives the lender more leeway to discriminate? However, this new specification does not save the default approach because it depends on two virtually mutually implausible assumptions: a) that if lenders discriminate at all they do it more severely when market concentration is higher, but b) that lenders do not alter any other aspect of their underwriting procedures in the presence of more concentration. The study that uses this new approach explicitly violates the second assumption by showing, in another context, that lenders ration credit more aggressively in more concentrated markets. Thus, even this new approach cannot answer the question of how much discrimination exists in mortgage markets.[19]

REDLINING

In addition to potential discrimination against minority *borrowers*, lenders may discriminate against minority *neighborhoods* (either through differential treatment or disparate impacts). Discrimination based on location is often referred to as redlining, because historically, some lending institutions were found to have maps with red lines delineating neighborhoods within which they would not do business. Redlining is typically measured in two ways. The first focuses on the case-by-case process of approving or denying loans. Redlining is said to occur when otherwise comparable loans are more likely to be denied for houses in minority neighborhoods than for houses in white neighborhoods, even though all credit-relevant characteristics of applicants, properties, and loans are the same. Studies of this kind face the same basic challenge as studies of discrimination against individual loan applicants, namely to find a data set with adequate information on loans and applicants, including applicant credit history. The only studies of redlining with such information turn out to be based on the Boston Fed Study's data. Two of these studies find no evidence of redlining but a third, which accounts for the relationship between redlining and private mortgage insurance, finds redlining against low-income neighborhoods, which in Boston are almost all largely black.[20]

The second approach to the measurement of redlining focuses on aggregate lending outcomes. In this context, redlining is said to occur when minority neighborhoods receive a smaller volume of mortgage loan funds than white neighborhoods that are comparable in all relevant respects. This approach has received more empirical attention than the individual-level approach. Most studies focus on outcomes by census tract, while one attempts to isolate the role of lenders.[21] Many studies in this literature find signs of redlining, but others do not, and no consensus has emerged on the extent of redlining or appropriate methods for measuring it.

NEGOTIATING LOAN TERMS

At the loan approval stage, lenders not only decide whether to make a loan. They also set the terms of the loan, including the interest rate, loan fees, maturity, loan-to-value ratio, and loan type (conventional, adjustable rate, FHA, and so on). This is an important issue, because fair housing complaints often involve unfair terms and conditions for loans, and there is reason to believe that the lending industry may be in the process of shifting from "credit rationing"—where customers perceived to be high-risk are denied loans—toward "risk-based pricing"—where these same customers are simply charged a higher price for loans.

One early analytic study found discrimination against blacks and Hispanics in interest rates and loan fees, but not in loan maturities. Another also found discrimination against blacks in the setting of interest rates. Both used extensive statistical controls to isolate the effect of race and ethnicity from the effects of other factors. Two more recent studies reviewed for this report examine discrimination in overages, defined as the excess of the final contractual interest rate over the lender's official rate when it first commits to a loan. Both of these studies find cases in which the overages charged to black and Hispanic borrowers are higher than those charged white customers by a small but statistically significant amount.[22]

With respect to type of loan, several research studies have examined the probability that a borrower will receive an FHA loan instead of a conventional loan. Both borrowers and lenders have an interest in this choice. FHA guidelines are relatively flexible, and may qualify borrowers who do not meet conventional underwriting standards. This makes them attractive to both borrowers and lenders. But FHA loans may cost more than conventional loans, and may also permit higher fees to the lenders. It is clear that minority borrowers, in fact, rely more heavily on FHA loans than do white borrowers. What the analytical literature shows is that, controlling for borrower, property, and loan characteristics, minorities are still more likely than whites to receive FHA loans. One plausible explanation is that minorities are steered in the FHA direction because of discrimination in the market for conventional mortgages.[23]

Stage 4: Loan Administration

Even after a mortgage loan has been approved and issued, there is still room for potentially harmful discrimination on the basis of race and ethnicity. In particular, lenders can and do exercise considerable discretion about how to treat people who have missed one or more payments. They can accept penalties for several months, they can negotiate a repayment schedule to bring the borrower back up to date, or they can start foreclosure proceedings. There is no systematic research evidence on potential discrimination in loan administration. However, anecdotal evidence—as shown, for example, on the investigative reporting TV show *60 Minutes*—suggests that at least some lenders take a harsher stance in foreclosure decisions against minority customers than against whites. In extreme cases, some lenders may even increase their profits by making loans that encourage defaults, initiating foreclosure proceedings as soon as payments are missed, and selling the property for a profit. This is clearly discriminatory behavior in itself. But if this practice occurs with any frequency, it also biases downward statistical estimates of discrimination in the initial mortgage lending decision, because it means that some lenders' acceptances of minority loans are made with the express intent to foreclose as soon as possible.

A Look At The Process From A Lender's Perspective

It is intriguing that neither the Decatur Federal Savings and Loan nor Boston-area mortgage lenders apparently believed that discrimination would be found in the investigations of their practices. If they had, they might not have cooperated so fully, in the first case with the Justice Department and in the second case with the Boston Fed survey. But the evidence reviewed here strongly suggests that their belief that they were not discriminating was false. Is it possible that lenders discriminate unknowingly? Can discrimination occur in the mortgage lending process even when people believe they are treating all applicants fairly? The answer to this question is vitally important in the quest for strategies to eliminate discrimination in home mortgage lending.

