



VOLUME VIII

FINANCE

An Exploratory Analysis of Race and Gender Disparities in New Jersey Home Mortgage Loans

HISTORICAL RECORD OF MINORITY AND WOMEN-OWNED BUSINESS ENTERPRISES IN PUBLIC AND PRIVATE CONTRACTING IN NEW JERSEY

A Report Submitted to
NJ TRANSIT
and the
Governor's Study Commission on Discrimination in
Public Works Procurement and Construction Contracts

by
The Afro-American Studies Program
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Executive Summary

This report summarizes the results of an exploratory analysis of data on home mortgages in New Jersey for 1990. This analysis is useful for understanding the continuing and historic market barriers to successful entry into entrepreneurship among women and minority citizens residing in New Jersey. Home purchases provide a major vehicle for capital accumulation and transfer of wealth from one generation to the next. In America, the largest single purchase that a typical adult will make is the purchase of a home. And, homes generally represent the single most important asset of the average person's portfolio.

The central conclusion we reach is that there are wide race and ethnic disparities in loan amounts, loan acceptance rates, and loan to income ratios. Yet, there are also wide disparities in the basic qualifications of loan applicants. Thus, although there is compelling statistical evidence of unequal loan outcomes, further analysis will be necessary before one can conclude that these inequalities are the result of discrimination by lenders in New Jersey.

The largest disparities in loan approval rates are between black applicants and white applicants. In New Jersey, 82 percent of white applicants for loans were approved. However, only 65 percent of black applicants were approved for loans. This difference is statistically significant at the most stringent levels. There are significant differences in the loan approval rates between Hispanics and whites. The approval rate for whites is 12 percentage points higher than the 70 percent approval rate for Hispanics. No statistically significant differences were found between the approval rates for Asians and whites.

Gender disparities exist in some aspects of loan transactions but not others. Females are slightly less likely to receive loans than males, although the disparity is not statistically significant. White females are about just as likely to have their loans approved as are white males.

The analysis presented in the report does not test for discrimination in mortgage lending. Such a test would require a far more sophisticated analysis. A procedure is suggested for overcoming one of the most common pitfalls in such tests: the failure to include direct information on credit history.

1. Introduction

This report summarizes the results of an exploratory analysis of data on home mortgages in New Jersey for 1990. This analysis is useful for understanding the continuing and historic market barriers to successful entry into entrepreneurship among women and minority citizens residing in New Jersey. Home purchases provide a major vehicle for capital accumulation and transfer of wealth from one generation to the next. In America, the largest single purchase that a typical adult will make is the purchase of a home. And, homes generally represent the single most important asset of the average person's portfolio.

For the potential business-person, the equity in the home is often the initial source of capital for starting a business. The home can also be used as collateral for obtaining commercial loans for operating expenses and plant and equipment.

Unfortunately, as we found in an earlier volume of this report on Demographic Trends, home ownership rates vary widely among residents of New Jersey by race and ethnic background. Generally, blacks and Hispanics in New Jersey are considerably less likely to own their own homes than are whites. Moreover, among minorities who do own their homes, housing values are substantially lower.

The combination of lower home ownership rates and lower housing values means that minorities in New Jersey are at a

disadvantage initially in obtaining commercial loans and in financing their businesses. This report provides an overview of an important barrier to home ownership and the benefits of use of home equity for business development: lack of access to home mortgage credit.

The data come from information collected by banks and other lenders in compliance with the federal Home Mortgage Disclosure Act. The purpose of the act is to assist federal agencies in the monitoring of compliance with existing statutes and regulations prohibiting discrimination in mortgage lending. The data include information on all home mortgage applications in New Jersey in 1990. Included is information on the type of lender, the purpose of the loan, the amount of the loan requested, the disposition of the loan application (and in the event of denial, the reasons for denial), and demographic characteristics of the loan applicant and co-applicant. Because the data include information on the census tract of the property, we have merged with the above mentioned data information on the demographic characteristics of census tracts.

