U.S. Department of Housing and Urban Development
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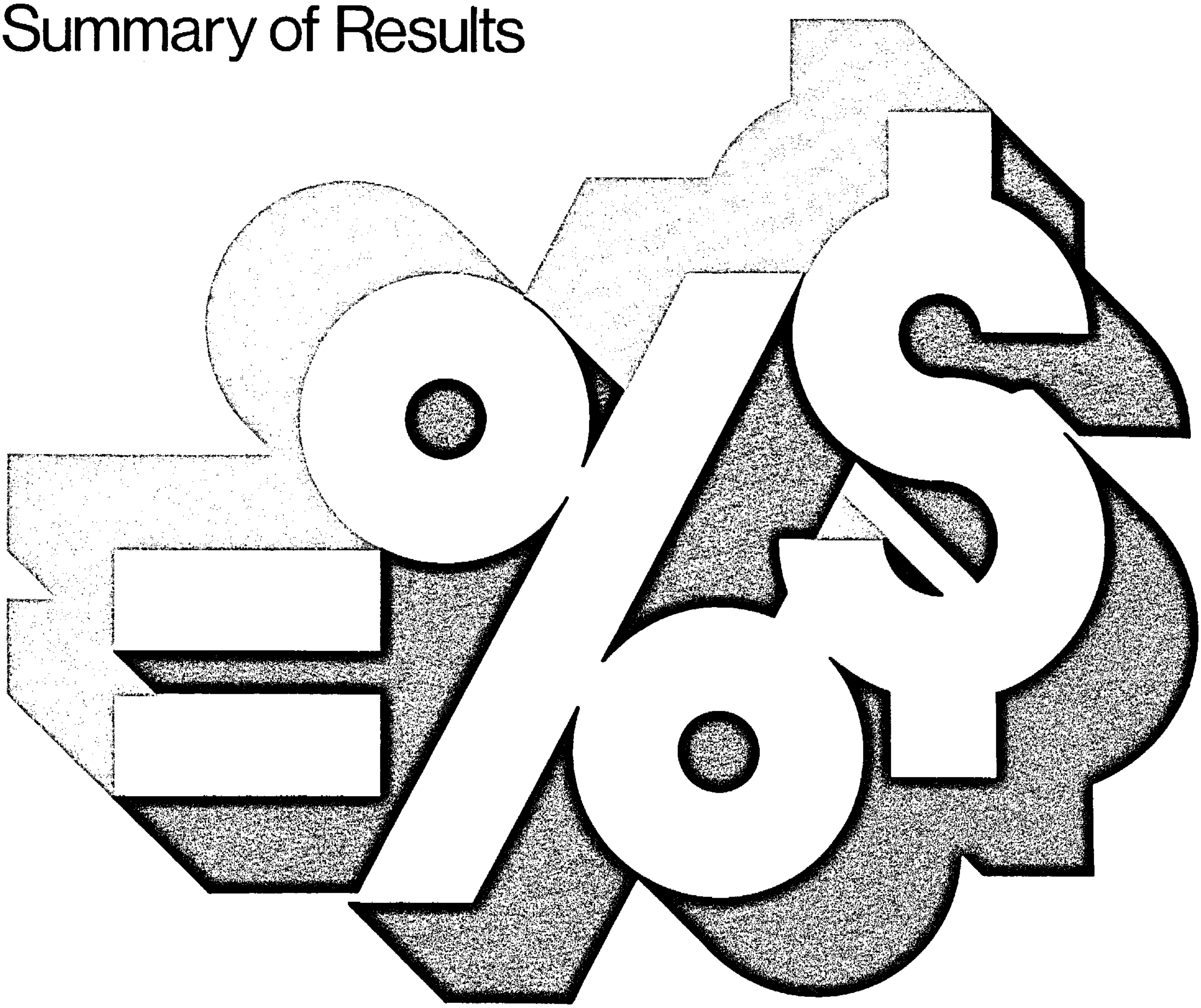
Equal Credit Opportunity: Accessibility to Mortgage Funds by Women and by Minorities

Summary of Results



EQUAL CREDIT OPPORTUNITY
ACCESSIBILITY TO MORTGAGE FUNDS
BY WOMEN AND BY MINORITIES

<u>Summary of Results</u>

by

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FOREWORD

When the Office of Policy Development and Research began its Women and Mortgage Credit Project, we were motivated by our awareness that, in the past, mortgage lenders had discriminated against women. Indeed, lenders themselves have acknowledged their past practice of discounting wives' incomes.

In addition, research on homeownership had also indicated that women were much less likely to purchase homes than men with similar incomes. Was this because women were being discriminated against?

Until recently, it was impossible to test directly for discrimination in the mortgage market because we did not have the necessary data. Then several states -- among them, California and New York -- began to require state-regulated lending institutions to maintain data, including rejected applications, that would permit monitoring of lending practices on the basis of both sex and race. (This happened even before the implementation of the reporting requirements of the Equal Credit Opportunity Act.) So while continuing to urge women and minorities to enter the mortgage market, we decided, as part of the research component of the Women and Mortgage Credit Project, to examine the newly available data.

Note that only two states are involved. Note also that the study cannot tell us whether there is discrimination at the pre-application stage, with lenders discouraging women and minorities from even applying for a mortgage. But with these cautions observed, the study reveals little evidence of discrimination against women in the mortgage market or of the discounting of wives' incomes.

On the other hand, the study shows continued widespread discrimination against minorities and, to our surprise, some evidence of discrimination against "male-only" applicants.

This two-volume report also puts the lie to another assumption -- that social science research only tells you what you already know. It does not. Read on.

Donna E. Shalala
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INTRODUCTION

A variety of federal and state statutes currently makes it illegal for banking institutions, when granting mortgage loans, to discriminate against certain borrowers on the basis of personal characteristics such as race, sex, or marital status or on the basis of the arbitrary use of certain characteristics of the property they wish to buy such as its age or location. These laws reflect two social concerns. One pertains to individual justice and the other to the viability of urban neighborhoods.

