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All Other Things Being Equal: A Paired Testing Study of Mortgage Lending Institutions

Final Report

April 2002

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All Other Things Being Equal: A Paired Testing Study of Mortgage Lending Institutions

Final Report

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The contents of this report are the views of the contractor, and do not necessarily reflect the views of policies of the U.S. Department of Housing and Urban Development or the U.S. Government.

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
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THE SECRETARY

Foreword to "All Other Things Being Equal"
HUD Secretary Martinez

A new home buying report, *"All Other Things Being Equal,"* conducted in Los Angeles and Chicago shows that most people of color do not face discriminatory treatment when they inquire about loan products. Using testers, the report uncovered that both minority and white testers received equal treatment the majority of the time. However, the findings show that African-American and Hispanic homebuyers face a statistically significant risk of receiving less favorable treatment than comparable whites when they ask mortgage-lending institutions about financing options.

The study focused on lending discrimination in the earliest stage of the homebuying process – when a prospective homebuyer first begins to apply for a mortgage loan. If an individual is discouraged from applying for a loan at all, or is given discriminatory loan terms and conditions, the entire home buying process is fatally compromised.

Under contract with the U.S. Department of Housing and Urban Development, the Urban Institute used a paired testing technique to determine if minority home loan applicants received the same treatment and information at the pre-application stage of the process as white applicants. Hispanic and African-American testers were matched with white testers who had roughly equivalent financial backgrounds.

"All Other Things Being Equal" underscores that there are still those who would contradict not only Fair Housing laws, but the principles of freedom and opportunity we treasure as Americans. The Department will use these findings to help assure that American homebuyers and the mortgage lending industry are aware of their rights and responsibilities under the Fair Housing Act.

Mel Martinez

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EXECUTIVE SUMMARY

When first-time homebuyers begin shopping for a house, they need to learn about mortgages for which they can qualify and about house prices they can afford. This information can be provided by a variety of different sources, including mortgage lending institutions, real estate agents, and mortgage brokers. But if potential homebuyers cannot obtain full and fair access to information about mortgage financing, they may give up on their pursuit of homeownership, their housing search may be restricted, or they may be unable to negotiate the most favorable loan terms. Thus, pre-application inquiries about mortgage financing options represent a critical phase in the homebuying process.

The U.S. Department of Housing and Urban Development contracted with the Urban Institute to rigorously assess the effectiveness of paired testing for determining whether minority homebuyers receive the same treatment and information as whites at the pre-application phase of the mortgage lending process, and to produce rigorous measures of the incidence of unequal treatment in two metropolitan areas. The mortgage lending process consists of a complex series of stages, including advertising and outreach by lending institutions, responses to pre-application inquiries from potential borrowers, approval or denial of loan applications and determination of loan terms and conditions, and finally, loan administration. Discrimination may occur at any of these stages and may take different forms at different stages.[1]

In a paired test, two individuals—one white and one minority—pose as homebuyers and inquire about the availability and terms for home mortgage loans. Because the two members of a tester team present themselves as equally qualified borrowers in every respect except their race or ethnicity, systematic differences in the treatment they receive provide direct evidence of adverse treatment discrimination. Paired testing has been used widely to detect and measure discrimination by rental and sales agents, but only a few, relatively small-scale investigative studies have been applied to mortgage lending.

This study consisted of two major stages—a *pre-test* stage and a *pilot* stage. The pre-test stage was used to experiment with a fairly wide variety of paired testing scenarios, and to assess the feasibility of testing several different sources of mortgage financing information. More specifically, we conducted tests of mortgage lending institutions, mortgage brokers, real estate agents, new construction sales agents, and mobile home sales agents. This pre-test experience informed the design of the pilot stage, in which conducted approximately 250 paired tests of a representative sample of mortgage lending institutions in Los Angeles, California and

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[1] For more information on existing evidence about discrimination at other stages in the mortgage lending process, see Margery Austin Turner and Felicity Skidmore.1999. *Mortgage Lending Discrimination: A Review of Existing Evidence*. Washington, D.C.: The Urban Institute.

Chicago, Illinois, using a standardized set of protocols in order to yield statistically rigorous measures of discrimination against African Americans and Hispanics in these two metropolitan housing markets.

Paired Testing Can Be an Effective Tool for Research and Enforcement

In the first stage of this study, a total of 78 tests were conducted in two markets—Orange County, California and New Orleans, Louisiana. Because the format of these tests, and the information sources they targeted were so varied, they cannot be used to produce statistical measures of the extent of discrimination. Nevertheless, the pre-tests do provide important insights about the forms that mortgage lending discrimination may take and about methods for conducting effective testing.

The intensive pre-testing effort found that rigorous paired testing is feasible—though difficult—for all the information sources we considered. The pilot stage focused on mortgage lending institutions, because of the central role they play in the sector. But future research and enforcement efforts can and should explore other information sources, including mortgage brokers and referrals by real estate agents. More research is also needed to fully understand how homebuyers search for mortgage financing, including racial and ethnic differences in information sources and search strategies.

The pre-test effort also found that one of the most serious forms of discrimination that can be discerned by paired testing at the pre-application stage is differential estimates of home price and total loan amount. These estimates potentially play a major role in determining where people search for housing and whether they decide they can afford to become homebuyers. Therefore, the pilot phase of the Homeownership Testing Project was explicitly designed to measure this form of differential treatment rigorously.

Finally, pre-testing highlighted the complexity and difficulty of mortgage lending testing. This type of testing demands more from both testers and testing organizations than routine rental testing, and great care must be taken with tester training, supervision, and record keeping, as well as with the actual conduct of the tests themselves in order to achieve credible test results. Not all local fair housing organizations necessarily have the capacity to effectively conduct lending tests.

African Americans Experience Unequal Treatment from Lending Institutions in Los Angeles and Chicago

The pilot phase of the Homeownership Testing Project focused on a single, clearly defined scenario: A first-time homebuyer visits a mortgage lending institution requesting help in figuring out a price range for housing, a loan amount for which he or she might qualify, and loan products that might be suitable, to answer the basic research question: Do minorities receive

the same treatment and information as whites at the pre-application phase? All the tests conducted in the pilot phase of the Homeownership Testing Project consisted of individuals visiting offices of mortgage lending institutions (including both conventional and sub-prime lenders). Testers posed as first-time homebuyers, making a general uninformed request for information about how much house they could afford and what loan products might be available to them. All of the testers were assigned financial profiles that qualified them for products targeted to borrowers with A- credit in their respective housing markets. Their income and asset levels qualified them to purchase a median-priced house in their metropolitan area, but they were asset constrained and had minor problems with their credit history. The two members of each tester pair were assigned virtually identical financial and household characteristics, with the minority partner always slightly better qualified than the white.

In both Chicago and Los Angeles we conducted tests for a representative sample mortgage lending institutions in the metropolitan area that report under the Home Mortgage Disclosure Act (HMDA),[2] accept at least 90 mortgage loan applications per year, and had offices in the region that a first-time homebuyer could realistically find and visit. Lending institutions with very large application volumes not only had a high probability of selection, but could appear in the sample more than once. This sampling strategy allows us to make statements about the incidence of differential treatment by large lending institutions in Chicago and Los Angeles that are directly accessible to first-time homebuyers.[3]

The pilot test results show that in both Los Angeles and Chicago, African American and Hispanic homebuyers face a significant risk of receiving less favorable treatment than comparable whites when they visit mortgage lending institutions to inquire about financing options. In the majority of cases, minorities and whites received equal treatment, or when differences occurred, they were equally likely to favor the minority as the white.[4] But in both

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[2] HMDA requires all independent mortgage companies and mortgage lenders owned by depository institutions that make at least 100 home purchase and/or refinancing loans in a given year to report on the demographic and locational characteristics of all applications and loans.

[3] Levels and patterns of discrimination may be different for smaller lending institutions or when inquiries are made by telephone or internet rather than in person.

[4] It is important to recognize that even when we do not observe a statistically significant pattern of systematically unequal treatment, discrimination may have occurred in individual cases. For some treatment variables, differences in treatment occurred quite frequently but favored minorities just as often as whites. These differences may result from random variations in the behavior of loan officers, but they may also include cases of discrimination on the basis of race or ethnicity.

metropolitan areas, paired testing reveals statistically significant patterns of unequal treatment that systematically favor whites.[5]

Unequal treatment takes different forms in the two metropolitan areas and for the two minority groups.

In Los Angeles --

- Blacks were offered less coaching than comparable white homebuyers, and were more likely to be encouraged to consider an FHA loan.
- Hispanics were denied basic information about loan amount and house price, told about fewer products, and received less follow-up compared to Anglo homebuyers.

In Chicago –

- Blacks were denied basic information about loan amount and house price, told about fewer products, offered less coaching, and received less follow-up than comparable white homebuyers.
- Hispanics were quoted lower loan amounts or house prices, told about fewer products, and offered less coaching than comparable Anglo homebuyers.

These patterns of unequal treatment occurred regardless of whether the two members of a tester pair met with the same loan officer or with different loan officers.

Adverse Treatment of African American and Hispanic Homebuyers Face a

Treatment Categories	Los Angeles		Chicago	
	Blacks	Hispanics	Blacks	Hispanics
Information requested		U	U	
Loan amount and house price				U
Number of products		U	U	U
Coaching	U		U	U
Follow-up contact		U	U	
FHA encouraged	U			

U Unequal treatment favors whites or Anglos over blacks or Hispanics at a 90 percent level of statistical significance or higher

☐ No statistically significant differences in treatment

[5] Results are reported as statistically significant when the difference between the rate of white/Anglo-favored treatment and the rate of minority-favored treatment is significant at a 90 percent confidence level or higher.

The frequency of unfavorable treatment varies considerably from one category to another. For some categories, equal treatment occurred in the vast majority of cases, but when differences occurred, the white tester was dramatically more likely to be favored than his or her minority partner. For other treatment categories, differences in treatment occurred much more often, but again were substantially more likely to favor the white than the minority tester. The series of charts below illustrate the levels of unfavorable treatment for each treatment category where statistically significant differences were observed.

Two female testers, one white and one black, visited the same Los Angeles area lender two days apart and met with the same loan officer. The testers told the loan officer that they were first-time homebuyers and needed assistance in figuring out a home price range and a loan amount for which they might qualify. The loan officer requested and obtained detailed information on household income, debts, and assets from both testers and asked about their respective credit situations. He then estimated that the white tester would qualify for a $332,500 loan to purchase a $350,000 home and, but estimated that the black tester would qualify for a $237,500 loan to purchase a $245,000 home. The loan officer told the white tester that a seller would likely pay some of the closing costs, but no mention was made about seller assistance to the black tester. The loan officer also told the white tester that it was a good idea to have a home inspection conducted prior to purchase, while the loan officer did not mention anything about the value of a home inspection to the black tester. The loan officer provided a complete loan application package to the white tester, but not to the black tester.

Despite the variations in the forms that differential treatment takes, these findings demonstrate that African American and Hispanic homebuyers in both Los Angeles and Chicago face a significant risk of unequal treatment when they visit mainstream mortgage lending institutions to make pre-application inquiries. Discriminatory treatment at this early stage in the mortgage lending process has the potential to discourage some minorities from continuing their housing search, to limit their search to lower cost homes than they could actually afford, and to prevent them from choosing the most favorable loan products.

Therefore, we conclude that paired testing at the pre-application stage of the mortgage lending process is feasible and effective for both enforcement and research purposes. Additional testing should be conducted, including systematic studies that focus on other sources of information about mortgage products and on homeseekers who are less well-qualified as borrowers. However, because of the complexity of this kind of testing and the differences between metro area results, we do not recommend a large-scale national study of discrimination at the pre-application stage of the mortgage lending process. Instead, systematic studies should be conducted on a site-by-site basis, with ample time and resources for effective training, test coordination, and quality control.