In an effort to shed some light on the issue, this project assembled a site visit team and conducted in-depth, structured interviews about the mortgage lending process to determine what role employees played in decision making, whether they were aware of fair lending requirements, how they perceived fair lending issues, and how they were monitored by their company for fair lending compliance. After the interviews, the impressions of our site-visit team were compared with standard HMDA indicators of the lender's fair housing performance.[24]

PROFILE OF A MORTGAGE LENDER

The lender in question is a mortgage company, fully owned by a builder who develops housing for low- and moderate- as well as middle- and upper-income households. The lending institution has 31 employees and currently originates mortgages worth about $70 million a year. Its loans are almost all for home purchases rather than refinancing, and it processes more minority applications than the average for its metropolitan area. The loan origination staff includes six loan counselors responsible for meeting with prospective customers and taking applications, and four loan processors responsible for collecting the documentation needed to complete the applications. The branch manager of the company supervises both these groups. The company also has an underwriter who is responsible for assessing completed applications for government-insured loans (conventional loans are underwritten by an outside firm). The branch manager and the underwriter both report directly to the company's president.

The case-study lender posts a description of fair lending laws in its office and has a one-paragraph fair lending statement, written by the president, in its procedures manual. This statement describes the company's mission as extending credit to all qualified borrowers. Two of the six loan counselors currently on staff are Hispanic; none are African American. When new loan counselors are hired, they receive an orientation session and extensive on-the-job training. But none of these training procedures explicitly addresses fair lending issues or requirements. All new employees receive a copy of the fair lending statement in their procedures manual. Most said they had not read it.

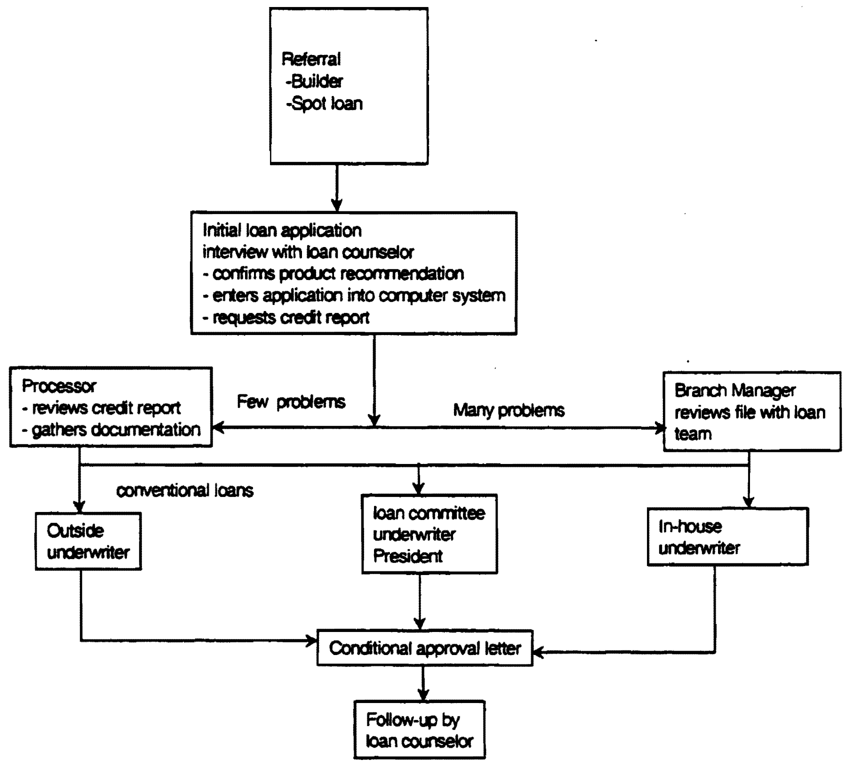
The research team was impressed by the high level of personal satisfaction that the lender's staff received from their jobs. All of the staff members who were interviewed expressed great pride in their ability to work with borrowers who have problematic loan applications. Staff said they frequently originate loans to applicants who may at first appear to fail a number of underwriting guidelines, and expressed great satisfaction from helping people achieve the dream of homeownership. All of the lender's staff expressed a strong commitment to fair lending, which they defined as treating everybody the same. Staff also expressed admiration and respect for the institution's president; according to one respondent, "She is my role model."

THE LENDER'S ORIGINATION PROCESS

Exhibit 3 outlines the mortgage review process implemented by our case study lender. Because most applicants already have a purchase contract on a house built by the owner of the mortgage company, all respondents said that they have a strong incentive to originate as many mortgages as possible, irrespective of race or ethnicity. As a result, there are no pre-qualification assessments. Every customer completes a hard-copy loan application, and the information from this application is then entered into an electronic version of the form. The mandatory information on race is only entered on the electronic form, in an area that is not visible on the initial computer screen. None of the loan counselors ever predicts the outcome of the application review process for the customer.