Generally accepted concepts of justice demand that individuals not be treated adversely just because they happen to have certain characteristics in common. Membership in certain groups, especially those defined by the color of a person's skin, has in the past resulted in differential treatment. This concept of justice and its historic violations have led to laws that prohibit discriminatory lending on the basis of certain unacceptable categories while allowing differentiation based on other, more objective, factors related to the riskiness of the loan, such as the income of the applicant or the applicant's net wealth. The federal Equal Credit Opportunity Act (as amended, March 23, 1976) embodies this concept of fairness:

> It shall be unlawful for any creditor to discriminate against any applicant, with respect to any aspect of a credit transaction -
> (1) on the basis of race, color, religion, national origin, sex, or marital status, or age (provided the applicant has the capacity to contract);
> (2) because all or part of the applicant's income derives from any public assistance program; or
> (3) because the applicant has in good faith exercised any right under the Consumer Credit Protection Act.

Community activist groups have been instrumental in the development of laws that require disclosure of mortgage lending by census tract or zip code, that encourage financial institutions to "help meet the credit needs of the local communities in which they are chartered consistent with the safe and sound operation of such institutions," or that make discrimination on the basis of the age or location of a building illegal. These groups believe that lending institutions contribute to the declining quality of life in certain urban neighborhoods by refusing to grant mortgages even though demand exists, or by granting mortgages with less favorable terms even though the expected yield and risk of loss are the same as in other neighborhoods. They allege that older or largely minority neighborhoods are usually the target of these practices which are commonly known as "redlining."

This study uses mortgage application data to examine the extent to which urban mortgage lenders discriminate on the basis of borrower characteristics that are illegal and the extent to which allegations by anti-redlining groups are valid. Its focus on the lender's decision to lend, rather than on the aggregate volume of lending by geographic area, differentiates this study from most previous studies.

The banker's mortgage lending decision is only one link in a chain of decisions that determines the extent to which decent housing is accessible to women and minorities. Other actors in the urban housing market have a major role in determining whether or not women and minorities can buy homes. Among them are real estate brokers who may steer buyers away from or toward certain neighborhoods because of their race, sex, or marital status; real estate appraisers who may underappraise certain types of property for discriminatory reasons; or insurance companies who may refuse to sell fire insurance to certain geographic areas or categories of homeowners. The analysis of the role of these actors (with the exception of appraisers) is beyond the scope of this study. One must keep their interactions with mortgage lenders in mind, however, when interpreting the results of this study. For example, if banks do not appear to discriminate against minorities in making mortgage loans, their actions may only be a result of advance screening by real estate brokers who tell their minority clients that they should not even apply for a bank loan.

THE NATURE OF THE STUDY

Lenders may limit or restrict the access to mortgage credit of women, minorities, the elderly, and those trying to purchase houses in allegedly redlined areas in at least four ways. First, a lender may discourage certain potential borrowers from submitting a formal application for a mortgage. Second, the person authorized by the lending institution to estimate the value of, or appraise, the property may differentially and systematically underappraise certain types of properties relative to others. (Underappraisal of this type reduces the maximum loan amount below what it would be with non-discriminatory appraisal.) Third, the lender may use criteria to evaluate loan applications that result in systematic discrimination against certain types of applicants with the result that such applicants face higher probabilities of loan denial or adverse modification than other applicants. Fourth, the lender may arbitrarily impose harsher mortgage terms (e.g., higher interest rates, shorter maturity periods, or higher loan fees) on some applicants than on others. If the potential borrower cannot afford the harsher terms, this practice is tantamount to the outright denial of the loan.

This study deals with three of these four ways that lenders may limit the access to mortgage credit. Since our data base includes only formal applications, we are unable to examine the first method, pre-screening by lenders. This is unfortunate; many allege that pre-screening, although illegal, is a widely used way for lenders to practice discrimination. To the extent that our results provide evidence of discrimination at the subsequent stages of the lending process, they suggest that discriminatory pre-screening may exist as well. The reverse is not true, however; absence of evidence supporting charges of discrimination related to formal applications does not imply a lack of discrimination at the pre-application stage.

This summary reports on the examination of allegations of lender discrimination on the basis of one or more of the following prohibited criteria:

- sex of applicant;
- race of applicant;
- age of applicant;
- age of neighborhood;
- racial composition of neighborhood;
- location of property.

By estimating models that control for the creditworthiness of the applicant, the security offered by the property, and the risk of loss to the lender, we test for discriminatory behavior in connection with the following types of lender practices:

- decision to approve, modify, or deny a mortgage application;
- setting of mortgage terms (i.e., interest rate, maturity period, loan-to-value ratio, and loan fees);
- appraisal practices.

Lenders have several options when they receive a mortgage application. They can approve the application with the terms requested by the applicant, they can approve it after modifying the terms, or they can deny it altogether. Modifications can take several forms. Lenders can reduce the loan amount below the requested value, they can increase the loan amount above the requested value, or they can shorten or lengthen the maturity period. We analyze lending decisions by examining the likelihood that lenders will deny or modify a loan application given its characteristics. Higher chances that applications from women or minorities will be denied or approved with a loan amount below the requested amount indicate discrimination against these groups.

We use several approaches in analysing mortgage credit terms. First, we study the terms of the mortgage contract (interest rate, maturity period, and loan-to-value ratio). Since borrowers prefer lower interest rates and lenders prefer higher rates for any given combination of the other terms, our summary focuses on the results with regard to interest rate discrimination. Higher interest rates are evidence of discrimination against women and minorities. Second, we analyze the dollar amount of the reductions in requested loan amounts (downward modifications). Above average reductions in requested loan amounts are another piece of evidence consistent with discrimination. Third, we examine the variation in the loan fees lenders charge for processing loans. Disproportionately high loan fees for women or racial minorities indicate discrimination against members of these groups.

Finally, we analyze the fairness of appraisal practices. Underappraisal of properties in certain locations or of properties being purchased by women or racial minorities is evidence of discrimination against these locations or persons.