From the more than five million loan applications made in 1990, 264,809 were applicants in one of the 11 standard metropolitan areas making up New Jersey. We restricted our analysis to: a) New Jersey addresses for property for which a loan was being sought; b) New Jersey addresses for the banks from which the loans were sought; c)

addresses that matched New Jersey census tract information provided by the U. S. Bureau of the Census. This restricted data set was further stratified. All black, Asian, American Indian, Hispanic and "other race" applicants were selected. A ten percent random sample of white cases was drawn. The result was a total of 3709 whites, 3605 blacks, 3626 Asians, American Indians and other races, and 3156 Hispanics. This stratified random sample was used to make comparisons between whites and nonwhites. Because the resulting sample of American Indians and "other races" was so small, we did not perform any analysis on these groups. A second random sample of 15 percent of the entire population was drawn of 11,902 cases. This data set was used to make comparisons between males and females.

What follows is a summary of our findings from an exploratory analysis of these data. The central conclusion we reach is that there are wide race and ethnic disparities in loan amounts, loan acceptance rates, and loan to income ratios. Yet, there are also wide disparities in the basic qualifications of loan applicants. Thus, although there is compelling statistical evidence of unequal loan outcomes, further analysis will be necessary before one can conclude that these inequalities are the result of discrimination by lenders in New Jersey.

2. Comparison of Black vs. White Applications

- Loan applicants are often provided with informal information

about their likely chances of being approved based on initial information about their financial assets and liabilities, the size and terms of the loan, and information about their employment. Thus, it is not surprising that the vast majority of formal loan applicants are approved. In New Jersey, 82 percent of white applicants for loans were approved. However, only 65 percent of black applicants were approved for loans. This difference is statistically significant at the most stringent levels.

However, there are also significant differences in the type of loan that blacks and whites apply for and in the purposes for which they intend to use the credit. Table 1 details the differences in the type and purposed of the loans by race.

TABLE 1

	WHITES	BLACKS
Percent of Applications Classified as:		
Conventional Loans	.9547	.7620
FHA Loans	.0333	.2053
VA Guaranteed Loans	.0120	.0327
Home Purchase Loans	.5277	.5065
Home Improvement Loans	.2289	.3520
Refinancings	.2401	.1387

While the vast majority of loan applications are for conventional loans, blacks are almost three times as likely as whites to apply for VA guaranteed loans and they are almost seven times as likely as whites to apply for FHA loans. Thus, while 95 percent of white loan applications are for conventional loans, only 76 percent of black loan applications are for these loans. These differences are all statistically different from zero.

The purposes of these loans also differ by race. Only about half of the applications in 1990 were for home purchases, slightly higher at 53 percent for whites than the 51 percent for blacks. Yet, less than a quarter of the white loan applications were for home improvement, while more than a third of the black loan applications were for this purpose. Moreover, almost twice the fraction of white loan applications were for loan refinancings as were black loan applications. These differences are all statistically significant.

There are also statistically significant differences in the characteristics of black and white applicants, in the characteristics of the loans, and in the demographic characteristics of the census tracts of the housing. Table 2 details these differences.

Black applicants are almost twice as likely to be females as are white applicants. Their incomes are lower, and they are more likely than whites to have co-signers of a different race. The amounts requested differ by race as well. The average loan amount for whites is \$103,502;

the average among for blacks is \$68,472. Despite the lower incomes among blacks as compared to whites, the loan to income ratios still are far larger for whites than for blacks. Whereas the black loan-to-income ratio is 1.37, it is 1.53 among whites.

TABLE 2

Characteristics of Borrowers, Loans and Census Tracts	WHITES	BLACKS
Percent Female	.1443	.2949
Income	\$76,433	\$53,714
Co-signer Different Race	.0093	.0433
Loan to Income Ratio	1.5311	1.3749
Amount of Loan	\$103,502	\$68,472
Percent Owner Occupied Housing in Census Tract	.6728	.4906
Median Housing Value in Census Tract	\$175,820	\$126,727
Percent of Census Tract that is Black	.0788	.4125
Percent of Households Female-headed in Census Tract	.1029	.1922

There are also substantive differences in the characteristics of the census tracts of the property listed in the loan applications. While more than two thirds of the houses are owner occupied in the census tracts of white applicants, only half of the houses are owner occupied in the census tracts of black applicants. Black applicants sought loans for homes in census tracts that were 41 percent black; white applicants sought loans from census tracts that were 92 percent white. The

median housing value of census tracts of black applicants was \$126,727; of white applicants, it was \$175,820. In the census tracts of black applicants, nearly one-fifth of the households had female heads; in the white census tracts, only about one-tenth of the households had female heads.