Once a customer leaves, the loan counselor adds comments to the computer-version of the loan application. None of the respondents said it was acceptable to enter subjective "feelings" about an applicant. Instead, comments are factual in nature and relate to the applicant's employment history, credit history, income and whether the loan is government-insured or conventional. Because these comments are entered on the electronic version of the application, they are accessible to everybody in the company and provide information to the underwriter and branch manager about any issues that warrant attention. The rest of the origination process includes multiple reviews, so that no single employee can unilaterally make a decision about any loan application. The status of every pending loan application is discussed at weekly staff meetings, which are attended by the loan counselor, the processors, and the branch manager. An applicant who meets all the underwriting guidelines will receive a mortgage subject only to the receipt of an appraisal report. Borrowers who fail some underwriting guidelines have to comply with specified conditions. Even very complex and hard-to-fulfill conditions do not preclude an applicant from receiving a mortgage from the lender, however. In fact, the lender sometimes originates mortgages to applicants a full year after the application was initially processed. Many staff members

Exhibit 3. Lender's Origination Process



said the company originates a lot of loans to applicants who would not have received mortgages from other companies where staff are less dedicated to working with marginal borrowers. Most of the time, the branch manager sends applications directly to the underwriters for review. Applications that fail more than one underwriting guideline are sent directly to the president of the company. No application is denied without having been personally reviewed by the underwriter and the president (who together constitute a "loan committee").

The underwriter does not use an automated underwriting system, nor does she use credit scores. Rather, she judges each application by evaluating all the relevant information in the file, without considering race or ethnicity, according to her responses to us. She does not receive any information about the race of the people who receive loans, and could only provide a guess as to the percentage of minorities who receive loans from the company. She did show us some of the letters submitted by applicants explaining past instances of derogatory credit, however, to illustrate the types of credit problems she had to evaluate in making her underwriting decisions. Some of these were handwritten and we asked her who sends those: "Mainly the minorities," was the answer. She added that poorly written credit letters did not invalidate an applicants' reason for a derogatory credit episode.

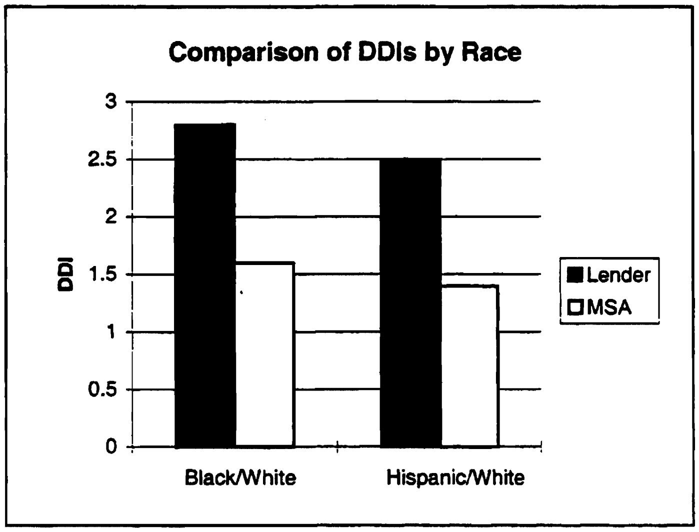
The loan counselors and processors all receive base salaries along with a small commission (10 basis points per loan) on the dollar volume of loans they help process. Because commissions are small relative to base salaries, this payment structure does not appear to create disincentives for employees to work on small loans or applications that take extensive time to process. Moreover, every loan counselor is assigned to a mix of housing developments, including some targeted to lower- and moderate-income homebuyers and some targeted to middle- and upper-income buyers.

Potential for Discrimination

Over the course of a two-day site visit, the research team scrutinized the process used to assess applications, and was favorably impressed by the combination of a highly transparent review process, a strong commitment to qualifying marginal applicants, and the genuine belief by all staff that their process is color-blind. The team's strong expectation was that the lender's HMDA data would show a relatively small denial disparity between white and minority applicants. But that did not turn out to be the case.

The lender's denial rate for minorities is lower than average for its metropolitan area, indicating that it does a good job of qualifying marginal minority applicants (and/or attracts minority applicants with above-average qualifications). But disparities between its denial rates for whites and for minorities are high, compared to metro-area averages (see Exhibit 4). Overall, the lender denies loan applications from blacks 28 percent of the time, compared to only 10 percent for whites. Thus, the white-black denial disparity for this lender is 28/10 or 2.8. On average, lenders in the metro area as a whole deny 39 percent of black applications and 25 percent of white applications, yielding a white-black denial disparity of only 1.6. In other words, the case-study lender's denial disparity rate is almost twice as high as the average rate for lenders in the same metro area. The same pattern holds when denial disparities are broken down by income categories. For example, among moderate-income applicants, the lender's loan denial rate was 2.7 times as high for blacks as for whites, compared to an area average of 1.1. For middle-income applicants, the lender's loan denial rate was 3.1 times as high for blacks as for whites, compared to an area average of 1.2. Relative disparities for Hispanic applicants were on the same orders of magnitude.

Exhibit 4: Differential Loan Denial Rates for the Case-Study Lender



Because so many of its customers have less-than-spotless credit and few resources for a downpayment, most of the lender's originations are for government-insured loans. Further, these are the only loans that go to the firm's underwriter, while conventional loan applications are sent to a third-party underwriter. Therefore, we dropped conventional loan applications from the denial disparity comparison to get a better idea of how the firm did in its primary loan area. The case-study lender's denial rates still showed significant racial disparities. Income-adjusted averages reveal that the lender's denial rates for government-insured loans are consistently higher than the area averages for black and Hispanic applicants and lower for white applicants.