STUDY AREAS

Analysis of discrimination in mortgage lending requires detailed information on the objective factors such as the creditworthiness of individual applicants and the security value of the property that legitimately affect the mortgage lending decision, and information on those characteristics of the applicant or the property that constitute illegal discrimination. Fortunately, because California and New York state laws require state-regulated banks to maintain detailed information on all mortgage applications, we were able to obtain the necessary data from state-regulated savings and loan associations in California and all state-regulated lenders in New York state. New York regulates three types of lenders: commercial banks, mutual savings banks, and savings and loan associations.

We study mortgage lending separately for each type of lender in each metropolitan area. In addition, we examine California state-chartered savings and loan associations for each metropolitan area separately for each of the years 1977 and 1978. The New York information covers the period from May 1977 to October 1978 for commercial banks and savings and loan associations. The mutual savings bank data are from an earlier study covering the period May 1976 to October 1977. Tables 1 and 2 summarize the number of mortgage applications analyzed in each study area.

The California and New York data sets are not identical; each has its own strengths and weaknesses. The New York recording form includes, for example, marital status, net wealth, and years at present occupation, all of which are omitted from the California form. However, the New York form records house purchase price and income in interval form only, while California

Table 1

Number of Mortgage Applications by Metropolitan Area and Year: California Savings and Loan Associations

Study Area	1977	1978
Anaheim-Santa Ana-Garden Grove	16,672	12,542
Bakersfield	1,722	1,646
Fresno	3,173	2,850
Los Angeles-Long Beach	38,398	34,792
Modesto	1,885	1,558
Oxnard-Ventura	4,631	3,970
Sacramento	5,163	4,884
Salinas-Monterey	1,860	1,530
San Bernardino-Riverside-Ontario	2,606	2,038
San Diego	7,628	7,508
San Francisco-Oakland	24,766	21,608
San Jose	9,887	7,691
Santa Barbara	1,401	1,254
Santa Rosa	3,419	3,307
Stockton	2,432	2,381
Vallejo-Napa	1,884	1,866

Table 2

Number of Mortgage Applications by Bank Type and Metropolitan Area: New York State[a]

Study Area	Number
Albany-Schenectady-Troy SMSA	
Mutual Savings Banks	6,173
Albany-Schenectady-Troy, Rochester, and Syracuse SMSAs	
Commercial Banks	2,586
Buffalo SMSA	
Commercial Banks	1,434
Mutual Savings Banks	7,408
New York and Nassau-Suffolk SMSAs	
Commercial Banks	4,919
Mutual Savings Banks	
Large sample without sex and marital status	18,696
Small sample with sex and marital status	4,131
Savings and Loan Associations	2,170
Rochester SMSA	
Mutual Savings Banks	3,047
Savings and Loan Associations	1,304
Syracuse SMSA	
Mutual Savings Banks	2,695

a) Sex and marital status information is available for a sufficient number of applications at all commercial banks and savings and loan associations, but at only the mutual savings banks in the New York-Nassau-Suffolk metropolitan area.

provides much more precise and detailed information on these items, including the separate incomes of the applicant and co-applicant. In addition, the California form provides information on the building's age and the final terms of the mortgage contract which, except for the loan-to-value ratio, are not available in New York. By relying on both data sources, this study can focus on a broader range of issues than would be possible with a single data set. In particular, the New York information makes possible a test of discrimination on the basis of marital status while the California data set permits an examination of discriminatory behavior in the treatment accorded secondary income, the setting of mortgage terms, and appraisal practices.

Other major advantages derive from the use of two separate data sets. First, the data cover a wide variety of lending institutions. Second, the data cover a wide range of economic conditions. The rapid economic growth and booming housing market in California contrast sharply with the situation in New York state. In addition, the data allow a wide variety of metropolitan areas to be studied in both states, allowing large areas to be compared with small and rapidly growing areas with those that are growing slowly. For example, the San Jose metropolitan areas is growing more rapidly than the rest of California because of the influx of high technology firms in the "Silicon Valley." In New York, the Rochester area's economy is better off than that of the rest of the state.

Another important consequence of the variety of banks and economic conditions covered by the two data sources is the potential generalizability of the results. Results that are consistent across such a wide variety of circumstances will provide a firm foundation for the formulation of national policy.

The number of separate study areas we analyze varies with the lender practice being examined. In some cases data availability limitations reduce the number of study areas. For example, inadequate sample sizes keep us from separating downward and upward modifications in some study areas, thereby reducing the number of California study areas from 32 (16 geographic areas each for 1977 and 1978) to 22 between the denial and downward modification models. In addition, in California we selected four metropolitan areas (Fresno, Los Angeles-Long Beach, San Francisco-Oakland, and San Jose) for intensive study. Only in these four areas do we analyze mortgage credit terms and appraisal practices. Since we separately study two years in each, the credit terms and appraisal model results are based on a total of 8 study areas.

FINDINGS

The analysis indicates that, as expected, objective factors such as the ratios of requested loan amount to income and to appraised value explain the vast majority of lending decisions. Applications are more likely to be denied or modified downward as either or both of these ratios increase. Similarly, applicants with more income or more net wealth, and properties located in relatively risk-free neighborhoods (e.g., with little likelihood of being adjacent to vacant buildings) are more likely to be approved. At the same time, the evidence supports several of the allegations that lenders discriminate on the basis of the race, sex, or age of the applicant, the age or racial composition of the neighborhood, and the geographic location of the property. The remainder of this summary describes our findings on the extent to which lenders in California and New York provide equal opportunity in mortgage lending.

Sex and Marital Status

Testing for discrimination on the basis of sex is complicated by the fact that lenders, to the extent they discriminate, may not discriminate equally against all members of a particular sex. For example, they may discriminate against female applicants who are of childbearing age (under 35) but not other female applicants. The allegations relating to sex discrimination indicate that the preferable method of analysis would include a detailed breakdown of household categories that takes into account whether or not the female applicant is of childbearing age or is employed. The distinction between working and nonworking female applicants reflects the allegation that lenders discriminate against applications where at least part of the income comes from a supposedly unreliable source, the earnings of the working woman. The breakdown between women of childbearing and nonchildbearing age captures a potential distinction made by lenders who believe that possible pregnancy increases the probability that a woman will leave the labor force or will incur additional expenses.