CHAPTER 1: BACKGROUND AND APPROACH

More than three decades after the passage of the Fair Housing Act (Title VIII of the 1968 Civil Rights Act), African American and Hispanic homebuyers still do not enjoy equal access to home ownership. Widespread evidence indicates that minority homebuyers are less likely than whites to obtain mortgage loans and, if they are successful, receive less favorable loan amounts and terms. However, questions remain about the extent to which discrimination is the cause of these unequal outcomes, and about the forms that discrimination may take. A recent review of existing social science evidence concluded that minority homebuyers in the United States do face discrimination from mortgage lending institutions.[1] But serious gaps remain in what we know and more rigorous information is needed to refine and target enforcement strategies, to enable lending institutions to monitor their own performance, and to design remedies to reduce discrimination in home mortgage lending.

Paired testing provides a uniquely powerful tool for investigating both the incidence and the forms of adverse treatment based on race or ethnicity. In a paired test, two individuals—one white and one minority—pose as homebuyers and inquire about the availability and terms for home mortgage loans.[2] Because the two members of a tester team present themselves as equally qualified borrowers in every respect except their race or ethnicity, systematic differences in the treatment they receive provide direct evidence of adverse treatment. Paired testing has been used widely to detect and measure adverse treatment by rental and sales agents, but only a few, relatively small-scale investigative studies—primarily by the National Fair Housing Alliance (NFHA)—have been applied to mortgage lending. During the early 1990s, NFHA conducted tests in seven cities (Atlanta, Chicago, Dallas, Denver, Detroit, Oakland, and Richmond). Testers posed as first-time homebuyers and refinancers inquiring about financing terms and conditions at the pre-application stage. A reanalysis of these testing data by the Urban Institute concluded that differential treatment occurred at significant levels in at least some cities. 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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[1] *Mortgage Lending Discrimination: A Review of Existing Evidence*. 1999. Margery A. Turner and Felicity Skidmore, Eds. The Urban Institute.

[2] For more information on paired testing and its role in both measurement and enforcement, see *A National Report Card on Discrimination in America: The Role of Testing*. 1999. Michael Fix and Margery Austin Turner, Eds. The Urban Institute.

The Homeownership Testing Project

Building upon the experience and findings of previous testing efforts, the Department of Housing and Urban Development (HUD) contracted with the Urban Institute to further refine and apply methods for conducting paired testing at the pre-application stage of the mortgage lending process. The Homeownership Testing Project (HTP) was designed to meet two basic objectives. The first is to develop and refine a set of testing methodologies that will provide guidance to others who might be interested in testing for lending discrimination. The second objective of the Homeownership Testing Project is to produce reliable and representative indicators about the nature and extent of differential treatment by home mortgage lending institutions in two major metropolitan areas. Because the NFHA testing was designed primarily for enforcement purposes, its findings do not provide statistically rigorous measures of the incidence of differential treatment across lending institutions.[3] Thus, this project combines research and enforcement goals, and seeks to advance both *knowledge* about the incidence of mortgage lending discrimination and *tools* for conducting rigorous testing at the pre-application stage.

Because of the complexity of the mortgage application process and the challenges it presents for paired testing, we divided this effort into two basic stages—a *pre-test* stage and a *pilot* stage. The pre-test stage was used to experiment with a fairly wide variety of paired testing scenarios, and to assess the feasibility of testing several different sources of mortgage financing information. A total of 78 tests were conducted in two markets—Orange County, California and New Orleans, Louisiana. Although these pre-tests cannot be used to produce statistical measures of the extent of adverse treatment, they do provide important insights about the forms that mortgage lending discrimination may take and about methods for conducting effective testing.

The pre-test stage explored the feasibility of conducting paired testing for six different information sources, or "portals," reflecting the range of possible sources of mortgage information used by homebuyers:

- *Conventional mortgage lenders* serve large numbers of homebuyers directly. In addition, homebuyers who access other portals, such as real estate agents, often end up meeting with a lender at some point in the financing process.

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[3] In particular, lenders were selected for inclusion in the NFHA study based on evidence suggesting that they might be discriminating against minority customers. Thus, the findings are not necessarily representative of treatment by all mortgage lenders. See Robin Smith and Michelle DeLair (1999). "New Evidence from Lender Testing: Discrimination at the Pre-Application Stage," in Margery Austin Turner and Felicity Skidmore (eds), *Mortgage Lending Discrimination: A Review of the Exisitng Evidence.* Washington, D.C.: The Urban Institute.

- *Sub-prime mortgage lenders* are, according to some researchers and policymakers, the fastest growing segment of the mortgage industry. This growth is due, in part, to the increasing numbers of homebuyers unable to secure a conventional loan due to blemished credit histories or other financial characteristics that will not meet the underwriting criteria of conventional lenders.
- *Mortgage brokers* provide the same services as mortgage lending institutions, up to the point of actually originating a loan. In some markets, and for some groups of borrowers, they may be an important source of information on loan products. However, it is difficult to develop a complete and reliable list of active mortgage in a metropolitan area from which to draw a representative sample. Moreover, since many brokers do business primarily through referrals, future testing will need to experiment with credible scenarios for testers to contact brokers.
- *Real estate agents* who have their own financing arm can provide customers with financing information, while other agents may refer homebuyers to outside mortgage brokers or lenders for additional information or for the actual loan. They are important gateways to the mortgage industry and influence which lenders many buyers contact. Conventional sales testing of real estate agents can be expanded to assess information provided about mortgage financing.
- *New construction sales offices and mobile home dealers* both provide customers with information about financing terms and conditions. These portals serve limited, but important, segments of the housing market. Testing for pre-application lending discrimination by sales agents and mobile home dealers can and should be incorporated into more comprehensive tests for discrimination by these actors. In other words, tests designed to detect differences in unit availability, costs, amenities, and location can also incorporate indicators of differences in financing amounts, terms, and conditions.

The pre-tests were also used to experiment with different testing scenarios. Some testers indicated that they already had a particular house in mind while others were trying to find out how much they could potentially afford. Some testers posed as well-qualified borrowers, while others were assigned marginal qualifications. Some testers visited lenders in pairs, posing as husband and wife inquiring together, while others conducted one-person visits, but indicated that they were married.

This intensive exploratory effort concluded that rigorous paired testing is feasible for all the portals we considered. Future research and enforcement efforts can and should explore other portals, including mortgage brokers and referrals by real estate agents. The pre-test effort also found that one of the most serious forms of adverse treatment that can be discerned by paired testing at the pre-application stage is differential estimates of home price and total loan amount. These estimates potentially play a major role in determining where people search for

housing and whether they decide they can afford to become homebuyers. Finally, pre-testing highlighted the complexity and difficulty of mortgage lending testing. This type of testing demands more from both testers and testing organizations than routine rental testing, and great care must be taken with tester training, supervision, and record keeping, as well as with the actual conduct of the tests themselves in order to achieve credible test results.

Lessons from the pre-test phase have been incorporated into a package of tools for enforcement testing, produced as part of the Homeownership Testing Project.[4] In addition, the pre-test experience informed the design of the project's pilot stage, in which we conducted approximately 250 paired tests of a representative sample of mortgage lending institutions in Los Angeles, California and Chicago, Illinois. These tests followed a single, standardized set of protocols in order to yield statistically rigorous measures of adverse treatment against African Americans and Hispanics in the two metropolitan housing markets.

Overview of the HTP Methodology

Mortgage lending is a tremendously complex process. It can involve multiple information providers, including real estate agents, brokers, and different types of lending institutions. Many lenders offer a wide range of loan products, with varying interest rates, points, downpayment requirements, repayment terms, and monthly costs. And a number of different customer characteristics, including income, assets and debts, and credit history, help determine what products are offered. This complexity makes it challenging to design and conduct paired tests that reliably measure the incidence of differential treatment. It would be impossible to design a single study protocol to capture all the possible variations, even at the pre-application stage.

The pilot phase of the Homeownership Testing Project focused on a single, clearly defined scenario: *A first-time homebuyer visits a mortgage lending institution requesting help in figuring out a price range for housing, a loan amount for which he or she might qualify, and loan products that might be suitable,* to answer the basic research question: *Do minorities receive the same treatment and information as whites at the pre-application phase?* This section outlines the key elements of a rigorous paired testing methodology to measure the incidence and severity of adverse treatment by mortgage lending institutions in two very different housing markets.

All the tests conducted in the pilot phase of the Homeownership Testing Project consisted of individuals visiting offices of mortgage lending institutions (including both conventional and subprime lenders). We focused on mortgage lending institutions for two basic reasons. First, mortgage lenders are an important source of information about loan products,

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[4] See Fred Freiberg and Carla Herbig. 2001. *Guide to Enforcement Tools for Fair Lending Testing*. Washington, D.C.: The Urban Institute.

terms, and affordability. Homebuyer surveys indicate that a majority of both minority and white homebuyers speak to a mortgage lender at some point during the process of purchasing a home. Even homebuyers who begin their search for information elsewhere are likely to end up working with a mortgage lending institution at some point in the process. And second, mortgage lending institutions can be identified and sampled with reasonable precision, in order to produce statistically rigorous measures of adverse treatment. Our pre-test experience indicated that designing valid samples of sufficient size for other information portals would be difficult.

All of the testers in the pilot phase posed as first-time homebuyers, making a general uninformed request for information about how much house they could afford and what loan products might be available to them. They visited lenders' offices after calling to make an appointment. Although most real homebuyers gather information by telephone, almost one third report making personal visits to lenders, and our pre-test experience indicated that in-person visits would be both feasible and credible. Moreover, we experimented in the pre-test phase with a number of variations on this basic scenario and found that testers do not need to identify a house, neighborhood, price range, or loan product in order to be provided with information by mortgage lenders. Pre-testing also indicated that individuals posing as one member of a married couple were treated as serious customers.

The pilot testing effort was implemented in two metropolitan areas, Chicago and Los Angeles. In both of these sites, sufficient numbers of tests were conducted to produce statistically rigorous estimates of differential treatment for blacks (compared to whites) and for Hispanics (compared to Anglos). Four basic criteria guided the selection of these sites for the study's pilot phase:

- *Strong local testing capacity*. Although at least 100 fair housing groups nationwide conduct paired testing, relatively few are likely to have the capacity to conduct large numbers of lender tests to the rigorous standards of this project. Therefore, a principal criterion for selecting sites was the availability of a local testing organization with strong capacity. Chicago's Leadership Council for Metropolitan Open Communities and the Law Firm of Sharon Lybeck Hartmann in Los Angeles are well-established testing organizations, with experienced testers and supervisors and the institutional capacity to take on this challenging project.
- *Geographic diversity.* Although two sites obviously cannot be statistically representative of metro areas nationwide, we wanted to select pilot sites that are sufficiently different to reflect the diversity of metropolitan housing markets. Chicago and Los Angeles represent different geographic regions and have very different housing market conditions.
- *Size and minority population.* We limited our site selection to large metropolitan areas with substantial black and Hispanic populations. Our pre-test experience reinforced

earlier assumptions that the anonymity of large urban areas helps shield a large-scale testing effort from detection, and that a substantial minority population lends credibility to minority testers. Chicago and Los Angeles have sufficient numbers of *both* African Americans and Hispanics to permit testing for adverse treatment against both groups.

- *Number of lenders.* Given the volume of testing required to yield statistically rigorous measures of differential treatment, it is critical that sites have a large number of mortgage lenders with local offices. Otherwise, the project might risk detection by conducting too many tests of the same lending institutions.

In both Chicago and Los Angeles we conducted tests for a representative sample of all the mortgage lending institutions in the metropolitan area that accepted a significant number of mortgage loan applications and had offices in the region that a first-time homebuyer could realistically find and visit. Lending institutions with very large application volumes not only had a high probability of selection, but could appear in the sample more than once. This sampling strategy allows us to make statements about the incidence of differential treatment by primary lending institutions in Chicago and Los Angeles that are directly accessible to first-time homebuyers.

The treatment that potential homebuyers receive from lending institutions is highly sensitive to the financial profiles they present. Therefore, the two members of each tester pair were assigned virtually identical characteristics for all our pilot tests. In addition to the potential problems posed by differences between testing partners, the variation in profiles *across* tester pairs could influence the results of the pilot phase. Because the number of tests that could reasonably be conducted in each site was relatively small (by statistical standards), we decided to keep the tester profiles homogeneous. In other words, we limited the extent to which results *across* tests might vary as a result of differences in income levels, assets and debts, or credit histories. By reducing the potential variation between tests, we increased the statistical reliability of findings from each site's sample. All of the testers were assigned financial profiles that qualified them for products targeted to borrowers with A- credit in their respective housing markets. Their income and asset levels qualified them to purchase a median-priced house in their metropolitan area, but they were asset constrained and had minor problems with their credit history.