How can we reconcile these disparities with the lender's strong belief that its loan origination process contains absolutely no discriminatory treatment of minority borrowers? There are three possible explanations:

- A large share of the lender's minority loan applicants may actually be poor credit risks. It is possible that because the case-study lender serves more minority customers than other area lenders, these customers may be less creditworthy—on average—than minority loan applicants in the metro area as a whole. If so, the case-study lender's high denial disparities (relative to metro-wide averages) may reflect the diversity of its customer base rather than the possibility of discrimination. However, this explanation seems inconsistent with the evidence that the case study lender approves a larger share of applications (from both minorities and whites) than the average for mortgage lenders metro wide.

- The case-study lender may be applying underwriting standards that have a disparate impact on minority borrowers. In other words, minority customers may be denied at relatively high rates because some of the underwriting standards applied by the case study lender have a disproportionate effect on minorities, and *do not* serve a clear business necessity. This explanation seems inconsistent with the fact that denial disparities between whites and minorities are significantly lower among other lenders in the metropolitan area.

- The lender's staff may be providing preferential treatment to white customers without realizing it. Our case study indicates that loan counselors work hard with customers to overcome problems in their applications. It is possible that the counselors are more at ease with white customers than with minorities, find it easier to communicate and sympathize, or feel more comfortable spending time with whites to solve credit problems. If this is the case, then minorities would be at a disadvantage, not because they were treated badly but because whites were treated better.

Given the information currently available, it is impossible to determine with certainty which of these explanations is correct. It is clear, however, that despite the commitment and good intentions of the case-study lender, denial rates for minority loan applicants are unusually high, relative to denial rates for white customers. And these denial disparities appear to be out of line with comparable ratios for the metropolitan market as a whole.

IMPROVING FAIR LENDING PERFORMANCE

Lending industry experts and fair housing advocates have identified a number of practices and procedures that lenders should implement to reduce the possibility of discrimination against minority applicants.[25] Our case study reveals that the lender we visited has not fully implemented any of these fair lending best practices. Moreover, the research literature on organizational change contains clear lessons about "what it takes" to effectively change behavior within an institution. Taken together, the literature on fair lending best practices and the literature on organizational change suggest seven recommendations for the case study lender:

- ***Find out whether a problem exists.*** Before implementing any institutional changes, management and front-line workers must understand whether they have a real problem. There is a "chicken and egg" problem concerning the data gathering needed to determine whether a lender discriminates. To the extent that the lender does not believe it has a problem, there is no incentive to gather more data.[26] In addition, organizations may face real disincentives to gather data on potential discrimination which might be subpoenaed or otherwise disclosed. However, without detailed information, it is impossible to determine whether discrimination may be occurring. Given the high denial disparities revealed by HMDA measures, the case study lender should conduct a careful file review (comparing outcomes for white and minority applications that had similar credit problems), and conduct paired tests of its own operations.

- ***Make the case for change.*** If there is a problem with discrimination, management must explain why change is fundamental to business success. If fair lending changes are implemented without a clear "business case," employees are likely to perceive them as "tacked on" to otherwise profit-oriented operations for "feel-good" reasons. Under these circumstances, employees may believe that the changes being implemented will actually hurt bottom-line performance, and that they will not last very long or be taken seriously. Unless all employees see fair lending as critical to business success, institutional changes are unlikely to take root.

- ***Create an integrated plan.*** A recurring theme in the literature on organizational change is the importance of creating a coherent strategy, where various management policies mutually reinforce each other. In other words, it is not sufficient to simply implement a training program or new incentive systems without examining how these changes interact with other policies, procedures, and incentives within the institution. Front-line employees should be included in the development of an integrated plan, because they often have good ideas about how different organizational policies contradict one another in practice. The plan should also include feed-back loops, which provide employees with data on their performance, and reward them as performance improves.

- ***Implement clear incentives***. Efforts to promote fair lending within an institution are likely to run up against numerous barriers. Loan counselors may have to spend more time working with small or problematic loan applications in order to ensure equal treatment of minorities. Many lenders—including the case study lender—provide compensation based on the dollar value of loans originated. This aligns incentives with the lender's financial costs and benefits, but may not be consistent with fair lending outcomes.

- ***Change decision-making procedures.*** Fair lending efforts often involve a "second look" and other extra reviews for marginal mortgage applications, especially those of minorities. These reviews can be helpful if marginally qualified minority applications are receiving less attention and assistance than marginally qualified applications from whites. However, multiple reviews can create resentment among front-line staff who may feel that their discretion and decision-making authority has been reduced, and that fair lending is largely a matter of oppressive oversight by outsiders. Ideally, front-line employees could receive frequent feedback on their fair lending performance (along with clear incentives to provide equal treatment), so that they feel empowered to identify problems and find solutions.

- ***Provide fair lending and diversity training***. Employees at all levels may need to gain a better understanding of the forms discrimination can take and the importance of eliminating both differential treatment and disparate impact discrimination. Training should not be presented in terms of fair lending for its own sake, but in terms of satisfying the needs of a diverse customer base as well as complying with existing laws. Programs that promote fair lending from a legalistic or "do-gooder" perspective are less likely to have a lasting impact than those that emphasize the economic rationale for effectively working with a diverse clientele.