Various organizations also allege that lenders use marital status as a basis for discrimination. To test whether lenders treat marital status differently depending on the sex of the applicant, it is important to examine the sex and marital status of the applicant simultaneously. Unfortunately, marital status information is only available in our New York data set.

In general, we compare various types of applicants to a type that is least likely to be discriminated against; in this case, it is the joint application of a male-female couple with the woman beyond childbearing age. The employment status of women applicants is treated differently in the New York and California data sets. In New York, we know only whether or not the female applicant works; in California we know the actual income earned by both the applicant and the co-applicant. Therefore, in New York we analyze the working status of women by adding this fact to the description of the types of applicants; the base for comparison becomes a joint application from a male-female couple with a nonworking woman beyond childbearing age.

The allegation of income discounting can be tested more explicitly in California where information on the separate incomes of the applicant and the co-applicant is available. With such data, we can allow explicitly for differential treatment of the income of the primary and secondary workers in each household. In addition, we can test the hypothesis that lenders treat the income of secondary female workers differently from secondary male workers.

The California and New York analyses have sufficient differences in the definition of the sex variables that we summarize the results of each separately.

California. In California, we define the following categories of applications:

- male-female couples with no woman of childbearing age (base for comparison);
- male-female couples with a woman of childbearing age;
- female-only households with no women of childbearing age;
- female-only households with at least one woman of childbearing age;
- male-only households.

We present the results for these categories separately for households with only one worker and for those with two workers earning equal incomes. Table 3 contains a summary of the number of study areas with significant findings consistent with allegations of discrimination for each of six measures of discrimination.

There is limited evidence of sex discrimination in some study areas, but no pattern exists across a large number of areas. We summarize first the results in the upper half of Table 3, those for single wage-earner households.

Male-female couples with a woman of childbearing age have higher chances of denial or downward modification than male-female couples with no woman of childbearing age in 2 of 32 and 1 of 22 study areas, respectively. In these three areas, applications from couples with women of childbearing age are roughly 1.35 times as likely to result in an adverse decision. These

Table 3

Number of Areas with a Finding Consistent with Discrimination on the Basis of Sex or Secondary Income Sources in California[a]

	Higher Chance of Denial	Higher Chance of Downward Modification	Higher Interest Rates	Larger Dollar Amount of Downward Modification	Higher Loan Fees	Under Appraisal
Only one wage earner						
Male-female couples with a woman of childbearing age	2	1	0	1	2	0
Female only households with no women of childbearing age	4	2	0	0	0	7
Female only households with at least one woman of childbearing age	3	0	1	0	2	3
Male only households	3	2	4	0	4	0
Two wage earners with equal income[c]						
Male-female couples with no woman of childbearing age	4	3	0	0	b	b
Male-female couples with a woman of childbearing age	1	0	0	0	b	b

Table 3 (continued)

	Higher Chance of Denial	Higher Chance of Downward Modification	Higher Interest Rates	Larger Dollar Amount of Downward Modification	Higher Loan Fees	Under Appraisal
Female only households with no women of childbearing age	4	4	0	1	b	b
Female only households with at least one woman of childbearing age	1	0	0	0	b	b
Male only households	2	4	1	0	b	b
Number of areas studied	32	22	8	8	8	8

a) A finding is viewed as consistent with discriminatory behavior if applicants from the indicated group have a statistically significantly harder time receiving a mortgage or receive mortgages that have statistically significantly harsher terms. The indicated groups of applicants are compared to male-female couples with no woman of childbearing age and only one wage earner.

b) The income source variable did not have a role in these models.

c) We have selected two wage earners with equal incomes to illustrate our findings. The findings, however, apply to two wage earner households with all possible divisions of income between the two workers.

same couples pay higher loan fees in 2 of 8 study areas, but the fees average only one percent higher.

Female-only households with no women of childbearing age face higher chances of denial and downward modification in 4 of 32 and 2 of 22 study areas, respectively. The differentials are large: adverse action on these applications is 2.5 to 3.0 times as likely as adverse action on applications from male-female couples with no woman of childbearing age. Although we find no evidence of discrimination against female-only applicants with no women of childbearing age with respect to interest rates, dollar amount of downward modification, or loan fees, we find the properties of these applicants to be underappraised in 7 of 8 study areas. These underappraisals result in downpayments that are as much as 6.4 percent above normal, or an increase of $1000 in the case of a $60,000 mortgage with an 80 percent loan-to-appraised value ratio.

Female-only households with at least one woman of childbearing age are discriminated against less frequently and less severely than female-only households without women of childbearing age.

Male-only households face discrimination through a higher chance of denial and downward modification in 3 of 32 and 2 of 22 study areas. More striking is the conclusion that they pay higher interest rates and loan fees than any of the other sex categories. Their higher interst rates add about $35 per year to the payments on a $60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity period. Their fees are 2 to 6 percent above average.

The lower half of Table 3 shows the results for applications with two wage earners with equal incomes compared with the treatment received by male-female couples having no women of childbearing age and only one wage earner. In general, state savings and loan associations in California favor secondary income more often than they disfavor it. Perhaps they believe that two sources of income reduce the uncertainty about the continuity of future income. Their treatment of secondary income also shows little variations with the sex of the earner; the differences that do exist across sex categories are very similar to those for one earner households.

To summarize, two apparent patterns of sex discrimination by California savings and loan associations emerge: one is the treatment of male-only applicants in the setting of mortgage terms; the other is the underappraisal of the properties of female-only applicants. Although we find evidence of other instances of discrimination against female-only and certain types of male-female households, no other patterns exist across study areas.

New York. In New York, we can examine sex categories separately for the two marital status categories of married and unmarried or separated. The categories of married applicants are:

- male-female couples with a nonworking woman beyond childbearing age (base for comparison);
- male-female couples with a working woman beyond child-

bearing age;

- male-female couples with a nonworking woman of child-bearing age
- male-female couples with a working woman of childbearing age;
- female-only households;
- male-only households.