In summary, then, blacks were more likely to be denied loans but they also requested smaller loans and had lower loan-to-income ratios. In other ways, however, these disparities are countered by significant differences in the characteristics of the census tracts of the property in question.

3. Comparison of Hispanic vs. White Applications

A statistically significant gap exists between the loan approval rates of Hispanics and whites in New Jersey. The approval rate for whites is 82 percent. For Hispanics it is 12 percentage points lower at 70 percent.

Table 3 details important differences in the types of loan applications. Hispanics are more likely than whites to apply for FHA loans and they are less likely than whites to apply for conventional loans. There are not statistically significant differences in the VA loan application rates between Hispanics and whites. While most of the loan applications are for home purchases, there are significant differences in the rates of application for home improvement loans and refinancings.

Hispanics are more likely than whites to apply for home improvement loans and less likely than whites to apply for loan refinancings.

TABLE 3

	WHITES	HISPANICS
Percent of Applications Classified as:		
Conventional Loans	.9547	.8695
FHA Loans	.0333	.1191
VA Guaranteed Loans	.0120	.0114
Home Purchase Loans	.5277	.5551
Home Improvement Loans	.2289	.2839
Refinancings	.2401	.1521

Table 4 details the differences in characteristics of the borrowers, the loans and the census tracts. Hispanic applicants are more likely to be female, to have co-signers of a different race, and to have lower incomes than white applicants. But yet, the loan-to-income ratios are the same for Hispanic and white applicants, although the amounts requested by Hispanic applicants are smaller than those of whites.

The census tracts also differ. Owner-occupied housing rates are lower; median housing values are lower; and the proportion of

households with female-heads is higher in the census tracts of Hispanics' property than of whites' property. Moreover, Hispanics are more likely than whites to apply for loans for property located in census tracts with large proportions of blacks or Hispanics.

TABLE 4

Characteristics of Borrowers, Loans and Census Tracts	Whites	Hispanics
Percent Female	.1443	.1736
Income	\$76,433	\$61,841
Co-signer Different Race	.0093	.0694
Loan to Income Ratio	1.5311	1.5115
Amount of Loan	\$103,502	\$83,168
Percent Owner Occupied Housing in Census Tract	.6728	.4409
Median Housing Value in Census Tract	\$175,820	\$141,485
Percent of Census Tract Black	.0788	.1958
Percent of Census Tract Hispanic	.0613	.2923
Percent of Households Female-headed in Census Tract	.1029	.1734

In summary, then, Hispanics, like blacks, are less likely to obtain loans than are whites. However, unlike the case of blacks, there is little difference between the loan-to-income ratios between Hispanics and whites. There remain significant differences between Hispanics and whites on many important variables that may explain the unequal loan acceptance rates. But these differences often are much smaller than

those found between blacks and whites.

4. Comparison of Asians vs. White Applications

There are no statistically significant differences in the proportion of white and Asians who were granted loans. While 82.45 percent of white applicants had their loans approved and 81.68 percent of Asians did, this difference is not statistically different from zero. Table 5 shows that there some similarities in the experiences of white and Asian applicants and a few differences. They generally both apply for conventional loans and apply for VA and FHA loans in almost the same proportions. However, Asians are far more likely to apply for loans for home purchase and are considerably less likely to apply for loans for home improvement or refinancing.

Table 6 reveals that in many respects Asians in New Jersey fare better than whites in the mortgage market. The loan amounts they request are larger; and the loan-to-income ratios are higher than those of whites. This favorable experience may stem from the fact that Asian's average incomes are greater than the incomes of whites. While whites recorded an average household income of \$76,433, Asians reported \$90,316. The \$200,599 median housing value in the neighborhoods where Asians sought homes was \$25,000 greater than for whites. There were no differences in the proportion of applicants who were female or in the proportion of the census tracts that were female headed

between Asian and white applicants. While Asians were slightly more likely to seek housing in Hispanic or black census tracts as compared to whites, and while they were almost twice as likely as whites to seek housing in neighborhoods with Asian residents, they still sought residences in largely white as opposed to nonwhite neighborhoods.