Organization of the Report

The remainder of this report consists of three chapters. Chapter 2 more fully explains the sampling procedures and paired testing methodology implemented in the pilot phase of the Homeownership Testing Project, building upon the experience gained in the pre-test phase. Chapter 3 presents the results of the pilot phase, summarizing measures of differential treatment for each of the racial/ethnic tracks in our two pilot sites: black/white tests in Los

Angeles; black/white tests in Chicago; Hispanic/Anglo tests in Los Angeles; and Hispanic/Anglo tests in Chicago. Finally, Chapter 4 concludes the report with a summary of key findings from both the pre-test phase and the pilot phase of the Homeownership Testing Project and their implications for future research and enforcement efforts.

CHAPTER 2: THE HTP PAIRED TESTING METHODOLOGY

Conducting successful pre-application mortgage lending tests requires a highly structured and controlled process that includes careful preparation prior to the test visits, conscientious adherence to assignments during test visits, and thorough documentation of the test experience after test visits are completed. This chapter first describes the methodology used to select a representative sample of lending institutions for testing in each site. We then present the test structure that was employed during the pilot phase, the assignment of tester characteristics and instructions to testers, and the testing protocols used to conduct pre-application mortgage lending. We conclude by offering some general observations about replicating the HTP testing protocols used during the pilot phase and issues related to organizational capacity that are required to conduct effective pre-application mortgage lending testing.

Sample of Lending Institutions

The Homeownership Testing Project was designed to (1) evaluate lender testing methodologies in two pre-test sites and (2) estimate the incidence of discrimination by mortgage lenders in two pilot sites. The distinct objectives of each of these two components imply different guidelines for selecting the lenders to be tested.

The **pre-test** focused both on tester characteristics and on the entry points at which testers gain access to information on mortgage products. At this stage, our goals were to implement and refine testing forms and protocols to find out whether different testing scenarios were effective and what types of differential treatment they could detect. To operationalize this phase, lenders were selected on a case-by-case basis, to meet the needs of the specific test scenario being explored. Lists of different types of lenders were gleaned from Home Mortgage Disclosure Act data, telephone books, local newspapers, and home guides. In the pre-test, there was no need to select a strictly random or representative sample of lenders.

Measuring the frequency of discrimination in the **pilot** phase required a more systematic selection of lenders so that statistically reliable measures of the incidence of differential treatment across a large number of tests could be produced. For these findings to be generalized to particular types of local lenders (or a particular segment of a local lending market), a sampling frame was required that fully reflected local mortgage lending activity and provided an equal chance for each lender to be selected for testing. By using a rigorous sampling frame, test results can answer questions about the incidence (or likelihood) of discrimination for a given population in a particular situation. While the pre-test phase accessed information about mortgage financing through a variety of portals such as mortgage lenders, mobile home dealers, real estate agents, and new home builders, the pilot phase focused strictly on prime and subprime mortgage lenders. To produce reliable estimates of treatment,

lender selection could not occur on a case-by-case basis and instead, was driven by an overarching sampling frame of local mortgage lending institutions from which all entities to be tested were selected.

No sampling frame is perfect; some compromises and caveats are inevitable. Ideally, however, our goal was to construct an exhaustive (and mutually exclusive) list of all institutions making mortgage loans in a metropolitan market from which all lenders to be tested would be selected. To generate the closest approximation of such a list for the pilot phase, we used information reported under the Home Mortgage Disclosure Act (HMDA) in 1998.

HMDA data are available for all mortgage companies owned by depository institutions and independent mortgage companies that make at least 100 home purchase and/or refinance loans in a given year. These data include information on the number of home mortgage loans made by a lender, characteristics of applicants, and locations of prospective properties. HMDA data for a specific locality list all lenders (within the proscriptions above) making loans for properties in that locality.

In reviewing information from HMDA reports, it is apparent that many lenders are listed who receive very few applications for mortgage loans. This raised concerns about the feasibility of testing. Two people visiting such an office within a short period of time with a similar request could be very unusual. To better ensure that testing activity would not prompt suspicion, we selected for the sampling frame only those institutions that received at least 90 mortgage loan applications in a given year. For Los Angeles, this meant 344 of 515 institutions were dropped from the sampling frame. However, the remaining 171 institutions conducted the vast majority of the application activity captured in HMDA (97 percent). Similarly, in Chicago we included in the sampling frame 198 of 793 institutions covering 94 percent of application activity.

In order for a tester to make an in-person visit to a lending institution, the lender must have a local office. Moreover, that office and its services must be accessible to the average consumer without requiring membership or ties to a specific organization. For the sampling frame to reflect these needs, we deleted from the list of all HMDA reporters those institutions (1) without local offices and (2) unavailable to the average consumer (such as credit unions).

Once the list of lenders was pared down to those institutions receiving at least 90 applications a year that had an office available for a visit from an average consumer, institutions were called to verify both the presence of a local office and the ability of a person to receive mortgage information at that office. An institution without an office, that was out of business, or that did not provide information to potential first-time borrowers, was deemed inaccessible and unavailable for testing. In Los Angeles, this brought the number of lenders listed in HMDA who were available for testing from 171 to 67. These 67 lenders conducted roughly half of the mortgage loan application activity reported in HMDA. In Chicago, 106 lending institutions were

available for testing, reflecting 62 percent of the market's HMDA-reported application activity (Exhibit 2-1).

Exhibit 2-1: Sampling Frame

	# of Institutions		Application Volume		% of HMDA Activity	
	LA	*Chicago*	*LA*	*Chicago*	*LA*	*Chicago*
Full HMDA List	515	793	160,518	167,231	100	100
90+ Applications	171	198	155,730	157,002	97	94
Accessible	67*	106**	89,788	103,017	56	62

*In addition to deleting credit unions and lenders without local offices, this category included 35 institutions that were no longer in business, 7 wholesalers, and 4 that did not serve first-time homebuyers.

**Again, in addition to deleting credit unions and lenders without local offices, this category included 2 institutions that were no longer in business, 15 wholesalers, 6 that did not serve first-time homebuyers, and 5 that would only pre-qualify applicants over the phone.

The sampling frame used in the homeownership testing project can be generalized to HMDA reporting lenders who receive at least 90 applications a year and are accessible to the average consumer. While this sampling frame covers a significant portion of the mortgage activity in a given locality, it does not reflect entities that do not report to HMDA. Because independent mortgage companies making fewer than 100 homes loans do not have to report for HMDA purposes, the sample excludes smaller independent mortgage companies. It is unclear how many institutions and how much activity this misses in Los Angeles and Chicago. In addition, mortgage brokers connect many prospective borrowers to potential lenders, but because they do not actually make loans, they are not listed in HMDA data.

Research testing seeks to simulate as closely as possible the typical experience of a mortgage credit seeker in the marketplace. Therefore, the ideal sampling frame is one which duplicates the market entry points used by the average person when searching for mortgage credit. The more closely the sampling frame resembles the credit seekers' experience, the more accurately it measures the treatment of typical potential borrowers.

Unfortunately, there is little in-depth research on how people search for credit including potentially different search practices of racial and ethnic groups. While most research testing efforts have used lenders as the entry point for mortgage credit, other housing professionals such as real estate agents may provide significant gate keeper functions in the actual mortgage market.

Moreover, different segments of the mortgage industry may position themselves to serve niche markets of potential borrowers. To the extent that targeted marketing results in more

aggressive campaigns to individuals or communities of different racial groups, this could affect the type of institutions used by borrowers.

To generate a sample of lenders for testing, institutions were sampled with replacement from the restricted population of mortgage lending institutions, with the probability of selection proportionate to volume of loan applications. This means that an institution with a high volume of loan applications was more likely to be selected than one with a low volume of applications. Moreover, large institutions could be drawn into the sample more than once, so that multiple tests were conducted for these lenders. This approach resulted in a sample that includes both large and small lenders but gives large lenders (which serve a larger share of the market) a greater weight in the ultimate test results.[6] From the 67 institutions in the Los Angeles sampling frame, 35 were selected for black/white testing and 34 for Hispanic/Anglo testing. In both categories, the lenders selected accounted for half of the application activity captured in HMDA data. In Chicago, the lenders selected for black/white testing cover 47 percent of the application activity, while those tested for treatment of Hispanics and Anglos cover 51 percent.

Exhibit 2-2: Final Sample of Lending Institutions

	# of Institutions		Application Volume		% of HMDA Activity	
Lenders Tested	*LA*	*Chicago*	*LA*	*Chicago*	*LA*	*Chicago*
Black/White	35	49	81,031	78,655	50	47*
Hispanic/Anglo	34	51	80,447	85,214	50	51*

* During the course of testing, one institution in our sample merged with another large lender. HMDA application volume for this lender is difficult to determine and is not represented in these totals.

While the sample was drawn based on lending institution, tests were conducted by visiting individual branch offices, which were randomly selected from all of the institution's local offices. To select a branch office of a lender, a list of that lender's local branches was compiled. Urban institute staff made calls to local offices to verify addresses and determine which branches potential borrowers could visit to receive information on mortgage loans.[7] Once the list of local branches was reduced to those providing mortgage information, the branch to be tested was selected randomly from the list. This process was conducted for each lending institution in the sample.

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[6] Separate samples were drawn for black/white tests and Hispanic/Anglo tests in each site. The medium- to large-volume lenders were likely to be selected for testing in both samples because of their dominance in the local market. However, each sample's selection of smaller lenders was slightly (and randomly) different.

[7] Information on the volume of activity conducted by each branch was not available.

This sampling procedure makes it possible to generalize to the universe of large lending institutions that maintain local offices where first-time homebuyers can inquire in-person about mortgage financing options. It is important to recognize that small lenders, as well as lenders that accept applications only by telephone or over the internet have been excluded from this sample. Their treatment they provide to minority customers (relative to whites) may differ in important ways from the institutions included in this study.

Basic Test Structure

Tests completed during the pilot phase were "paired test" structures involving two individuals, both posing as part of a married household, who were matched on personal, financial, and loan-seeking characteristics so that the primary difference between them was the protected characteristic for which the test was conducted, namely race or national origin. Thus, minority and white testers were paired to form test teams matched by gender and age, and both male and female test teams were used to conduct Hispanic/Anglo and black/white paired tests in Los Angeles and Chicago.

All testers posed as first time homebuyers beginning their search for a single-family home, and called ahead to make an appointment with a loan specialist. During the visits, testers requested assistance in determining the price range of housing they could afford and the loan amount for which they might qualify. Testers were assigned detailed personal and financial information which they were instructed to provide upon the lender's request. If testers were provided a recommended home price range and "pre-qualified" for a loan amount, they were told to obtain as much information as possible about any available financing options for which they qualify. Testers were instructed to end their visits by thanking the lender for any assistance provided and to allow the lender to make any arrangements or suggestions for follow-up contact.

Organizational Structure

Responsibility for the assignment and implementation of tests was shared between the Urban Institute and the local testing organizations contracted in Los Angeles and Chicago. The Urban Institute held a supervisory role, developing all sampling and testing methodologies, training local housing groups and testers, reviewing completed tests, and analyzing testing data. In addition, UI staff was responsible for sampling institutions and branches, and assigning protected class and financial characteristics to tests. The local housing groups in each site were responsible for the day-to-day implementation of testing. Teams of three managers, two testing coordinators and one quality control supervisor, headed up the testing effort in each site. Test coordinators hired testers, scheduled tests, assigned personal profiles, and briefed and debriefed testers.