The categories for unmarried or separated applicants are similar except for the division of the female-only households into those with no women of childbearing age and those with at least one woman of childbearing age. Table 4 summarizes the New York results.

We find only limited evidence of discrimination against married male-female couples who differ from the reference group solely in terms of the childbearing age or working status of the woman. For the three married male-female categories, we find evidence of a higher chance of denial in only one study area: commercial banks in Buffalo are twice as likely to deny male-female couples with a working woman beyond childbearing age than similar households with a nonworking woman.

Stronger evidence of discriminatory lending emerges with respect to the treatment of unmarried or separated male-female households. These appliants face chances of mortgage denial 1.4 to 3.9 times as high as those faced by the married male-female household with a nonworking woman beyond childbearing age in either 2 or 3 of the 6 study areas, depending on the working status or childbearing age of the woman. Regardless

Table 4

Number of Areas with Findings Consistent with Discrimination on the Basis of Sex, Marital Status and Work Status of the Woman in New York[a]

	Higher Chance of Denial	Higher Chance of Downward Modification	Larger Dollar Amount of Downward Modification
Married			
Male-female couples with a working woman beyond childbearing age	1	1	0
Male-female couples with a non-working woman of childbearing age	0	1	0
Male-female couples with a working woman of childbearing age	0	1	0
Female only households	2	0	1
Male only households	3	2	0
Unmarried or separated			
Male-female couples with a non-working woman beyond childbearing age	2	0	b
Male-female couples with a working woman beyond childbearing age	3	1	b
Male-female couples with a non-working woman of childbearing age	2	1	b
Male-female couples with a working woman of childbearing age	2	1	b
Female only households with no women of childbearing age	0	1	b

Table 4 (continued)

	Higher Chance of Denial	Higher Chance of Downward Modification	Larger Dollar Amount of Downward Modification
Female only households with at least one woman of childbearing age	0	0	b
Male only households	4	0	b
Number of areas studied	6	6	5

a) A finding is viewed as consistent with discriminatory behavior if the applicants from the indicated group have a statistically significantly harder time receiving a mortgage or receive mortgages that have statistically significantly harsher terms. The indicated groups of applicants are compared to male-female married couples with a non-working woman beyond childbearing age.

b) Small sample size prevented the examination of the same sex and marital status interactions that were possible for the chance of denial and downward modification models. However, the analysis we were able to conduct indicated that separated persons, as opposed to married or unmarried households, receive significantly larger dollar amounts of downward modifications in one of the five areas.

of marital status, male-female households are more likely to receive modified approvals from savings and loan associations in the New York metropolitan area if the woman is either working or in the childbearing years.

Married female-only applicants are more than twice as likely to be denied as married male-female applicants with a nonworking woman beyond the childbearing age in 2 of the 6 study areas. In addition, these applicants experience larger downward modifications in 1 of 5 study areas. Unmarried or separated female-only households with no woman of childbearing age experience higher chances of downward modifications in 1 of 6 study areas.

Unexpectedly, the strongest evidence points to discrimination against male-only households, regardless of their marital status. They are over twice as likely to be denied as the married male-female household with a nonworking woman beyond childbearing age in two-thirds of the study areas.

In summary, our analysis of lending decisions in New York state provides only limited support for allegations that lenders discriminate against female-only or certain types of male-female applicants. In contrast, the results support the hypothesis that lenders in many areas discriminate against male-only and against unmarried or separated male-female households. Since all but one of the mutual savings banks samples exclude sex and marital status data, these findings relate to New York commercial banks and savings and loan associations with the following exceptions. Married female-only and married, unmarried, or separated male-only applicants are more likely to be denied by mutual savings banks in the New York-Nassau-Suffolk metropolitan area. In addition, these mutual savings banks also exact above-average downward modifications from separated applicants regardless of their sex or work status.

Race of the Applicant

We study the treatment of four groups of racial minorities and compare them with the treatment of white applicants. The groups are:

- blacks;
- Spanish or Hispanics;
- Asians (only in California);
- other minorities.

The results, which are summarized in Table 5, indicate that discrimination against racial minorities is widespread.

Black applicants have significantly higher chances of denial than whites in similar circumstances in 18 of the 32 California study areas and 6 of the 10 New York study areas. Moreover, the differences are large; black applicants are 1.58 to 7.82 times as likely to be denied as are similar white applicants. Although blacks and whites are treated similarly with respect to loan modifications and in the appraisal process, blacks are charged higher interest rates in 2 of 8 areas studied and higher loan fees in 5 of 8 areas studied. We emphasize that we find no evidence that New York commercial banks discriminate against blacks. We find, however, that they discriminate against

Table 5

Number of Areas with a Finding Consistent with Discrimination on the Basis of Race of the Applicant(s) in California (CA) and New York (NY)[a]

	Higher Chance of Denial		Higher Chance of Downward Modification		Higher Interest Rates	Larger Dollar Amount of Downward Modification		Higher Loan Fees	Under Appraisal
	CA	NY	CA	NY	CA	CA	NY	CA	CA
Black	18	6	2	2	2	0	0	5	0
Spanish or Hispanic	10	1[c]	1	1[c]	6	0	0[d]	4	4
Asian	3	b	1	b	4	0	b	3	3
Other Minority	11	1	0	2	2	0	0	0	0
Number of Areas Studied	32	10	22	10	8	8	5	8	8

a) A finding is viewed as consistent with discriminatory behavior if applicants from the indicated group have a statistically significantly harder time receiving a mortgage or receive mortgages that have statistically significantly harsher terms. The indicated groups of applicants are compared to white applicants.

b) Included in other minorities in New York due to small sample size.

c) Due to small sample sizes, Spanish or Hispanic applicants are grouped with other minorities in 6 of the 10 study areas. Therefore, there are only four New York study areas where we could test for discrimination against Spanish or Hispanic applicants.

d) Due to small sizes, Spanish or Hispanic applicants could only be separately identified in 3 of the 5 study areas. They are grouped with other minorities in the 2 remaining areas.

minorities other than blacks or Hispanics.