- ***Recruit and retain a diverse workforce.*** A lender may be able to foster fair lending by creating a racially and ethnically diverse workforce. It is possible that minority borrowers feel more welcome or comfortable in an office that includes staff of their race or ethnicity. And in some cases, having bilingual staff available may be critical. Moreover, minority staff members may contribute new perspectives to ongoing fair lending efforts.

Institutional change does not happen overnight. Our case study illustrates how a lending institution might be discriminating against minorities despite its best intentions, and reflects the challenges confronting lending institutions as they try to ensure full and fair service to both minority and white customers.

Expanding The Knowledge Base

The evidence and analysis summarized in this report provide persuasive evidence that discrimination in home mortgage lending persists. Although we do not yet have reliable measures of the incidence of discrimination at each stage in the lending process, systematic monitoring and enforcement efforts are clearly justified by existing evidence that discrimination occurs at significant levels. But serious gaps remain in our collective knowledge about the incidence of discrimination, the forms it takes, and the circumstances in which it is most likely to occur. More comprehensive information is needed to help shape effective policy. For example:

- Regulators need reliable data on the incidence of discrimination in different markets and at different stages in the mortgage lending process to effectively allocate scarce enforcement resources.
- Proven methods for detecting discrimination would help regulators and private fair housing groups monitor the performance of individual lending institutions, and might encourage some lenders to monitor their own performance.
- Better knowledge about the forms that discrimination takes and the reasons why institutions and individuals continue to discriminate would contribute to the design of discrimination remedies and best practices.
- Lenders need information about how parts of their organization might be discriminating, and about effective strategies for ending discrimination.

Thus, gaps in the existing body of evidence about lending discrimination limit the capacity of policy makers, regulators, advocates, and lending institutions to design effective enforcement policy, target enforcement resources to the circumstances in which discrimination is most likely to occur, implement corrective remedies, and monitor the effectiveness of these remedies over time. This section outlines five key areas where more information and analysis can and should be assembled to inform both public policy and private action.

LAUNCH EXPANDED RESEARCH ON OFFICE LOCATIONS, OUTREACH, AND REFERRALS

Relatively little research has focused on the extent to which lenders may discriminate by avoiding or limiting contact with minority customers. Evidence from litigation suggests that some lending institutions locate their offices in predominantly white areas. It is also possible that some lenders target direct mail solicitations to white communities, or get their referrals primarily from real estate agents who serve white neighborhoods. If so, advertising and outreach practices steer minority and white borrowers to different lending institutions (which may offer unequal products and services). However, little is known about the extent of these practices, or about their impact on potential homebuyers.[27]

More basic research is needed to understand how white and minority borrowers identify potential lenders, and whether practices such as office location, referrals, or advertising make a difference. If minority access to lending opportunities is significantly constrained by these practices, then best practice agreements and fair housing enforcement efforts can and should include strategies for reaching out to more minority customers. However, without better information about how homebuyers identify potential lenders, it is difficult to know what types of remedies make sense. For example, if most borrowers are referred to their mortgage lender by their real estate agent (as part of the homebuying process), then advertising or office locations may not matter very much.

Understanding how borrowers identify potential lending institutions is also critical to the design of effective testing efforts. Paired testing, whether for research or for enforcement purposes, generally attempts to replicate a typical encounter between a consumer (homebuyer) and a producer (mortgage lender). But we do not yet know enough to be sure what a typical encounter is. In the NFHA tests, individuals posing as first-time homebuyers walked into the offices of lending institutions to inquire about loan terms and conditions. However, this may not be a typical scenario, particularly if most homebuyers are referred to lenders by the real estate agent with whom they are searching for a house.

EXPAND AND REFINE PAIRED TESTING OF LENDERS

Paired testing can and should be expanded at the mortgage pre-application stage. The testing conducted by the NFHA demonstrates that paired testing is feasible, and that it uncovers instances of differential treatment that might otherwise go undetected. Because at least some lenders provide more information and assistance to white borrowers, minorities may be discouraged from submitting applications or may apply for loans with unfavorable terms. Discrimination at this stage cannot be detected through analysis of HMDA data or data drawn from lenders' application files. In fact, paired testing may be the only strategy for uncovering the incidence of discrimination at the pre-application stage. NFHA's testing (and our re-analysis of these test results) represents an important first step. But more work is needed to refine testing procedures and apply them to representative samples of lending institutions.

Paired testing can be effective for both research and enforcement purposes, although the procedures used for these two purposes are not identical. Research testing is designed to yield statistically reliable measures of the incidence (and severity) of differential treatment across a large number of transactions. Because all of the lender testing conducted to date was designed primarily for enforcement purposes, there are limits to what it can tell us in this regard. In order to learn more, the Federal Government should sponsor a paired testing effort whose primary goal is to quantify the incidence and severity of discrimination at the pre-application stage. Indeed, HUD is currently funding a pilot study which will develop several alternative paired-testing methodologies, and estimate levels of differential treatment at the pre-application stage for at least one market area.