One important lesson from the pre-test experience was that implementing a large number of lender tests and maintaining a consistent level of quality across all the tests required considerable supervision at the local level. The complexity and quantity of information obtained from lender tests required additional quality control beyond that which could be provided by test coordinators. Someone at the local level was needed to provide oversight and a quality review of all test materials immediately following the completion of each. Both local testing organizations were funded and required to hire a quality control supervisor who could perform this function. Beyond providing the quality review function and additional supervision of the testing process, the quality control supervisors in each site also entered data into a central data base as tests were completed. This local review and data entry process strengthened the quality and consistency of testing—ensuring that testing protocols were followed and verifying the accuracy of data on tester report forms.

Test Authorizations

The authorization to conduct a test was forwarded by the Urban Institute to test coordinators in Los Angeles and Chicago via a *Test Site Authorization Form*. This form specified the parameters of each test, including the institution and branch to be tested, whether the testers should be white and black or Anglo and Hispanic, the timing and sequence of the test visits, a test identifying number, and any special instructions. Prior to forwarding a Test Site Authorization Form, UI staff made advance phone calls to the institutions and branches selected through the sampling process. Given the fluctuations of the lending market, these calls were necessary to confirm the existence of the branch, make sure the branch was accessible to first-time mortgage seekers, and verify basic contact information. The correct name, address and phone number for the test sites, along with office hours (if known), were provided to the test coordinators on the Test Site Authorization Form. In order to minimize suspicion and the risk of detection, the white or Anglo tester was always instructed to visit prior to the minority tester. It was the responsibility of the test coordinator to have testers make their visits within 24-120 hours of each other.[8]

Tester Assignments – Characteristics and Instructions

In each site, test coordinators recruited and selected a pool of testers for participation in the Homeownership Testing Project. Urban Institute staff reviewed the actual characteristics of

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[8] During the course of the testing, the time spread was increased in some situations. It became apparent that wider spacing was sometimes necessary to accommodate loan officers who maintain erratic work schedules or to reduce the possibility of detection. While most tests were conducted within the 24-120 day spacing, some tester visits were spaced between four to eight days apart.

these testers to ensure that all of them spoke fluent English and were competent to conduct complex mortgage lending tests. Minority testers were all clearly identifiable as either African American or Hispanic. As discussed earlier, the responsibility for developing testers' assigned characteristics was shared by the Urban Institute and the local test coordinators.

Personal profiles for the test assignments, including tester names and addresses, personal family information, employers and occupations, and names of local creditors such as local department stores and banks, were developed by the local test coordinators based on their knowledge of the area. Extensive training was provided to test coordinators on how to assign personal characteristics to testers. Instead of using their own home telephone numbers, testers were assigned voice mail numbers so that follow-up calls could be documented in a systematic manner throughout the testing process. Local test coordinators assigned appropriate occupations, employers and length of time on the job to every adult employed in the tester's fictional household. No tester was assigned to have less than two years on their current job and minority testers were assigned a slightly greater length of employment than their white counterparts. In addition, local test coordinators assigned testers a response to the question of how they happened to hear about the lender, such as through the phone book, on the internet, or from a sign or advertisement.

The financial characteristics assigned to testers were carefully developed and controlled by Urban Institute staff. On every test, the minority tester was slightly more qualified than the white tester. Income (individual and household), debts (monthly payments and amounts owed), and assets (amounts in checking and savings accounts) were provided to testers for every test. These amounts were assigned to ensure that the qualifying ratios (front- and back-end) were very close for both testers, and well within established norms. In Los Angeles, the financial profiles were based around an amount slightly higher than the median single-family home price, while in Chicago, the financial profiles were based around an amount slightly below the median home price. Financial profiles were calculated backwards from the target home price to determine the income and debt amounts necessary to qualify for that amount of home assuming a 30-year conventional fixed-rate loan, at 8 percent interest, with a 5 percent downpayment (see Annex A for more details on assigned financial characteristics). Six profiles were developed for each MSA and were randomly assigned on each test. In all of the profiles, the testers were somewhat asset constrained, meaning that their available downpayment—not their qualifying ratios—limited the loan amount for which they qualify. Income was distributed among wage earners in each household in the same manner for both minority and non-minority testers.

In addition to their detailed financial characteristics, testers were assigned:

- *Credit Information.* All of the testers were assigned profiles with one or two minor credit blemishes, usually a late payment of some kind. Testers were instructed to offer details about their credit situation only if the subject of their credit standing or a credit check was brought up by the lender during the visit.
- *Education Level*. Adults in the tester households were assigned comparable education levels so that this information could be provided if requested by a lender.
- *Current Rent/Period of Time at Current Residence.* All testers posed as current renters. The current rent paid by testers was assigned so that the minority tester was always paying a little more in rent than the white tester. No testers resided at their current residence less than three years and minority testers were assigned to have resided at their current residence longer than their white counterparts.

These personal and financial characteristics as well as detailed instructions were provided to each tester prior to conducting a test. The Urban Institute developed a set of instructions or "script" that accompanied every test assignment. The instructions provided testers with a set of tasks they were expected to accomplish during each test, including how to make the call for an appointment, how to state the request, what questions to ask, and how to end the visit. These instructions were designed to add an additional element of control to the testing process so that consistent observations could be obtained about lender conduct. These detailed instructions were consistent across all tests. Testers were provided with only one test assignment at a time and were required to complete that test and document the experience before receiving another test assignment.

Additional instructions were provided to all HTP testers in the Manual for Fair Lending Testers and in the HTP Tester Training Sessions. Examples of additional instructions include:

- Testers must not bargain or negotiate for better financing terms;
- Testers must not provide a social security number or date of birth, and must never authorize a credit check;
- Testers must not agree to pay for any services during the test visits;
- Testers must not state a preference for a particular type of financing, home price, loan amount or monthly mortgage payment; and
- Testers must say that they are not currently working with any real estate agent if asked by a lender.

Testing Protocols

In order to implement testing in a standardized manner across all tests conducted in Los Angeles and Chicago, a set of testing protocols were developed for the pilot phase. Local test coordinators were required to attend a week-long training session on these protocols and were provided a training manual to use as a reference for testing protocols and procedures.

Test coordinators were required to meet with each tester, *in person*, prior to a test being conducted. At this briefing, testers received their tester assignment and a set of instructions for the upcoming test. During this initial briefing, the test coordinator was responsible for:

- reviewing the test assignment form with the tester and answering any questions about assigned characteristics, instructions and/or testing procedures;
- providing the tester with the appropriate test forms and materials (a completed test assignment form, a blank test report form, a sufficient quantity of test narrative forms, a notepad, etest coordinator.);
- helping the tester develop a "cheat sheet," including household income, indebtedness, and assets information (only the financial details that an actual homebuyer might write down in preparation for meeting with a lender);
- clarifying any special instructions; and
- reviewing the procedures for completing the test forms and arranging to meet for a debriefing following the completion of the test.

Test coordinators used a "Checklist for Briefing Testers" that was developed after the pre-test phase to ensure greater consistency in the quality and content of the briefings. A "List of Reminders to Testers" was included with every tester assignment packet. This list reviewed test procedures and specific areas of tester conduct where mistakes or deviations from test assignments were found to occur during the pre-test phase.

The testing protocols that testers were instructed to follow when conducting a test can be summarized in five basic steps.

- *Step #1 - Obtaining an Appointment.* All HTP testers called to arrange "in person" visits with lenders. Testers were provided detailed instructions on how to complete such calls and how to avoid protracted conversations with loan officers over the phone.
- *Step #2 - Making the Initial Request (During the Visit).* When testers arrived for their appointments, their first step was to very clearly state (up to three times, if necessary) that the purpose of their visit is to obtain some help in figuring out a price

range of housing that they might be able to afford and an estimated loan amount for which they might qualify.

- *Step #3 - Exchanging Personal/Financial Information.* Testers were to be forthcoming and provide income, debts, assets, credit information and other personal and financial characteristics when requested by a lender. Testers were instructed to be precise when providing their financial information and refer to their "cheat sheets" if necessary. Under no circumstances, however, were testers to provide a social security number or date of birth or authorize a credit check.
- *Step #4 - Recording Information on Financing Options Recommended.* Testers were required to take notes and record information provided by the lender such as suggested home price range, an estimated loan amount, and details about any financing options recommended.
- *Step #5 - Ending the Visit.* Testers were instructed to thank the lender for any assistance and allow the lender to suggest any follow-up contact.

Following every test visit, testers were instructed to complete a *Test Report Form* and a *Test Narrative Form*. The *Test Report Form* records testers' responses to questions about their test experience and details the information that was provided by the lender (see Annex B). The *Test Narrative Form* is a detailed, chronological, account of the test experience. Additional narrative forms were completed by testers following any phone contact with a lender. Testers were instructed to complete all forms as soon as possible following contact with a lender. Testers completed the forms based on their recollection of what occurred during the test, and on their review of notes taken and materials obtained during the test.[9]

All testers were instructed to contact their test coordinator after each test visit to arrange a convenient time to meet as soon as possible following the completion of a test. The purpose of this meeting or "debriefing" was to:

- collect all of the completed test forms, notes and all other materials obtained by the tester;
- review the completed test forms (including the detailed narrative) to make sure the forms were filled out completely and accurately and that they were signed and dated;

[9] Because of the complexity of lender testing, the detailed narratives played a particularly important role in quality control. Specifically, test coordinators, quality control supervisors, and Urban Institute staff all reviewed the narrative reports to ensure that testers adhered to HTP protocols *and* accurately completed the more structured, closed-ended *Test Report Form*.

- allow the test coordinator to clarify any issues that were raised by the test reports and permit the tester to bring up any concerns about the test or mention any deviations they may have made from the test assignment or protocols; and
- aid the test coordinator in determining whether or not any immediate follow-up was necessary to complete the test (e.g. return visit, phone call).

Test coordinators used a "Debriefing Checklist" to be sure they reviewed the test materials consistently with each tester. Testers were assigned local voice mail telephone numbers so that the local test coordinators could record all follow-up contact received from lenders. Following the tester training session, testers recorded personalized greetings on the voice mail number assigned to them. Test coordinators monitored all assigned voice mail numbers every three to five days for messages. To ensure the integrity of this data, messages could only be retrieved by use of a passcode, which was only provided to Urban Institute staff and the test coordinators. Messages received on tester voice mail numbers were transcribed by the test coordinators in narrative form, and these documents became part of the completed test file. Depending upon the nature of the follow-up contact, test coordinators and Urban Institute staff determined whether it was appropriate for a tester to respond to the follow-up contact that was initiated by the lender.

Replicating HTP Lender Testing Protocols

The testing approach, tester assignment process, testing protocols and test forms described in this chapter were developed exclusively for use in this research project. Other organizations that conduct testing may use different, though no less effective, approaches to mortgage lending testing. Also, the protocols, procedures, training materials and test forms are not intended to limit or restrict the performance of other types of lender testing or establish a legal standard for testing that is conducted to enforce fair lending laws. Organizations that conduct testing to investigate discriminatory lending practices as part of a fair lending enforcement program should understand that these testing protocols and materials were developed solely for use in this research project.

Pre-application mortgage lending testing, whether for research or enforcement, is a complex, costly, and time-consuming activity. This study demonstrates a testing approach which does yield credible and objective observations about lender conduct during the pre-application stage of the mortgage lending process. Organizations that have developed a strong testing capability and expertise in the area of mortgage lending practices may find useful applications for some of the information described in this chapter. Many organizations, however, including some that routinely conduct other types of fair housing tests may not currently possess the internal capacity, staff resources, technical knowledge, training, or testers

required to effectively implement pre-application mortgage lending tests. These organizations are cautioned that careful planning, qualified personnel, additional training and substantial resources may be required to overcome some of the significant implementation challenges associated with the type of pre-application mortgage lending tests conducted here.

CHAPTER 3: PATTERNS OF UNEQUAL TREATMENT IN LOS ANGELES AND CHICAGO

Even at the pre-application stage, inquiries about mortgage products and terms are complicated interactions and differences in treatment can take many forms. Based upon the testing protocols and procedures described in chapter 2, we explored six major questions about the information and assistance that lending institutions provided:[8]

1) Did testers receive the information they requested about loan amounts and house prices they could afford?
2) How much were testers told they could afford to borrow and/or buy?
3) How many specific products were testers told about?
4) How much "coaching" did testers receive to help them qualify for a loan?
5) Did testers receive follow-up calls from lenders?
6) Were testers encouraged to consider FHA loans as an option?