In California, savings and loan associations consistently discriminate against Spanish applicants. These applicants face higher chances of denial in 10 of 32 study areas, higher interest rates in 6 of 8 areas, and higher loan fees in 4 of 8 areas than whites in similar circumstances. In addition, their properties tend to be systematically underappraised in 4 of 8 study areas. The estimated magnitudes suggest that Spanish applicants are about twice as likely to be denied as are otherwise similar white applicants, that interest rates are slightly higher (0.06 percentage points or less than $33 increase in the annual payments on a 9.75 percent $60,000 mortgage with a 30 year maturity period), and that loan fees are 3 percent higher.

In New York, Hispanic applicants receive approximately the same treatment as white applicants with some important exceptions. Hispanics in the New York City metropolitan area are nearly twice as likely to receive modifications at the hands of savings and loan associations as similar white applicants.

Lenders in California treat Asians approximately the same as white applicants with respect to loan denials and downward modifications. Asians have a higher chance of denial in only 3 of 32 study areas, and higher chances of downward modification in only 1 of 22 study areas. However, their mortgages carry slighly higher interest rates (0.05 percentage points above norm) and are based on small (less than 0.2 percent) underappraisals of the property.

The final category consists primarily of applicants who chose to classify themselves as "other minorities." In New York, we include Asians in this category as well. There is substantial support for the view that these other minorities are discriminated against in California; their chances of denial are higher than similar white applicants in 11 of 32 study areas. The difference is large, ranging from 1.37 to 5.95 times as likely to be denied. This group does not appear to be discriminated against through loan modification, loan fees, or appraisal practices. They do pay slightly higher interest rates (0.6 percentage points above norm) in 2 of 8 study areas.

In New York, other minorities receive treatment similar to that of whites with a few exceptions. New York City metropolitan area commmercial banks and Buffalo commercial and mutual savings banks are 1.80 to 4.23 times as likely to modify the loan applications of these minorities than those of white applicants in similar circumstances.

Age of Applicant

Applicants are grouped into one of five age categories to test for discrimination on the basis of age. The categories are:

- under 25 years;
- 25 to 34 years;
- 35 to 44 years (base for comparison);
- 45 to 54 years;
- 55 or more years.

We selected the middle age group (35 to 44) as the basis of comparison because applicants in that group are considered least likely to be discriminated against. The results are summarized in Table 6. Contrary to our expectations, the middle age (35 to 44) applicants have higher chances of denial in nearly half of the 32 California study areas. In a few areas, however, applicants under 35 or over 44 have higher chances of denial than 35-to 44-year-old applicants. New York state savings and loan associations make it harder for 45-to 54-year-old applicants to obtain a mortgage; these applicants are 1.7 times as likely to be denied by these lenders as are 35-to 44-year-old applicants.

We have substantial evidence that older applicants receive adverse treatment through the modification process. Although the summary of results presented in Table 6 indicates that older applicants (over 44) have higher chances of downward modification than 35-to 44-year-old applicants in only 6 of 22 California study areas, they have significantly higher chances of such adverse action than the youngest applicants (under 25) in 15 of the 22 areas. Applicants over 54 are 1.25 to 2.80 times as likely to receive downward modifications as are applicants under 25. Furthermore, applicants over 45 receive larger dollar amount reductions in their requested loan amounts when they are modified downward than do similar but younger applicants; the differences range from 12 to 163 percent.

New York state lenders seem only slightly more likely to modify older than younger applicants, but it is the older applicants who receive the larger dollar amount reductions in their requested loan amounts. The difference in reductions ranges

Table 6

Number of Areas with Findings Consistent with Discrimination on the Basis of Age of the Applicant in California (CA) and New York (NY)[a]

	Higher Chance of Denial		Higher Chance of Downward Modification		Higher Interest Rates	Larger Dollar Amount of Downward Modification		Higher Loan Fees	Under Appraisal
	CA	NY	CA	NY	CA	CA	NY	CA	CA
Under 25 years	0	0	0	1	4	0	0	5	2
25-34	2	0	1	1	0	1	0	1	1
45-54	2	2	3	2	4	5	2	0	3
Over 54	0	0	3	1	2	2	2	1	3
Number of Areas Studied	32	6	22	6	8	8	5	8	8

a) A finding is viewed as consistent with discriminatory behavior if applicants from the indicated group have a statistically significantly harder time receiving a mortgage or receive mortgages that have statistically significantly harsher terms. The indicated groups of applicants are compared to 35-44 year old applicants.

from 67 to 146 percent.

Both the young and the old applicants receive slightly higher interest rates than those in the middle age range. The differential would add about $30 to the annual payments on a $60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity period.

Somewhat surprisingly, the youngest applicants face the highest loan fees. Applicants under 25 pay loan fees that are 2 to 3 percent above those paid by 35-to-44-year-old applicants.

The properties of older applicants are underappraised in 3 of 8 study areas, but the differential is small. The required downpayment would rise by only 0.8 to 2.0 percent on a mortgage with an 80 percent loan-to-appraised value ratio. This would amount to less than $300 with a $60,000 mortgage.

Redlining

Various organizations allege that lenders discriminate against certain mortgage applicants because of the neighborhood in which the property they wish to purchase is located. Our analysis focuses on three types of neighborhoods alleged to receive adverse treatment:

- specific neighborhoods that community groups have alleged to be redlined;
- older neighborhoods;
- largely minority neighborhoods.

We summarize our findings with respect to each type of allegation in the following subsections.

Property location. In all the New York and a few of the California metropolitan areas, we are able to examine local allegations that certain neighborhoods are redlined by lenders. In the other metropolitan areas in California, we are only able to compare lending decisions in the central city(s) with those in the surrounding suburbs. In all cases, lending decisions on applications for mortgages on properties in allegedly redlined neighborhoods or in the central city are compared with decisions on otherwise similar applications on suburban properties.

In California, we have information containing allegations that lenders redline 12 neighborhoods in Los Angeles County, one in the city of Oakland, and one in the city of Sacramento. The evidence does not support the allegation in Sacramento.