Ultimately, such testing studies must be conducted in multiple markets, so that they can capture variation in levels and patterns of discrimination across sites. As discussed earlier, analysis of the NFHA test results suggests that there may be substantial differences between cities, and these differences need to be investigated more thoroughly. In addition, the lending institutions where tests are conducted should be selected systematically, to be representative of all lenders of a particular type or serving a particular market. For example, tests might be conducted for a random sample of lending institutions with offices in a metropolitan area, for a sample of institutions over a certain size, or for a sample of those reporting a certain number of mortgage loans.

Test reporting forms should be as tightly structured as possible, in order to permit objective comparisons of the treatment received by whites and minorities across a large number of tests. This may require advance research—or "scouting"—on the products offered and procedures followed by lending institutions in the study sites. Unless researchers and test supervisors know in advance how lending institutions treat potential borrowers prior to the formal application stage, what different loan products are called, and to whom potential borrowers might be referred, it is difficult for pairs of testers to make identical requests and to accurately record the treatment they receive. Moreover, testers should receive careful training and supervision to ensure that both members of each pair present the same attributes, qualifications, and financing needs, and that both record their treatment fully and accurately.

Finally, more thought needs to be given to the specifics of lender testing scenarios. No single test pair can explore all possible requests that potential borrowers might make at the pre-application stage or all types of lending institutions in the market. The NFHA tests paired minorities and whites posing as relatively uninformed customers who were well qualified for the types of financing about which they were inquiring. This scenario makes sense because it gives lenders the discretion to suggest different products, request different levels of information, or offer different amounts of assistance. However, other scenarios might capture different forms (and possibly different levels) of discrimination. For example, there is good reason to believe that marginally qualified whites receive more assistance and encouragement in correcting credit problems than do marginally qualified minorities. Thus, a study in which partners posed as marginally or poorly qualified borrowers might elicit different responses from lenders than a study in which testers pose as well qualified applicants. The results of research testing could prove to be extremely sensitive to the specifics of the test scenario.

At the same time that work on research testing proceeds, fair lending enforcement testing should be refined and expanded. Pre-application testing is essential for finding out if lenders are discouraging minority borrowers from ever applying, steering minorities to apply for particular loan products, or referring them to other types of lending institutions. Thus, this type of paired testing plays a critical role in the Federal Government's efforts to monitor fair lending compliance and to investigate complaints of discrimination. Fair housing organizations should be encouraged and supported in their efforts to conduct rigorous pre-application testing, both in response to complaints and to assess the extent to which differential treatment may be going undetected in the communities they serve. Moreover, lenders should be encouraged to conduct "self-testing," as a way to monitor the performance of their own operations. Experimentation with different testing scenarios should be encouraged, to reflect different classes of potential borrowers, different segments of the lending industry, and different types of pre-application requests.

Testing should not be ruled out as a strategy for investigating and measuring discrimination beyond the pre-application stage. As discussed earlier in this report, paired testing appears to be the only research methodology that would disentangle differential treatment discrimination from disparate impact discrimination at the loan approval stage. Federal law makes it illegal to provide false information on a credit application,[28] and many people believe that this precludes full application testing of mortgage lending institutions. However, some testing advocates argue that submitting false information as part of a paired test—when the tester does not actually intend to borrow money or incur any other financial obligation—does not violate this law. So it is possible that some organizations may be willing to incur the risk of conducting paired testing beyond the pre-application stage, or that the Federal Government could issue guidance that would allow and encourage greater use of testing. Moreover, it may be feasible to design a paired testing study using the actual income and credit characteristics of testers, although the challenge involved in recruiting equally matched testers would be substantial.

Some researchers have also argued for the use of *non-paired* testing of mortgage lending decisions. This would involve finding a pool of actual candidates for mortgage loans. The applicants would then file genuine loan applications and the progress that they made through the loan application and approval process would be monitored and documented. Analysis would then focus on differential treatment of applicants from differing racial and ethnic backgrounds in loan approvals and, in the case of approved loans, in the loan amount, interest rates, maturity, loan type and collateral. Non-paired testing could provide definitive estimates of the overall incidence of discrimination in loan approvals, but only paired testing can reliably distinguish differential treatment discrimination from disparate impact discrimination.

Conduct a Rigorous Statistical Analysis of Mortgage Approvals Nationwide

The Boston Fed methodology should be replicated for more cities and enhanced to respond to the critical methodological issues discussed in this report. The Boston Fed Study constitutes the strongest and most complete analysis of discrimination at the loan approval stage. By assembling data on applicant characteristics and credit histories, it enabled researchers to estimate the extent to which minorities are more likely to be denied a mortgage loan, other things being equal. Despite the unprecedented scrutiny and criticism to which this study has been subjected, our re-analysis shows that it clearly disputes claims that blacks and whites receive equal treatment from the lending industry. However, this study is not able to distinguish differential treatment discrimination from disparate impact discrimination. And it cannot completely eliminate the possibility that high denial rates for minorities result from differences in their ability to meet legitimate underwriting criteria—criteria that meet the business necessity test. Moreover, the Boston Fed Study applies to only one urban area at one point in time. Comparable analysis for a representative sample of market areas is needed to assess the persistence of discrimination over time and across markets.