In each of these areas, the experience of the white Anglo and minority members of a tester pair were compared to determine whether both were treated equally, the white Anglo tester was favored, or the minority tester was favored. We then calculated the *incidence* of differential treatment across tests, to reflect the frequency with which equally qualified partners were treated differently from one another when they visited lending institutions to inquire about mortgage products. In addition, for some forms of treatment (such as maximum loan amount), we calculated the magnitude, or *severity* of differential treatment, by comparing the average amount quoted to white Anglo testers to the average amount quoted to minority testers.

This chapter explains these analysis methods in greater detail and then presents the results, focusing in turn on each of the seven major questions listed above. Incidence and magnitude measures are reported separately for each racial/ethnic track in our two pilot sites: black/white tests in Los Angeles; black/white tests in Chicago; Hispanic/Anglo tests in Los Angeles; and Hispanic/Anglo tests in Chicago. Along with these statistical results, we provide narrative examples from individual tests, which illustrate the character and forms that unequal

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[8] Testers also recorded the terms and conditions of specific loan product they were offered. Ideally, one would want to compare terms and conditions for comparable loan products offered to both white and minority customers. However, because HTP protocols called for testers to approach lending institutions with a very general request for information, the product-specific information they received was very diverse. Similar products were listed in different order and given different names, and testers did not always receive a complete set of terms and conditions for every product discussed. Therefore, it is not possible to match products and compare terms and conditions. Annex C presents an exploratory analysis that simply compares average terms and conditions across the specific loan products discussed with testers.

treatment took when it occurred. Especially in testing scenarios as complex as mortgage lending, these vignettes can help highlight the ways differential treatment can and does occur on a case-by-case basis, whether or not the overall pattern of treatment systematically favors one group.

Statistical Methods for Paired Testing Analysis

Data from paired testing can be used to construct three different types of measures: 1) measures of the ***gross incidence*** of differential treatment; 2) measures of the ***net incidence*** of differential treatment; and 3) measures of the ***severity*** of differential treatment. Each of these measures is briefly outlined in turn.

A ***gross incidence*** measure is defined as the share of all tests in which the minority receives less favorable treatment than his or her white Anglo partner. For example:

in xx percent of tests, the loan amount quoted to the white Anglo tester was higher than the amount quoted to the minority tester.

Gross incidence measures provide very simple and understandable indicators of how often minorities are treated less favorably than equally qualified white Anglos. However, there are also cases in which minority testers receive better treatment than their white Anglo partners. Thus, we can construct measures of the gross incidence of minority-favored treatment as well as measures of the gross incidence of white-favored treatment.

Net incidence measures focus on the difference between these two gross incidence measures by subtracting the gross incidence of minority-favored treatment from the gross incidence of white-favored treatment on a given indicator. For example,

the share of tests in which white Anglo testers were quoted higher loan amounts than their minority partners was xx percent greater than the share of cases in which minorities were quoted higher loan amounts.

Therefore, a large net incidence measure would suggest that—even though minorities are sometimes favored over white Anglos—unfavorable treatment of minorities is substantially more prevalent. A small net incidence measure, on the other hand, suggests that while lenders do not always provide comparable treatment to similar customers, they are just as likely to treat minority customers favorably as white Anglo customers.

Some analysts of paired testing data assume that white Anglos do not experience systematic discrimination, so that all cases of minority-favored treatment actually reflect random error in the testing process. If this assumption is correct, then by subtracting cases of minority-favored treatment from the cases of white-favored treatment, the net incidence measure removes the element of random error and reflects the true incidence of discrimination against minorities. However, if the assumption is incorrect (and systematic discrimination against white

Anglos does sometimes occur), then the net measure actually understates the incidence of discrimination against minorities.

In the analysis presented here, gross incidence measures are reported for both white-favored and minority-favored treatment. When these two gross measures are significantly different from one another, then we conclude that a systematic pattern of differential treatment based on race or ethnicity has occurred. If, on the other hand, the incidence of minority-favored treatment is essentially the same as the incidence of white-favored treatment, we cannot conclude that these differences are systematically based on race or ethnicity. Because our sample sizes are relatively small, and our data may not be normally distributed, conventional tests of statistical significance may fail to detect differences in treatment that are actually significant. Therefore, we use the Sign Test to determine whether the incidence of white-favored treatment is significantly different than the incidence of minority-favored treatment.[9]

It is important to note that even when no statistical pattern of race-based differential treatment is observed, individual cases of discrimination may occur. Specifically, even if the gross incidence of white-favored treatment is statistically insignificant, this does not mean that discrimination never occurred, but only that the number of cases was too small to draw any conclusions about systematic patterns across the sample as a whole. Similarly, for variables where the gross measures of white-favored and minority-favored treatment is essentially equal, there may in fact be instances of race-based discrimination, even though the overall pattern does not systematically favor one group. Finally, even when treatment in one area appears to favor either the white Anglo or the minority tester, this does not necessarily mean that the entire test favors that tester. A qualitative review of the entire test file might be needed to assess the overall outcome across multiple measures.

Gross and net incidence measures are complemented by measures of the ***severity*** of differential treatment, which reflect the size or magnitude of differences in treatment between minority testers and their white Anglo partners. For example,

on average, white Anglo testers were quoted loan amounts that were $xx thousand higher than quotes received by their minority partners

Severity measures of this kind can only be constructed for forms of treatment that yield continuous differences, such as dollars of loan amount or number of loan products. These measures do not apply to simpler “yes/no” forms of treatment, such as whether a customer

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[9] See Heckman, James J. and Peter Siegelman. 1993. The Urban Institute Audit Studies: Their Methods and Findings in *Clear and Convincing Evidence: Testing for Discrimination in America* (Fix, Michael, and Raymond J. Struyk eds.). Washington, DC: The Urban Institute Press; and Ramsey, Fred L. and Daniel W. Schafer. 1997. *The Statistical Sleuth: A Course in Methods of Data Analysis*. Belmont, CA: Wadsworth Publishing Company.

receives any information or whether a customer is told she is qualified for any loan products. Again because of our small sample sizes and the potential that the data are not normally distributed, we have employed the more sensitive Wilcoxon Rank Sum Test to measure the statistical significance of these severity measures.[10]

For all of the treatment indicators reported below, additional analysis **stratified** the tests by three potentially important factors: whether both testers in the pair met with the same or different loan officers, whether the lender was a prime or subprime institution, and whether testers met with a minority agent. These stratified results are presented in Annex D. Note that because of the small sample sizes, these comparisons are based on pooled data from both Los Angeles and Chicago.

Although not mandated by our testing protocols, in approximately half of all tests both testers in a pair happened to meet with the same loan officer. In the other half of tests, testers met with different loan officers from the same branch of the same institution. The question of whether testers saw the same loan officer is particularly important because it is often used by lending institutions to explain away observed differences in treatment. When tests were stratified by whether testers saw the same loan officer or different loan officers, the patterns of differential treatment remained essentially the same. Therefore, there is no evidence that statistically significant differences in treatment are more prevalent when the two testers see different loan officers.

Tests were also stratified based on whether the lending institution has been identified by HUD as a subprime lender. Although our sampling protocols did not mandate the inclusion of subprime institutions, subprime institutions were tested to the extent that they were represented among HMDA-reporters in our two sites. Tests at subprime institutions made up 10.5 percent of all tests conducted in Los Angeles, and only 5 percent of tests completed in Chicago. Only 7.7 percent of all tests in the sample as a whole were conducted at subprime lending institutions. Since statistical analyses on such a small number of tests are not reliable, a true stratification analysis based on subprime/prime lenders cannot be completed. However, when subprime tests were excluded from the analysis, patterns of differential treatment were essentially the same for all treatment indicators.[11] Therefore, there is no evidence from this testing effort that subprime lenders are either more or less likely to treat minorities unfavorably at the pre-application stage.

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[10] See Ramsey, Fred L. and Daniel W. Schafer. 1997. *The Statistical Sleuth: A Course in Methods of Data Analysis*. Belmont, CA: Wadsworth Publishing Company.

[11] To identify subprime lenders, we used HUD's 1999 list of subprime lenders. More information about this list, and a copy of the list itself (table A.1) can be found at: http://www.huduser.org/datasets/manu.html .

Finally, we explored differences in test results based upon the race or ethnicity of the loan officer. In about 30 percent of all tests, testers met with a minority loan officer. One hypothesis is that minority loan officers may treat minority customers more favorably than white Anglos. In fact, we found that white-favored treatment occurred somewhat more frequently when the loan officer was a white Anglo. But there was no increase in minority-favored treatment when the loan officer was minority.

Question 1: Did testers receive the information they requested?

When testers visited mortgage lending institutions, they posed as first-time homebuyers trying to obtain basic information about how much they might be able to borrow and how much house they can realistically afford. Thus, our first group of treatment measures focus on whether white Anglo and minority testers were equally successful in getting the basic information they asked for. Exhibits 3-1 and 3-2 report the incidence of differential treatment for four indicators in this category:

- Was a loan amount provided?
- Was a house price provided?
- Were specific financing options discussed?
- Were financial details exchanged (did the loan officer provide information about loan amount and/or house price after receiving financial information from the tester)?

In addition, we constructed a summary score for this group of treatment indicators, reflecting both the amount and quality of information testers received. This summary score encompasses all four of the individual indicators that make up this category. It ranks and scores the indicators to create an overall measure of the level of information received. Scores were assigned to each tester as follows:

Summary Score	Treatment
5	Financial details were exchanged and the tester received a loan amount or house price and specific financing options were discussed
4	Financial details were exchanged and the tester received a loan amount or house price but no specific options were discussed
3	Financial details were not exchanged but the tester received a loan amount or house price and specific financing options were discussed
2	Financial details were not exchanged and the tester received a loan amount or house price but no specific options were discussed
1	The tester did not receive a loan amount or house price

Exhibit 3-1: Who Received the Information Requested?
Black/White Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Favored	% Black Favored	Significance Test	% White Favored	% Black Favored	Significance Test
Loan amount provided	6.8	4.1	0.73	6.3	1.3	0.22
House price provided	6.8	6.8	1.00	5.1	3.8	1.00
Specific options discussed	6.8	5.5	1.00	6.3	0.0	0.06 *
Financial details exchanged	13.7	11.0	0.81	17.7	8.9	0.19
Overall info provided	**9.5**	**8.1**	**1.00**	**8.9**	**5.1**	**0.55**

* difference between % white favored and % black favored is statistically significant at a 90% confidence level or higher

** difference between % white favored and % black favored is statistically significant at a 95% confidence level or higher

Exhibit 3-2: Who Received the Information Requested?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles			Chicago		
	% Anglo Favored	% Hispanic Favored	Significance Test	% Anglo Favored	% Hispanic Favored	Significance Test
Loan amount provided	11.4	1.3	0.02**	5.1	3.8	1.00
House price provided	10.1	1.3	0.04**	6.4	6.4	1.00
Specific options discussed	11.5	1.3	0.02**	5.7	8.6	0.75
Financial details exchanged	17.7	10.1	0.29	10.1	13.9	0.65
Overall info provided	**12.7**	**1.3**	**0.01****	**7.5**	**8.8**	**1.00**

* difference between % Anglo favored and % Hispanic favored is statistically significant at a 90% confidence level or higher

** difference between % Anglo favored and % Hispanic favored is statistically significant at a 95% confidence level or higher

Then, for each test, scores were compared for the two testers to determine whether one was favored overall. The tester with the higher summary score was considered favored in this area.

Testers received the same treatment most of the time on black/white tests in both Los Angeles and Chicago. The incidence of both white-favored and minority-favored treatment was almost always below 10 percent, with slightly higher incidences only in the

financial details exchanged category. For most indicators, there were no statistically significant differences between the share of white-favored treatment and the share of minority-favored treatment. The only statistically significant difference was found on specific financing options. In 6.3 percent of black/white tests in Chicago, the lender discussed specific financing options with the white tester but not the black tester in a pair. Black testers were never favored on this treatment variable.