Although lenders are not more likely to deny or modify downward applications for mortgages on properties in the Central Oakland neighborhood than similar applications on suburban San Mateo County properties, they tend to underappraise the properties and impose higher interest rates on the mortgages. The underappraisals increase the downpayment by 4.5 percent with a mortgage for 80 percent of the appraised value. The higher interest rates raise the annual payment by $116 on a $60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity period.

In Los Angeles County, at least one piece of evidence is consistent with the redlining allegations in all but one neighborhood. The results are summarized in Table 7. There are two

Table 7

Number of Areas with a Finding Consistent with Discrimination on the Basis of Property Location: Los Angeles-Long Beach SMSA[a]

	Higher Chance of Denial	Higher Chance of Downward Modification	Higher Interest Rates	Larger Dollar Amount of Downward Modification	Higher Loan Fees	Under Appraisal
Compton	0	0	1	b	0	1
Covina-Azusa	0	1	0	b	2	0
East L.A.-Boyle Heights-Echo Park	1	0	0	b	0	2
Highland Park	0	0	1	b	1	1
Long Beach-Southwest	0	0	0	b	0	0
Pacoima-San Fernando	0	2	0	b	0	1
Pasadena-North Central	0	0	1	b	0	0
Pomona	0	0	2	b	2	2
San Pedro	1	0	1	b	0	1
South Central L.A.	0	0	2	b	1	1
Venice-Santa Monica	0	1	0	b	0	0
West Covina	0	0	0	b	c	c
All alleged redlined neighborhoods together	NA	NA	NA	0	NA	NA
Number of areas studied	2	2	2	2	2	2

Table 7 (continued)

a) A finding is viewed as consistent with discriminatory behavior if applicants from the indicated group have a statistically significantly harder time receiving a mortgage or receive mortgages that have statistically significantly harsher terms. The indicated property locations are compared to the remaining part of suburban Los Angeles County.

b) Due to insufficient observations, all the allegedly redlined neighborhoods had to be grouped together for the analysis of the dollar amount of downward modifications.

c) In these models, West Covina was grouped with Covina-Azusa.

study areas for each type of potential adverse action because of the separate analysis of the 1977 and 1978 data. The following paragraphs describe the consistent findings in more detail.

If a property is located in the East Los Angeles-Boyle Heights-Echo Park or San Pedro neighborhoods, the mortgage application has a higher chance of denial (1.68 and 2.00 times as likely, respectively) than a similar application on a property located in the suburbs. In addition, properties in these neighborhoods are underappraised so that the downpayments are 3 to 6 percent higher than average. Mortgages on San Pedro properties also have substantially higher interest rates which add $327 to the annual payments on a $60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity period.

Applications on properties in the Covina-Azusa, Pacoima-San Fernando, and Venice-Santa Monica neighborhoods have higher chances of downward modification (such modifications are 1.58 to 2.62 times as likely). Applicants wishing to buy properties in the Covina-Azusa and West Covina neighborhoods combined are additionally burdened by having to pay 22 percent higher loan fees than if the property were located in the suburbs. Properties in the Pacoima-San Fernando neighborhood are slightly underappraised.

Mortgages on Compton properties have higher interest rates that add $500 to the annual payments on a $60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity. Properties in Compton are also underappraised so that the downpayment is 5 percent above average.

Mortgages in the Highland Park, Pasadena-North Central, Pomona, and South Central Los Angeles neighborhoods have higher interest rates which add \$63 to \$221 to the annual payments on a \$60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity period. The Pomona differential is the largest and is present in both years. Together with evidence of 20 percent higher loan fees and underappraisals (adding up to 6.8 percent to the downpayment) in both years, the evidence supports the allegation that Pomona is redlined. Applicants with properties in the South Central Los Angeles and Highland Park neighborhoods also pay loan fees that are about 5 percent above average. In addition, Highland Park properties are sufficiently underappraised to increase the downpayment by 5.2 percent on average.

In summary, the findings with respect to discrimination on the basis of property location in the Los Angeles-Long Beach metropolitan area suggest that one area, Long Beach-Southwest, receives no adverse treatment by lenders. Pomona, on the other hand, receives substantial adverse treatment, although not in the form of higher chances of mortgage denial or downward modification. Many of the areas experience adverse treatment of more than one type.

Community organizations allege that lenders redline 25 neighborhoods in the 5 largest metropolitan areas in New York state. The evidence is consistent with 9 of these allegations. Mutual savings banks are more likely to deny mortgage applications if the property is located in the Hudson/Park neighborhood of Albany, the Hillside neighborhood in Troy, or the Fort Greene and Southeast Queens neighborhoods of New York City than in a suburb. The evidence also supports the conclusion that commercial banks are more likely to deny mortgage applications on properties from the combined Central Brooklyn and Fort Greene neighborhoods than on suburban properties. Evidence of redlining from the modification results are weaker. They indicate that mutual savings banks are more likely to modify mortgage applications on properties in the Center City neighborhood in Buffalo, and the Central Brooklyn, Fort Greene, Park Slope, Crown Heights, and East Flatbush neighborhoods in New York City than applications on suburban properties. However, since applications on properties in New York-Nassau-Suffolk neighborhoods that are not alleged to be redlined are also more likely to be modified, these modification results offer little support for the redlining allegations in New York City.