A multi-site study of discrimination in loan approvals should build upon the intensive review and criticism generated by the Boston Fed Study. In particular, a national study should invest significant time and attention in the collection and verification of complete and accurate data on borrower characteristics, loan characteristics, property characteristics, and credit history to guard against omitted variables and data errors that may bias results.[29] Because of widespread differences between whites and minorities in income, wealth, property values, and credit histories, analysis which fails to account fully for these factors may seriously overstate the extent of discrimination in mortgage loan approvals. Moreover, future analysis should explore alternative versions of a loan approval model, and test extensively for possible inter-relationships among explanatory variables in order to generate unbiased results.

In order to test the hypothesis that high rejection rates for minorities are entirely due to legitimate underwriting criteria, researchers need to assemble and analyze data on loan performance and defaults as well as information on loan applications and originations. As discussed earlier, evidence of higher default rates among minority borrowers than among whites *does not* prove the absence of discrimination at the loan approval stage. However, analysis of loan defaults does have an important role to play in the analysis of possible disparate impact discrimination. Specifically, underwriting policies and practices that disproportionately affect minorities even when they are even-handedly applied are discriminatory under the law if they do not serve a business necessity. Thus, if an underwriting criterion or requirement systematically disqualifies more minorities than whites, but does not reliably predict future loan performance, it is discriminatory. In fact, even if a criterion did predict future loan performance, it might be considered discriminatory if it could be replaced by an alternative criterion that had less of a disproportionate adverse effect on minorities. Data on underwriting criteria and loan terms, borrower and property characteristics, and long-term loan performance all need to be linked to support definitive analysis of disparate impacts in home mortgage lending.[30]

Finally, statistical analysis of discrimination in the loan approval process should attempt to distinguish discrimination based on the borrower's race or ethnicity from discrimination based on the racial or ethnic composition of the neighborhood in which a property is located. The existing empirical evidence on redlining (discrimination based on neighborhood composition) remains inconclusive. It may prove difficult to disentangle the effects of applicant race and neighborhood race, because most blacks currently live in black neighborhoods while most whites live in white neighborhoods. Nevertheless, the distinction is an important one from a policy perspective.

DESIGN AND CONDUCT RESEARCH ON LOAN TERMS AND CONDITIONS

To date, relatively little statistical analysis has focused on the potential for discrimination in loan terms and conditions. Fair housing complaints often involve unfair terms and conditions for mortgage loans, and there are some indications that the lending industry is in the process of shifting from credit rationing to risk-based pricing. In other words, lenders may be more likely to charge higher interest rates and/or fees for customers who they perceive to be risky, rather than denying them financing altogether. Thus, it will be increasingly important to understand how interest rates and fees are determined, and to analyze the potential for either differential treatment or disparate impact discrimination in this area.

This issue is closely related to questions about credit-scoring. Both risk-based pricing and credit scoring schemes rely on data (or assumptions) about how the specific characteristics of borrowers relate to loan performance. More specifically, these schemes predict—or "score"—the risk associated with a particular borrower, based on past experience. Proponents of these systems argue that they can expand minority access by removing "human bias" from the decision-making process. Skeptics of risk-based pricing and credit scoring argue that the experience from which these predictive models are based may not be sufficiently diverse to reflect the favorable performance of loans to minorities, and that the variables used in these models may put minorities at an unfair disadvantage. Rigorous, objective analysis of the relationship between various borrower characteristics and loan performance is critically needed. Otherwise, these schemes may simply institutionalize disparate impact discrimination by imposing rules that put minorities at a disadvantage but that do not serve any business necessity.

In addition, researchers need to systematically investigate the uses of risk-based pricing and credit-scoring schemes, analyzing the criteria and procedures lenders use to determine interest rates and fees for individual borrowers. This type of research should be used to develop methods for analyzing the potential for either differential treatment or disparate impact discrimination. As several existing studies point out, it is not sufficient simply to compare the final interest rates charged to different groups. Instead, analysis should compare final interest rates to the rates originally quoted when borrowers first inquired. And researchers should attempt to collect and analyze information on various loan fees, again exploring differences between "advertised" and "actual" fees.

FURTHER EVALUATE "BEST PRACTICES" FOR REMEDYING DISCRIMINATION

In order to achieve significant reductions in mortgage lending discrimination, regulatory agencies must do a better job of identifying institutions that are discriminating. But in addition, both regulators and lenders need to know what it takes to eliminate discriminatory practices. To the extent that discrimination is blatant and intentional, designing corrective remedies may be relatively straightforward. But much of the evidence summarized here suggests that lending institutions may be discriminating without realizing it, through policies and procedures that have a disparate impact on minority borrowers, through subtle differences in the level of encouragement and assistance provided to whites and minorities, or through unexamined assumptions about the types of products and terms for which minorities can qualify. Lending institutions may believe that their practices and decisions have been "color-blind," and the institutional changes they need to make to eliminate discrimination may not be obvious.

Fair lending advocates and industry experts have identified a set of strategies that lending institutions should implement in order to comply with anti-discrimination laws. Although these "best practices" appear logical and worthwhile, their effectiveness has not been systematically evaluated. Currently, there is a tendency to identify lending institutions as "high performers" if they are implementing a widely accepted set of best practices, not because they have eliminated unequal treatment of minorities. In other words, researchers need to compare fair lending performance for institutions with and without these best practices, or for institutions implementing different remedial strategies. The goal of this research is to test to efficacy of various remedies and institutional reforms that lenders implement.