For Hispanic/Anglo tests, testers received the same treatment most of the time, but Anglo testers were favored overall in Los Angeles. Results for the Hispanic/Anglo tests are similar to black/white tests in that testers received the same treatment most of the time. However, in Los Angeles, when differences did occur, they were significantly more likely to favor Anglos than Hispanics. Specifically, the incidence of Anglo-favored treatment for loan amount provided, house price provided, and specific financing options discussed was about 10 to 12 percent, while the incidence of Hispanic-favored treatment on these indicators was only about 1 percent. For the overall information summary score, Anglos were favored 12.7 of the time in Los Angeles, while Hispanics were favored only 1.3 percent of the time. In Chicago, on the other hand, the Hispanic/Anglo results were comparable to the black/white results discussed earlier, with no significant pattern of differential treatment favoring either Hispanics or Anglos.

> Although a white male tester declined to authorize a credit check, the loan officer pre-qualified him for a maximum loan amount of $200,000. Four days later, the same loan officer met with a Hispanic male tester and refused to provide any information or service. The loan officer told the Hispanic tester, "we usually don't meet with anyone without doing the credit check, it would be a waste of time for you and for me" and added "you can go to other lenders, they might be able to help you without first pulling out your credit as every mortgage corporation has a different policy." When the tester pressed one more time to obtain an estimate, the loan officer stated, "I'm sorry, but I can't answer your questions without first pulling your credit."

Question 2: How much were testers told they could afford?

In HTP, testers asked loan officers for help in figuring out a price range for their housing search and loan amounts for which they would be qualified. Because the minority and white Anglo members of each tester team were carefully matched with respect to their financial characteristics, they should have received comparable estimates from the lending institutions they visited. If minority homebuyers do not receive estimates of affordable loan amounts and house prices that are comparable to those provided to white Anglo homebuyers, their housing search may be discouraged or misdirected. They may conclude that they cannot afford the kind of house they want, or they may limit their search to lower-priced neighborhoods than they could in fact afford. The next group of treatment indicators focuses on the maximum loan amounts and house prices that testers were told they could afford. This

analysis is limited to tests in which both testers were able to exchange accurate financial information and obtain either a loan amount or a house price from the loan officer.[12]

The two members of a tester pair were often quoted different house prices or loan amounts, but in general these differences did not systematically favor either white Anglos or minorities.[13] Exhibits 3-3 and 3-4 report the share of cases in which one tester was quoted a higher loan amount or house price than his or her partner. For black/white tests in both Los Angeles and Chicago, and for Hispanic/Anglo tests in Los Angeles no statistically significant patterns of either white-favored or minority-favored treatment occurred.

However, for Hispanic/Anglo tests in Chicago, Hispanics testers were systematically disfavored on loan amounts and house prices. Anglo testers were quoted higher loan amounts or house prices than their Hispanic partners about 50 percent of the time, while Hispanics were favored less than 20 percent of the time. In addition to this significant incidence finding, the severity, or magnitude of loan amount and house price differences was also statistically significant. The average loan amount quoted to Anglo testers in Chicago was $190,200. This amount was almost $10,000 higher than the average of $180,300 quoted to their Hispanic partners. The average house price suggested to Anglo testers—about $200,000—was $12,000 higher than the average suggested to comparable Hispanic homebuyers—$188,000.

> A loan officer pre-qualified a white male tester for a home price of $185,000 and a maximum loan amount of $175,750. The loan officer also provided the white tester with a "Pre-Qualification Certificate." Eight days later, the same loan officer met with an African American male tester and pre-qualified him for a home price of $165-175,000 and a maximum loan amount of $160,000. The loan officer did not provide the African American tester with a "Pre-qualification Certificate."

Question 3: How many loan products were testers told about?

In addition to loan amounts and house prices, our protocols called for testers to find out about specific loan products that might meet their needs, including products recommended by the loan officer. Therefore, we compared the experience of minority and white Anglo testers in terms of the number of loan products described. Homebuyers presumably benefit when they are able to obtain information about a variety of financing options. If minorities receive less

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[12] Results are the same when all tests in which both testers received a loan amount or house price are included in the analysis, regardless of whether or not financial information was exchanged.

[13] Although minority and white tester financial characteristics were closely matched, testing protocols did call for the minority tester to be slightly more qualified that his or her white partner. The incidence indicators used for loan amount and house price analysis incorporate a 5 percent threshold to account for the slight variations in qualifications. More specifically, one tester in a pair was considered to be favored over the other if the house price or loan amount he was quoted exceeded his partner's by at least 5 percent.

complete information about available loan products than comparable white Anglo homeseekers, they may have to spend more time and effort to find out about available products, or they may actually be unable to take advantage of beneficial products.

Exhibit 3-3: Who Was Quoted A Higher Loan Amount or House Price?
Black/White Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Favored	% Black Favored	Significance Test	% White Favored	% Black Favored	Significance Test
Maximum loan amount	32.6	26.1	0.70	26.9	17.3	0.40
Maximum house price	36.2	27.7	0.58	25.5	21.6	0.84
Average Amounts	**White**	**Black**	**Significance Test**	**White**	**Black**	**Significance Test**
Maximum loan amount	$262,438	$266,484	0.92	$182,730	$183,122	0.28
Maximum house price	$285,783	$291,186	0.89	$193,824	$193,312	0.56

* difference between % white favored and % black favored is statistically significant at a 90% confidence level or higher

** difference between % white favored and % black favored is statistically significant at a 95% confidence level or higher

Exhibit 3-4: Who Was Quoted A Higher Loan Amount Or House Price?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles			Chicago		
	% Anglo Favored	% Hispanic Favored	Significance Test	% Anglo Favored	% Hispanic Favored	Significance Test
Maximum loan amount	42.9	32.7	0.51	51.9	19.2	0.01**
Maximum house price	44.0	30.0	0.32	51.0	13.7	0.00**
Average Amounts	**Anglo**	**Hispanic**	**Significance Test**	**Anglo**	**Hispanic**	**Significance Test**
Maximum loan amount	$271,570	$266,172	0.34	$190,193	$180,301	0.00**
Maximum house price	$283,846	$284,737	0.64	$199,932	$188,055	0.00**

* difference between % Anglo favored and % Hispanic favored is statistically significant at a 90% confidence level or higher

** difference between % Anglo favored and % Hispanic favored is statistically significant at a 95% confidence level or higher

In many cases, white Anglo testers learned about more products than their minority partners. (See Exhibits 3-5 and 3-6). In the Chicago black/white tests, lenders discussed more products with white testers than their black partners 48.2 percent of the time, while blacks were favored in only 21.4 percent of tests. Overall, whites learned about an average of 2.95 products per visit while blacks learned about only 2.43 products. The same pattern occurred for Hispanic/Anglo tests in both Los Angeles and Chicago. In Los Angeles, although the *incidence* of differential treatment was not statistically significant, the magnitude measure shows that Anglos were told about an average of 2.92 products when Hispanic testers were told about only 2.33 (this difference is statistically significant). In Chicago, both the incidence and severity measures were statistically significant for the Hispanic/Anglo tests. Anglos were told about more products than their Hispanic partners 55.6 percent of the time, while Hispanics were only favored in 27.8 percent of tests. Moreover, Anglos learned about an average of 2.83 products per visit, compared to only 2.44 products per visit for Hispanics.

> A loan officer told a white male tester about five possible loan options, including both conventional and FHA products. Eight days later, the same loan officer only discussed one loan option (an FHA product) with the Hispanic tester.

Question 4: How much "coaching" did testers receive?

One of the important services loan officers provide at the pre-application stage is "coaching"—advice and assistance to potential homebuyers about how they can improve their qualifications as borrowers. If minority customers receive less coaching than comparable white Anglos, they may lack the information they need to correct problems that might prevent them from obtaining mortgage financing. Thus, coaching represents a subtle but potentially important form of differential treatment in the mortgage lending process at the pre-application stage.

In the Homeownership Testing Project, testers reported whether loan officers provided advice or guidance about any of the following:

- paying down debts;
- debt consolidation;
- downpayment assistance (e.g., gift from family, special program, etc.);
- seller assistance (e.g., paying points, downpayment, closing costs, etc.);
- pre-qualification or pre-approval letter; or
- homebuying seminar.

Exhibit 3-5: Who Learned About More Products?
Black/White Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Favored	% Black Favored	Significance Test	% White Favored	% Black Favored	Significance Test
Number of products	38.8	32.7	0.74	48.2	21.4	0.02**
Average Amounts	**White**	**Black**	**Significance Test**	**White**	**Black**	**Significance Test**
Number of products	1.2.53	2.41	0.44	2.95	2.43	0.01**

* difference between % white favored and % black favored is statistically significant at a 90% confidence level or higher

** difference between % white favored and % black favored is statistically significant at a 95% confidence level or higher

Exhibit 3-6: Who Learned About More Products?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles			Chicago		
	% Anglo Favored	% Hispanic Favored	Significance Test	% Anglo Favored	% Hispanic Favored	Significance Test
Number of products	51.9	34.6	0.23	55.6	27.8	0.04**
Average Amounts	**Anglo**	**Hispanic**	**Significance Test**	**Anglo**	**Hispanic**	**Significance Test**
Number of products	2.92	2.33	0.03**	2.83	2.44	0.05*

* difference between % Anglo favored and % Hispanic favored is statistically significant at a 90% confidence level or higher

** difference between % Anglo favored and % Hispanic favored is statistically significant at a 95% confidence level or higher

All of these information items would help potential borrowers improve their prospects for obtaining a mortgage loan. We compared the number of these items that were discussed with each of the two members of a tester pair; exhibits 3-7 and 3-8 present the results of this analysis.

Whites received more coaching than their minority partners in a statistically significant share of the black/white tests in both Los Angeles and Chicago. In both markets, whites were favored over half the time, while their minority partners were favored less than one fourth of the time. In Los Angeles, white testers received advice about 1.42 topics per visit compared to only 0.8 topics per visit for their black partners. In Chicago, white testers received advice about 1.54 topics per visit compared to only 1.06 topics per visit for blacks.

The same pattern of unequal coaching occurred for Hispanic/Anglo tests in Chicago, where Anglos were favored in 41.3 percent of the tests while their Hispanic partners were favored in only 23.8 percent of tests. On average, Anglos received information about 0.99 topics per visit compared to only 0.64 topics per visit for Hispanics. There was no statistically significant pattern of unequal coaching for Hispanic/Anglo tests in Los Angeles.

A loan officer informed a white male tester about the possibility of having the seller pay the closing costs and referred the tester to a real estate agent. In making the referral, the agent stated "Let me give you someone's card. He's a good guy. You'll get along with him, I know. He's your age" and added that "he'll know what you are looking for." The same loan officer did not inform the African American male tester about the possibility of a seller paying closing costs and did not refer the tester to a real estate agent.

Question 5: Did testers receive follow-up contact?

After the pre-application visit ended, some testers received follow-up telephone calls or mail from loan officers. These contacts may serve an important marketing and educational function, providing additional information to potential homebuyers, encouraging them to continue the homebuying process, and letting them know that they are valued customers. If minorities receive less follow-up of this kind from lending institutions they visit, they may become discouraged about their housing search or may take longer to find suitable mortgage financing. Follow-up contacts to testers were systematically recorded, and we have compared the number of contacts received by the white Anglo and minority members of each tester pair (see Exhibits 3-9 and 3-10).