Age of Neighborhood. Table 8 summarizes the number of areas with significant findings consistent with the allegation that lenders discriminate against mortgage applications on properties in older neighborhoods. In New York, the results may be ambiguous because the age of neighborhood measure is associated with objective measures of the risk of loss (such as the condition of specific property) that were excluded because of inadequate information. Fortunately, the California models include the age of the specific property and, therefore, the age of the neighborhood measure (fraction of housing built before 1940) probably provides a reasonably clear test of discrimination

Table 8

Number of Areas with Findings Consistent with Discrimination on the Basis of the Age or Racial Composition of the Neighborhood in California (CA) and New York (NY)[a]

	Higher Chance of Denial		Higher Chance of Downward Modification		Higher Interest Rates	Larger Dollar Amount of Downward Modification		Higher Loan Fees	Under Appraisal
	CA	NY	CA	NY	CA	CA	NY	CA	CA
Older Neighborhoods	8/32	4/10	4/22	7/10	0	2	0	1	0
Largely Black Neighborhoods	7/30	1/10	2/22	0/10	4	2	0	4	1
Largely Spanish Neighborhoods	9/32	c	4/22	c	6	1	c	2	5
Largely Asian Neighborhoods	3/12	c	1/12	c	0	0	c	2	2
Number of Areas Studied	b	b	b	b	8	8	5	8	8

a) A finding is viewed as consistent with discriminatory behavior if applicants from the indicated group have a statistically significantly harder time receiving a mortgage or receive mortgages that have statistically significantly harsher terms. The indicated groups of applicants are compared to white applicants.

b) The number of areas studied varies with the variable because of data limitations, and is indicated after the slash in these four columns.

c) These types of neighborhoods were not studied in New York because of data limitations.

against old neighborhoods. At the same time, the exact meaning of the building age results is probably ambiguous because they could represent risk factors (e.g., building condition) or discrimination (e.g., against old buildings). Tests of the effect of the building age variables in California indicate that they are important; their absence from the New York analysis is thus a significant limitation on the New York findings.

In California, applications for mortgages on properties in older neighborhoods are more likely to be denied in 8 of 32 study areas. A neighborhood that has 10 additional percentage points of old housing (built before 1940) is 1.09 to 1.33 times more likely to be denied in these 8 study areas. In addition, such applications are 1.05 to 1.20 times as likely to be modified downward in 4 of 22 California study areas. The size of the downward modification averages 4 to 5 percent above reductions in applications on properties in neighborhoods with average proportions of old housing. There is no evidence that mortgages on properties in older neighborhoods have higher interest rates or that the properties are systematically underappraised; there is also very little evidence that applicants for such mortgages pay higher loan fees.

In New York, applications for mortgages on properties in older neighborhoods are more likely to be denied in 4 of 10 study areas. If the older neighborhood has 10 percentage points more old housing than average, the chance of denial is 1.08 to 1.17 times as likely than in the average neighborhood. The chance of modification is higher in older neighborhoods in 7 of 10 study areas. If the difference in age of old housing between two neighborhoods is 10 percentage points, the chance of modification is 6 to 19 percent higher in the older neighborhood. Mutual savings banks are responsible for 6 of the 11 significant findings that applications on properties in older neighborhoods have higher chances of adverse action.

Racial Composition of the Neighborhood. The number of significant findings consistent with allegations that lenders discriminate against applications for mortgages on properties in largely minority neighborhoods is also summarized in Table 8.

The chances of denial are higher if the property is located in a largely black neighborhood in 7 of 30 California study areas. The differences in these 7 areas are large; applications are usually more than twice as likely to be denied compared with similar applications in a largely white neighborhood. There is less evidence of discrimination against largely black neighborhoods through downward modifications. But mortgages in these neighborhoods carry interest rates that are 0.09 to 0.24 percentage points higher than similar mortgages in largely white neighborhoods in 4 of 8 study areas. These higher interest rates add about $100 to the annual payments on a $60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity period. Applicants for mortgages on properties in largely black areas pay an extra $27 to $50 in loan fees, about a 5 percent markup. There is little evidence that properties in largely black neighborhoods are underappraised -- the one significant finding would only raise the downpayment by 0.2 percent with a mortgage for 80 percent of the appraised value.

In New York, only one finding is consistent with the allegation that lenders redline largely black neighborhoods. Commercial banks in the greater New York City area are more likely to deny applications for mortgages in predominately black neighborhoods than in neighborhoods with mostly white residents.

In California, we have findings on two additional measures of the racial composition of the neighborhood: largely Spanish and largely Asian. Applications for mortgages on properties in predominantly Spanish neighborhoods have higher chances of denial than similar applications in mostly white neighborhoods in 9 of 32 study areas. The chances of denial in these Spanish neighborhoods are 1.27 to 6.13 times the chances of denial for similar applications in the white neighborhoods. Furthermore, downward modification is 1.25 to 1.70 times more likely in largely Spanish neighborhoods in 4 of 22 study areas. Interest rates are 0.12 to 0.42 percentage points higher when the property is in a largely Spanish neighborhood in 6 of 8 study areas. As a result, the annual payments on a $60,000 mortgage with a 9.75 percent interest rate and a 30 year maturity period are as much as $220 higher than average. The loan fees are also 6 to 11 percent higher in 2 of 8 study areas. And finally, properties are systematically underappraised in 5 of 8 study areas, but the differences are small. For example, the downpayment required to accompany a mortgage for 80 percent of the appraised value increases by no more than 1.2 percent, or $180 for a purchase price of $75,000.

The evidence is consistent with allegations of discrimination against largely Asian neighborhoods in only a few study areas. Applications on properties in largely Asian neighborhoods have a higher chance of denial or downward modification in 3 of 12 and 1 of 12 study areas, respectively. Higher loan fees and underappraisals were found in largely Asian neighborhoods in 2 of 8 study areas.

CONCLUSIONS

Our major findings of mortgage lending discrimination in New York and California are:

- We find only limited evidence of discrimination on the basis of the sex or marital status of the applicant. In particular, our findings do not support allegations of widespread discrimination against female-only applicants or of the widespread discounting of the incomes of secondary workers. The results support the view that lenders discriminate against male-only applicants and against unmarried or separated applicants.
- Discrimination on the basis of the race of the applicant is widespread in both New York and California. This discrimination takes many forms and has substantial adverse impacts on black, Spanish, and other minority applicants.
- We find some evidence that lenders treat older applicants adversely relative to younger applicants, especially in connection with loan modifications.
- The results are mixed with regard to allegations that

lenders redline specific neighborhoods; some neighborhoods appear to be redlined and others do not. In addition, some support is found for allegations that lenders redline older or largely minority neighborhoods.