Finally, lending institutions need tools they can use to monitor and assess their own anti-discrimination efforts. The "stick" of litigation or regulatory action obviously creates an important incentive for lenders to care about the potential for discrimination in their policies and procedures. But lenders cannot take action if they do not realize that they are discriminating, and neither regulators nor fair housing groups have sufficient resources to investigate all lending institutions. Self-testing is one strategy lenders can and should use to monitor their performance, and identify any problems that may exist. Research efforts should refine and promote practical methods for lenders to monitor and assess their own performance could help advance the cause of equal access to mortgage loans for minority homebuyers.

Endnotes

[1] The Fair Housing Act, 42 U.S.C.A. §3601 *et seq*; The Equal Credit Opportunity Act, 15 U.S.C.A. §1691 *et seq*; and The Civil Rights Act of 1866, 42 U.S.C.A. §§1981, 1982.

[2] Although Federal law also prohibits discrimination in housing based on sex, family composition, religion, and disability, this report focuses on the issue of racial and ethnic discrimination.

[3] For a comprehensive discussion of the myriad and complex issues involved in legal and analytic investigations of mortgage lending discrimination, see Goering and Wienk (1996).

[4] This comprehensive review, edited by Margery Austin Turner and Felicity Skidmore, includes chapters on paired testing evidence (by Smith and DeLair), on statistical studies (by Ross and Yinger), and on the institutional context in which discrimination persists (by Temkin, Levy, and Levine). It is entitled, *Mortgage Lending Discrimination: Review and Analysis of Existing Evidence.*

[5] This report does not address potential discrimination by other important actors—such as real estate brokers, appraisers, insurers, and secondary loan institutions—who are not direct decision makers in the mortgage lending decision.

[6] We use the term "color-blind" in this paper to refer to policies and practices that appear to treat people equally regardless of race or ethnicity.

[7] See Kim and Squires, 1995.

[8] For more information on the cultural affinity hypothesis, see Longhofer, 1996; Hunter and Walker, 1996; Black, Collins, and Cyree, 1997; and Bostic and Canner, 1997.

[9] For more information on the Decatur Federal case, see Ritter, 1996; and Siskin and Cupingood, 1996.

[10] Testers were paired on these ratios instead of on raw income and loan amounts in order to avoid being detected by the lending institutions as an investigative audit. However, in most instances, minority and white incomes and requested loan amounts were not drastically different. See the chapter by Smith and DeLair in *Mortgage Lending Discrimination: Review and Analysis of Existing Evidence.*

[11] See Smith and Cloud, 1996.

[12] Since the major aim of the Urban Institute's re-analysis was to compare treatment across standard elements to see if differential treatment could be determined from statistical analyses, none of the information in the narrative or open-ended questions was used. This lost information on whether or how lenders may have coached some applicants or offered special exceptions. For that reason, the re-analysis did not attempt to construct a composite measure for each test pair. Rather, it focused on individual treatment items (such as contact length and number of quotes).

[13] The re-analysis of NFHA's paired testing data is fully documented in the chapter by Smith and DeLair in *Mortgage Lending Discrimination: Review and Analysis of Existing Evidence.*

[14] Munnell et al., 1992 and 1996.

[15] See, for example, Avery, Beeson, and Sniderman, 1996; Berkovec and Zorn, 1995; Meyers and Chan, 1995; Siskin and Cupingood, 1996; Glennon and Stengel, 1995; Rosenblatt, 1997.

[16] See the chapters by Ross and Yinger in *Mortgage Lending Discrimination: Review and Analysis of Existing Evidence*.

[17] See Liebowitz, 1993; Horne, 1994, 1997; Day and Liebowitz, 1996; Rodda and Wallace, 1996; Carr and Megbolugbe, 1994.

[18] See Rachlis and Yezer, 1993; Philips and Yezer, 1995.

[19] See Berkovec et al., 1998.

[20] See Tootell, 1996a; Hunter and Walker, 1996; Ross and Tootell, 1998.

[21] For a review of redlining studies at the census tract level, see Schill and Wachter, 1993; also see Phillips-Patrick and Rossi, 1996.

[22] See Schafer and Ladd, 1981; Black and Schweitzer, 1985.

[23] See Shear and Yezer, 1985; Gabriel and Rosenthal, 1991; Canner, Gabriel, and Woolley, 1991.

[24] See the chapter by Temkin, Levy, and Levine in *Mortgage Lending Discrimination: Review and Analysis of Existing Evidence*. Care must be taken not to overstate the findings from this single case study.

[25] These fair lending "best practices" are identified and discussed in Listoken and Wyly, 1998.

[26] It should be noted that the case-study lender is not subject to regular fair lending exams by any Federal financial regulators.

[27] There is some evidence to suggest that real estate agents may provide different loan information and referrals to minorities than to whites. See Turner, Struyk, and Yinger, 1991.

[28] See 18 U.S.C.S. §1014. Note that this would not bar lenders from conducting self-testing.

[29] Although assembling such a data base presents significant challenges, Federal Government regulators have sufficient leverage and resources to obtain the necessary information from lending institutions if they make it a priority.

[30] For more information on the data and analysis required to test the business necessity of key underwriting standards, see Temkin et al., 1998.

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