TABLE 5

Percent of Applications Classified as:	WHITES	ASIANS
Conventional Loans	.9547	.9464
FHA Loans	.0333	.0432
VA Guaranteed Loans	.0120	.0103
Home Purchase Loans	.5277	.7181
Home Improvement Loans	.2289	.0930
Refinancings	.2401	.1878

TABLE 6

Characteristics of Borrowers, Loans and Census Tracts	Whites	Asians
Percent Female	.1443	.1396
Income	\$76,433	\$90,316
Co-signer Different Race	.0093	.0471
Loan to Income Ratio	1.5311	1.8060
Amount of Loan	\$103,502	\$137,500
Percent Owner Occupied Housing in Census Tract	.6728	.6553
Median Housing Value in Census Tract	\$175,820	\$200,599
Percent of Census Tract Asian	.0308	.0602
Percent of Census Tract Black	.0788	.0895
Percent of Census Tract Hispanic	.0613	.0728
Percent of Households Female-headed in Census Tract	.1029	.1046

5. Comparison of Female vs. Male Applications

In 79.6 percent of the cases, male applicants had their loans approved. In 77.89 percent of the cases, female applicants had their loans approved. This difference is not statistically significant at the five percent level. About 88 percent of the time one would be correct if one rejected the hypothesis that this difference is equal to zero. In other words, instead of being significant at a conventional 95 percent level of confidence, the confidence level is lower at about 88 percent. The remaining discussion, as the preceding discussion, adopts the convention of regarding a difference as statistically significant if the two-tail

probability of rejecting the null hypothesis when it is correct is less than 5 percent.

Using that convention, then, many other aspects of the loan outcomes are statistically insignificant as well. For example, although there the amount of loan requested by females on average was \$86,084 and by males, \$106,180, these differences are not statistically significant. Nor are the differences in the loan to income ratios. Nor are the differences in whether the loan was a conventional loan. Female applicants, however, are less likely than males to apply for VA loans, or home refinancing loans; they are more likely than males to apply for home improvement loans and FHA loans.

On a variety of demographic measures, both of the applicants and the census tracts, there remain significant differences between male and female applicants. Females are more likely to apply for loans for homes located in census tracts with low proportions of owner-occupied housing; low median housing values; and high fractions of female-headed families, blacks and Hispanics. They also have lower average incomes. The foregoing results are displayed in Tables 7 and 8.

TABLE 7

	MALES	FEMALES
Percent of Applications Classified as:		
Conventional Loans	.9409	.9310
FHA Loans	.0466	.0654
VA Guaranteed Loans	.0124	.0024
Home Purchase Loans	.5053	.5082
Home Improvement Loans	.2694	.3158
Refinancings	.2212	.1729

TABLE 8

Characteristics of Borrowers, Loans and Census Tracts	Males	Females
Income	\$80,308	\$56,797
Co-signer Different Race	.0148	.0116
Loan to Income Ratio	1.4752	2.6498
Amount of Loan	\$106,180	\$86,084
Percent Owner Occupied Housing in Census Tract	.6506	.6039
Median Housing Value in Census Tract	\$170,417	\$161,128
Percent of Census Tract Black	.1066	.1569
Percent of Census Tract Hispanic	.0784	.1046
Percent of Households Female-headed in Census Tract	.1133	.1289

6. Comparison of White Female vs. White Male Applications

Since a large percent of female applicants are minority, it is useful to compare white females to white males in order to gauge the independent effect of gender without the compounding influences of race on loan application outcomes. This comparison further reveals the absence of gender-based disparities in loan approval rates. While 81.66 percent of white male applicants were granted loans and 80.69 percent of white female applicants had their loans approved, this small difference is not statistically significant. One would be wrong more than 42 percent of the time if one rejected the hypothesis that the difference between these two acceptance rates was equal to zero.