Exhibit 3-7: Who Received More Coaching?
Black/White Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Favored	% Black Favored	Significance Test	% White Favored	% Black Favored	Significance Test
Positive Coaching	43.2	18.9	0.01**	50.6	29.1	0.03**
Average Amounts	**White**	**Black**	**Significance Test**	**White**	**Black**	**Significance Test**
Positive Coaching	1.84	1.3	0.01**	1.74	1.53	0.33

* difference between % white favored and % black favored is statistically significant at a 90% confidence level or higher

** difference between % white favored and % black favored is statistically significant at a 95% confidence level or higher

Exhibit 3-8: Who Received More Coaching?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles			Chicago		
	% Anglo Favored	% Hispanic Favored	Significance Test	% Anglo Favored	% Hispanic Favored	Significance Test
Positive Coaching	39.2	36.7	0.80	40.5	15.2	0.01*
Average Amounts	**Anglo**	**Hispanic**	**Significance Test**	**Anglo**	**Hispanic**	**Significance Test**
Positive Coaching	1.67	1.60	1.00	1.25	1.14	1.00

* difference between % Anglo favored and % Hispanic favored is statistically significant at a 90% confidence level or higher

** difference between % Anglo favored and % Hispanic favored is statistically significant at a 95% confidence level or higher

Exhibit 3-9: Who Received More Follow-Up?
Black/White Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Favored	% Black Favored	Significance Test	% White Favored	% Black Favored	Significance Test
Follow-Up Contact	5.4	5.4	1.00	12.7	1.3	0.01**
Average Amounts	**White**	**Black**	**Significance Test**	**White**	**Black**	**Significance Test**
Follow-Up Contact	0.11	0.05	0.67	0.22	0.03	0.01**

* difference between % white favored and % black favored is statistically significant at a 90% confidence level or higher

** difference between % white favored and % black favored is statistically significant at a 95% confidence level or higher

Exhibit 3-10: Who Received More Follow-Up?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles			Chicago		
	% Anglo Favored	% Hispanic Favored	Significance Test	% Anglo Favored	% Hispanic Favored	Significance Test
Follow-Up Contact	6.3	13.9	0.21	7.6	13.9	0.33
Average Amounts	**Anglo**	**Hispanic**	**Significance Test**	**Anglo**	**Hispanic**	**Significance Test**
Follow-Up Contact	0.19	0.38	0.06*	0.16	0.28	0.21

* difference between % Anglo favored and % Hispanic favored is statistically significant at a 90% confidence level or higher

** difference between % Anglo favored and % Hispanic favored is statistically significant at a 95% confidence level or higher

Only the black/white tests in Chicago show a statistically significant pattern of unequal follow-up. In all three other tracks of tests (black/white in Los Angeles and Hispanic/Anglo in both Los Angeles and Chicago), differential treatment was commonplace, but it did not systematically favor either white Anglos or minorities. The Chicago results are quite dramatic, however. White testers received more follow-up than their black partners in 12.7 percent of the tests, compared to only 1.3 percent of tests in which the black testers were favored. On average, whites in Chicago received 0.22 follow-up calls per visit to a lending institution, while blacks received only 0.03 follow-up calls per visit. In Los Angeles, although the *incidence* of differential treatment was not statistically significant, the magnitude measure suggests that Hispanics received more follow-up than their Anglo partners. Specifically, Hispanics received an average of 0.38 follow-up contacts per visit compared to an average of only 0.19 for Anglos (this difference is statistically significant).

> After meeting with a white and a black tester, the loan officer asked both for their addresses. The white tester received follow-up contact in the form of a business card and a brochure about an additional financing option to consider. The black tester received no follow-up mail or telephone calls.

Question 6: Were testers encouraged to consider FHA?

One type of product that lenders may suggest to prospective homebuyers is an FHA loan. Because FHA guidelines are relatively flexible, they can serve some borrowers who do not meet conventional underwriting standards. However, FHA loans can cost more than conventional loans over the long term and may also permit lenders to charge higher fees. Moreover, in Los Angeles, the testers' financial characteristics qualified them for a conventional loan above the FHA maximum, so that recommending FHA might unnecessarily constrain their search options.

We constructed two variables that reflect the information provided by lenders about FHA. The first indicates whether testers were encouraged to consider FHA, and includes cases in which an FHA loan was among the specific products described to the tester as well as cases in which the loan officer recommended FHA. The second variable indicates whether FHA was explicitly discouraged, and includes cases in which the loan officer told testers that FHA would not be a good option for them to consider. Exhibits 3-11 and 3-12 report the share of tests in which FHA was either encouraged or discouraged.

Black testers in Los Angeles were substantially more likely to be encouraged to consider FHA than their white partners. Specifically, FHA was encouraged for black testers but not their white partners in 30.8 percent of tests, while FHA was encouraged to whites but not blacks in only 7.7 percent of tests. None of the results in the remaining groups of tests (black/white in Chicago and Hispanic/Anglo in Los Angeles and Chicago) provide evidence of systematic differences in treatment on the basis of race or ethnicity. In general, white Anglos

and minorities received the same encouragement or discouragement, and when differences occurred they did not favor either white Anglos or minorities at statistically significant levels.

Exhibit 3-11: Who Was Encouraged to Consider FHA?
Black/White Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Higher	% Black Higher	Significance Test	% White Higher	% Black Higher	Significance Test
FHA encouraged	7.7	30.8	0.10*	9.8	14.6	0.75
FHA discouraged	7.7	3.8	0.63	12.2	4.9	0.45

* difference between % white higher and % black higher is statistically significant at a 90% confidence level or higher

** difference between % white higher and % black higher is statistically significant at a 95% confidence level or higher

Exhibit 3-12: Who Was Encouraged to Consider FHA?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles			Chicago		
	% Anglo Higher	% Hispanic Higher	Significance Test	% Anglo Higher	% Hispanic Higher	Significance Test
FHA encouraged	15.0	30.0	0.51	13.0	13.0	1.00
FHA discouraged	0.0	0.0	—	2.2	2.2	1.00

* difference between % Anglo higher and % Hispanic higher is statistically significant at a 90% confidence level or higher

** difference between % Anglo higher and % Hispanic higher is statistically significant at a 95% confidence level or higher

Summary of Statistically Significant Findings

Unequal treatment takes different forms in the two metropolitan areas and for the two minority groups.

In Los Angeles --

- Blacks were offered less coaching than comparable white homebuyers, and were more likely to be encouraged to consider an FHA loan.
- Hispanics were denied basic information about loan amount and house price, told about fewer products, and received less follow-up compared to Anglo homebuyers.

In Chicago –

- Blacks were being denied basic information about loan amount and house price, told about fewer products, provided less coaching, and received less follow-up than comparable white homebuyers.
- Hispanics were quoted lower loan amounts or house prices, told about fewer products, and provided less coaching than comparable Anglo homebuyers.

The frequency of unfavorable treatment varies considerably from one category to another. For some categories, equal treatment occurred in the vast majority of cases, but when differences occurred, the white Anglo was dramatically more likely to be favored than the minority. For other treatment categories, differences in treatment occurred much more often, but again were substantially more likely to favor the white Anglo than the minority.

One surprising aspect of these findings is the lack of consistency across either metro area or racial/ethnic group. In other words, one might expect to see the same pattern of treatment for both blacks and Hispanics in the same metropolitan area, or for blacks in both metros and Hispanics in both metros. Instead, the pattern of statistically significant results is somewhat different for each of the four tracks of testing we conducted. Given the differences between Los Angeles and Chicago, however, this result may be less surprising than it first appears. Los Angeles is a very high-cost housing market, with a large, diverse, and rapidly growing Hispanic population and a smaller, more stable African American minority. In contrast, Chicago is one of the nation's most segregated housing markets, with a smaller Hispanic population than black population. At the time our testing was underway (spring and summer of 2000), housing prices in the Chicago metropolitan area were considerably lower than in Los Angeles. Given these structural differences, it seems quite plausible that perceptions of blacks and Hispanics as potential homebuyers are different in each of the two metropolitan areas, and that the treatment they receive relative to whites varies as a result.

CHAPTER 4: SUMMARY AND CONCLUSIONS

The Homeownership Testing Project was designed to accomplish both research and enforcement goals, developing *knowledge* about the incidence of mortgage lending discrimination and *tools* for conducting rigorous testing at the pre-application stage. Taken together, the pre-test and pilot phases of this effort demonstrate that paired testing can be an effective tool, both for enforcement and for research purposes, and that in two major housing markets—Los Angeles and Chicago—African American and Hispanic homebuyers face a significant risk of unequal treatment when they visit mortgage lending institutions to make pre-application inquiries.

Pre-Test Stage

The experience from our pre-testing effort demonstrates that rigorous paired testing is feasible for all the portals we considered and can yield meaningful evidence of differential treatment at the pre-application stage of the mortgage lending process. Testers can be trained to present themselves as equally qualified homebuyers, and their requests for information at the pre-application stage are treated seriously. Individual testers (both men and women) can present themselves as members of married couples and receive serious consideration about financing options.

Lending institutions, mortgage brokers, real estate agents, new construction sales agents, and mobile home sales agents all have the potential to provide detailed information about affordable loan amounts, loan products, and terms and conditions. They provide this information even though testers refuse to undergo credit checks and do not offer their social security numbers. In many instances, testers received written analyses of possible financing options, which made it easier to record loan amounts and terms systematically. Our pre-test experience demonstrates that rigorous paired testing of the lending market can yield observable differences in treatment.

One of the most serious forms of discrimination that can be discerned by this type of testing is differential estimates of home price and total loan amount. At the pre-test stage, we found that when testers ask for information on how much house they can afford to buy, they are given estimates of their affordable house price and total loan amount, and we observed differences in these estimates that could be attributable to race or ethnicity. This is a very serious form of differential treatment, since a homebuyer's understanding of how much he or she can afford to borrow will determine what houses and neighborhoods are considered in the housing search. Lower estimated loan amounts for minority homebuyers can significantly restrict the range of housing and locational options open to them. This kind of differential treatment cannot be detected by protocols that have testers state their price range or ask about

financing terms and conditions for a particular house. Therefore, we designed the pilot testing protocols around a more open-ended inquiry about affordable price range and loan amounts.

Although differences in loan amount and house prices seem to be detectable through paired testing, we found it more challenging to make product-by-product comparisons of loan terms and costs. Because lenders do not use standardized labels for their various products, and because they may present alternative products in a different order from one customer to the next, it is difficult for testers to record the information they receive in a way that makes it easy to compare terms and conditions for matching products. Based on our pre-test experience, we are concerned that it may not be possible to design a large-scale research test that reliably detects differences in loan terms and conditions. This limitation does *not* apply to enforcement testing, where reports from a small number of tests can be analyzed carefully side-by-side to match products that should have the same terms and conditions across testers.

It is important to recognize that mortgage lending testing is complex and demanding and requires more from both testers and testing organizations than routine rental testing. Great care must be taken with tester recruitment, training, supervision, and with systematic record keeping, as well as with the actual conduct of the tests themselves. Otherwise, test results will not be credible. Even organizations with a strong track record in rental testing are likely to find that pre-application lending tests place unprecedented demands on their staff capacity. In particular, testing supervisors must be extremely well-organized, with good attention to detail and time to supervise testers closely. Testers should be briefed individually and in-person before and after every test, and test report forms and narratives must be reviewed carefully to ensure that all of the information a tester obtained is recorded completely and accurately. Testing organizations should also have the capacity to make advance phone calls to obtain locations and office hours for some lending institutions and to monitor follow-up phone messages from tested institutions.

In addition to the demands on testing supervisors, individual testers must commit sufficient time to the effort to learn the basics of mortgage lending, to follow strict protocols, to make extended test visits (during working hours), and to record their experiences completely. We believe that the pools of "volunteer" testers generally relied upon by many fair housing organizations may not be able to commit sufficient time and attention for lending testing. It may be necessary to hire full- or part-time tester teams for the duration of a testing project. Unless testers can make large blocks of time available to work during ”banking" hours, attend in-person briefings before and after every test, conduct test visits that often last as long as an hour, and complete lengthy report forms accurately, it is not possible to complete large numbers of tests in any reasonable time period.

Pilot Stage

Based upon the experience gained in the pre-test stage, the pilot stage of HTP focused on mortgage lending institutions, with all testers posing as reasonably well-qualified, first-time homebuyers making preliminary inquiries about how much they could afford to borrow and what types of loan products might be available. The pilot test results show that in both Los Angeles and Chicago, African American and Hispanic homebuyers face a significant risk of experiencing less favorable treatment than comparable whites when they visit mortgage lending institutions to inquire about financing options. In the majority of cases, minorities and whites received equal treatment, or when differences occurred, they were equally likely to favor the minority as the white. Still, in both metropolitan areas, paired testing revealed statistically significant patterns of unequal treatment that systematically favor whites.