Further evidence reveals that white females are not inherently at a disadvantage in the loan market. Although their incomes are generally lower than those of white males, and they request smaller loans, the loan-to-income ratios, marginally greater for white females than for white males, are not statistically different. And, the median values of the homes in the neighborhoods where they seek to live are comparable to those of white males. Tables 9 and 10 provide these results.

Both white males and white females apply primarily for conventional loans and home purchase loans, although white males are more likely to apply for VA loans than are white females. In contrast, the owner-occupancy rate and proportion of households with female

heads of the census tracts differ slightly between the two, as do the percent black, percent Asian, and the percent Hispanic in the census tract. These differences, while small, are nevertheless statistically significant at the 5 percent level.

Thus, in many respects the lives of white females mirror the lives of white males. There are major gaps in their incomes. And therefore, there are significant differences in the amounts that white females are able to request in loans. But they seek housing in similar neighborhoods: predominantly white areas with relatively high median housing values.

TABLE 9

Percent of Applications Classified as:	WHITE MALES	WHITE FEMALES
Conventional Loans	.9532	.9562
FHA Loans	.0342	.0413
VA Guaranteed Loans	.0126	.0025
Home Purchase Loans	.5256	.5363
Home Improvement Loans	.2310	.2648
Refinancings	.2395	.1965

TABLE 10

Characteristics of Borrowers, Loans and Census Tracts	White Males	White Females
Income	\$83,124	\$58,803
Co-signer Different Race	.0088	.0051
Loan to Income Ratio	1.5062	1.7425
Amount of Loan	\$112,663	\$83,601
Percent Owner Occupied Housing in Census Tract	.6794	.6463
Median Housing Value in Census Tract	\$175,553	\$171,460
Percent of Census Tract Black	.0754	.0926
Percent of Census Tract Hispanic	.0573	.0745
Percent of Households Female-headed in Census Tract	.1030	.1088

7. Conclusion

One cannot conclude from these findings alone that discrimination against women or minorities exists in home mortgage markets in New Jersey. Some analysts contend that a disparity, such as that found between the loan approval rates of blacks and whites, is sufficient to establish discrimination under various legal theories. I have shown elsewhere that such a finding is neither sufficient nor necessary for a proof of discrimination when discrimination is defined as differential treatment of otherwise equally qualified applicants.

But yet, normally an initial disparity is needed to trigger the analysis that might be performed to determine whether an observed

inequality is due to differential treatment or some other factors. Such analyses are rendered more difficult in the case of the Home Mortgage Disclosure Act data because two vital pieces of information are missing: a) credit history; and b) debt. One of the leading reasons for denial of loans is a high debt-to-income ratio. Many applicants simply attempt to purchase homes that would place their monthly payments above a range deemed acceptable to most lenders. While pre-screening and pre-approval processes exist to minimize this overextension on the part of home buyers, the vital information on debt is often not verified until after a formal loan application has been submitted. A major source of denial of loans to blacks, moreover, is a poor credit history. However, here the objectivity of the loan approval process can be called into question since a subjective judgement must be made as to what is or what is not a poor credit history. Obviously a record of default judgements, bankruptcy and foreclosures indicates a poor credit history. But major credit reporting agencies also report information on delinquencies of 30 days, 60 days or 90 days. This information is not available on the Home Mortgage Disclosure Act data and thus one is unable to test directly the hypothesis that blacks and whites with similar delinquency rates on, say, small revolving credit accounts are treated the same in the loan approval process.

Nevertheless, the data set does include information on reasons for

denial of the loan. One would expect, for example, that there would be no relationship between the characteristics of the census tract and denial due to bad credit history if bad credit history is individual specific and is evaluated fairly by loan officers. Moreover, in the absence of discriminatory behavior by loan officers, one would expect that individual specific information, like gender and income, should equally affect decisions reached for black applicants as for white applicants. It is possible to model the decision process by which loan applicants are denied because of bad credit using data provided in the data set and to estimate "bad-credit" probabilities for all applicants in the sample. Thus, this suggests a possible indirect method for estimating possible race or gender discrimination in the absence of direct information on credit history. Such an exercise, however, is beyond the scope of this report.