Unequal treatment takes different forms in the two metropolitan areas and for the two minority groups (see Exhibit 4-1).

In Los Angeles --

- Blacks were offered less coaching than comparable white homebuyers and were more likely to be encouraged to consider an FHA loan.
- Hispanics were denied basic information about loan amount and house price, told about fewer products, and received less follow-up than comparable Anglo homebuyers.

In Chicago –

- Blacks were denied basic information about loan amount and house price, told about fewer products, offered less coaching, and received less follow-up than comparable white homebuyers.
- Hispanics were quoted lower loan amounts or house prices, told about fewer products, and offered less coaching than comparable Anglo homebuyers.

Exhibit 4-1: Adverse Treatment of African American and Hispanic Homebuyers

Treatment Categories	Los Angeles		Chicago	
	Blacks	Hispanics	Blacks	Hispanics
Information requested		U	U	
Loan amount and house price				U
Number of products		U	U	U
Coaching	U		U	U
Follow-up contact		U	U	
FHA encouraged	U			

U Unequal treatment favors whites or Anglos over blacks or Hispanics at a 90 percent level of statistical significance or higher

☐ No statistically significant differences in treatment

The frequency of unfavorable treatment varies considerably from one category to another. For some categories, equal treatment occurred in the vast majority of cases, but when differences occurred, the white was dramatically more likely to be favored than the minority. For other treatment categories, differences in treatment occurred much more often, but again were substantially more likely to favor the white than the minority.

Despite the variations in the forms that differential treatment takes, these findings demonstrate that African American and Hispanic homebuyers in both Los Angeles and Chicago face a significant risk of unequal treatment when they visit mortgage lending institutions to make pre-application inquiries. Discriminatory treatment at this early stage in the mortgage lending process has the potential to discourage some minorities from continuing their housing search, to limit their search to lower cost homes than they could actually afford, and to prevent them from choosing the most favorable loan products.

Future Paired Testing Research

While these findings indicate that unequal treatment of minority homebuyers at the pre-application stage of the mortgage lending process remains a significant problem, they do not tell us how often adverse treatment occurs for other types of borrowers, making different types of pre-application inquiries to other information providers. Thus, future testing efforts can and should focus on other information sources, including mortgage brokers, new home sales agents, mobile home dealers, and referrals from real estate agents. In addition, future studies should include testers posing as less well-qualified borrowers as well as homebuyers with a particular house price in mind.

The protocols implemented in the pilot stage of the Homeownership Testing Project are by no means the only approach that makes sense, either for research or enforcement. And our pilot testing protocols did not fully capture all of the forms of differential treatment that might occur at the pre-application stage. As discussed in Chapter 3, our results suggest that minority and white customers may be quoted different terms and conditions, but because our testers approached lenders with such general inquiries about the amount they might be able to borrow, it is not possible to match the products they were told about, or to determine whether they were quoted different terms and conditions for comparable products. Protocols in which testers approach lending institutions with a specific house price in mind, and request detailed information about available loan products might provide more information about differential treatment on loan terms and conditions.

In addition, some of our tests provided anecdotal evidence that lenders may encourage or discourage customers from considering particular neighborhoods. This may include comments that steer minority customers away from predominantly white areas or that discourage whites from investing in minority neighborhoods. However, the HTP testing protocols were not designed to systematically elicit or record comments of this kind or to analyze the characteristics of communities discussed by loan officers. Future testing efforts should consider strategies for systematically capturing and analyzing this type of differential treatment.

> A loan officer informed a white female tester that Monterey Park is "Asian-infested" and that homes quickly sell to relatives of existing Asian residents. The loan officer told the white tester that she could consider homes in Pasadena, Glendale, Silverlake and the San Gabriel Valley and that she might want to consider Alhambra because it has easy access to the freeway and she could "live quietly in a safe neighborhood." The African American tester received no comments or suggestions about specific neighborhoods.

Based upon the results of the Homeownership Testing Project, we conclude that paired testing at the pre-application stage of the mortgage lending process is both feasible and effective for both enforcement and research purposes. Additional testing clearly should be conducted, but because of the complexity of this kind of testing and the differences between metro area results, we do not recommend a large-scale national study of adverse treatment at the pre-application stage of the mortgage lending process. Instead, systematic studies should be conducted on a site-by-site basis, with ample time and resources for effective training, test coordination, and quality control.

Finally, the experience of HTP demonstrates that research and enforcement testing can be linked without compromising the integrity of either. It is important to distinguish testing for research from testing conducted primarily for law enforcement purposes. Testing for research generally seeks to produce generalizable results regarding the prevalence of adverse treatment for a market area or for the nation as a whole. To achieve these generalizable results, tests are randomized using an accepted sampling frame, and quite large numbers of tests are conducted

in order to support statistically significant comparisons. To generate reliable and objective comparisons of minority and white experiences across a large number of tests, researchers usually use highly structured reporting forms, with closed-ended, “check the box”-type items. By contrast, the purpose of an enforcement test is to establish legal violations and to correct them either through settlement or litigation. Testing for enforcement is often complaint driven, and typically is targeted to a single firm or a selected set of firms. Enforcement testing often requires multiple tests of a single firm, but generally does not involve the large number of tests typical of research testing. As a consequence, enforcement testing report forms tend to be much more open-ended, requiring test partners to provide greater narrative detail, rather than check boxes. These forms are generally analyzed pair-by-pair by a knowledgeable analyst who compares the treatment of test partners across all aspects of the encounter, including subjective as well as objective information.

Although research and enforcement testing differ in significant ways, the distinctions between the two should not be overdrawn. Both are based on the same core methodology and protocols, differing primarily in the way test results are recorded and analyzed. Thus, innovative testing methodologies developed for one application can be adapted for the other. Moreover, randomized testing of large numbers of market transactions need not be limited to research. They can and should be applied in targeting for enforcement. Furthermore, research and enforcement testing can be conducted in tandem, yielding *both* market-wide estimates of the incidence of adverse treatment *and* case-specific evidence of individual violations (evidence that might be followed-up with enforcement oriented testing).

This project effectively balanced the interests of research and enforcement applications, generating tools and procedures that can be adapted for either type of testing, and demonstrating that research testing can help inform and target enforcement testing efforts, without compromising the credibility of the research tests by using them directly for enforcement or evidentiary purposes. If mortgage lending testing proceeds on a site-by-site basis, we recommend the continuation of this linked approach, in which research testing helps provide a market-wide context and targeting mechanism for enforcement testing.

ANNEX A:

ASSIGNED FINANCIAL CHARACTERISTICS

Annex A: Assigned Financial Characteristics

House price is entered into calculator.
Chicago house prices ranged from: $175,000 to $195,000
LA house prices ranged from: $275,000 to $300,000

House Price	$ 250,000	
Loan Amount	$ 237,500	
Closing Costs	$ 2,613	
Down Payment	$ 12,500	
Cash Assets Needed	$ 15,113	
Interest Rate	7.625%	
Monthly Rate	0.6%	
Loan Term	360	
P&I	($1,681.01)	
PMI-monthly	$ 98.96	
Taxes-monthly	$ 375.00	
	tester 1	**tester 2**
Annual Income	$ 98,490	$ 98,701
Applicant	$ 54,314	$ 61,592
Co-Borrower	$ 44,176	$ 37,108
Monthly Income	$ 8,208	$ 8,225
Total Debt	$ 12,217	$ 14,097
Monthly Debt	$ 611	$ 705
Monthly Housing Expense	$ 2,155	$ 2,155
Total Monthly Debt	$ 2,766	$ 2,860
Cash Assets	$ 14,961	$ 15,415
Current Rent	$ 977	$ 1,035
Previous Rent	$ 885	$ 836
DTI ratio	0.3370	0.3477
HSE ratio	0.2626	0.2620
ratio of co-borrower's income	0.4485	0.3760

Loan amount is always 95% of house price (assuming a 5% downpayment).

Closing costs determined by multiplying loan amount by a constant created from data in the pre-test phase.

Cash assets is the sum of closing costs and downpayment.

Interest Rate was assumed at 7.625%for Chicago and 8.25% for LA.

PMI monthly determined as 0.5% of loan amount divided by 12.

Taxes determined by national average constant multiplied by loan amount.

Cash Assets varied slightly for each tester, never more than 2 percentage points from total in "cash assets needed"box.

Rents were a random number between established ranges in each city.

Ratio of tester's income to spouse's varied by a random number between 37.5% and 45%.

DTI (debt to income) ratio: was a random number between established pre-qualification ratios, 33 and 35%.

HSE (housing expense) ratio: was random number between established pre-qualification ratios, 25.5% and 26.5%.

Each tester had a slightly different qualifying ratio within these limits. These qualifying ratios, plus loan amount drove the calculations for testers' monthly and yearly income and debt figures.

ANNEX B:

TESTING REPORT FORM

TEST # _____ TEST COORDINATOR: _____
TESTER NUMBER: _____

TEST REPORT FORM - LENDING

1. **Tester:** _____

_____

2. **Test Site:** _____

Address: _____

_____

3. **Day of Test:** _____ 4. **Date of Test:** _____ _____ /_____ _____ /_____ _____

5. **What time was your appointment?** _____

6. **Time Arrived at Test Site:** _____

7. **Time Departed Test Site:** _____

8. **Information on persons with whom you had contact during your visit** ***[fill in all columns; circle responses where appropriate]:***

NAME OF EMPLOYEE (if known)	RACE*	NATIONAL ORIGIN**	SEX	AGE (estimate)	TITLE AND/OR DUTIES YOU OBSERVED EMPLOYEE PERFORM	DESCRIPTION OF EMPLOYEE (Physical Characteristics)
a.	1 2 3 4 DK	1 2 DK	M F			
b.	1 2 3	1 2 DK	M F			

	4 DK					
c.	1 2 3 4 DK	1 2 DK	M F			
d.	1 2 3 4 DK	1 2 DK	M F			
e.	1 2 3 4 DK	1 2 DK	M F			

1=White; 2=Black; 3=Asian; 4=Other; DK=Don't Know
****1=Hispanic; 2=Non-Hispanic; DK=Don't Know***

9. Were you able to meet with a person who provides information on mortgage loan financing, such as a loan officer, mortgage counselor, or some type of financing specialist, etc. (Hereafter referred to as *LS* for lending specialist)? *[check box]*

☐ **YES** ☐ **NO**

9a. If NO, why not? _____

_____

9b. If YES, with whom did you meet? *[Circle letter from Question 8]*

Employee Letter a b c d e

10. Did the LS indicate that you should first contact a real estate agent or locate a home prior to obtaining information about financing from a lender? *[check box]*

☐ **YES** ☐ **NO**

11. Did the LS tell you that you should contact another lender to inquire about financing? *[check box]*

☐ YES ☐ NO

11a. If YES, what were the reasons given (if any)? _____

_____

_____

11b. If YES, what other lenders, if any, were you told to contact? _____

_____

_____

12. Did the LS say that a credit check would need to be conducted before any information about mortgage financing could be discussed with you? *[check box]*

☐ YES ☐ NO

13. Please indicate what information you provided during your visit and/or in any previous phone contact *[circle number]*:

	Information	Requested	I Volunteered	I Provided in Writing	Was Not Obtained
a.	Your Name	1	2	3	4
b.	Current Address	1	2	3	4
c.	Telephone Number	1	2	3	4
d.	Marital Status	1	2	3	4
e.	Number of Children	1	2	3	4
f.	Source(s) of Your Income	1	2	3	4
g.	Source(s) of Income for Others in Household	1	2	3	4
h.	Amount of Your Income	1	2	3	4
I.	Amount of Income for Others in Household	1	2	3	4
j.	Your Current Place of Employment	1	2	3	4

k.	Current Place of Employment for Others in the Household	1	2	3	4
l.	Your Length of Employment	1	2	3	4
m.	Length of Employment for Others in Household	1	2	3	4
n.	Education Level You Completed	1	2	3	4
o.	Education Level of Others in Household	1	2	3	4
p.	Your Credit Standing	1	2	3	4
q.	Credit Standing of Others in Household	1	2	3	4
r.	Household Indebtedness	1	2	3	4
s.	Household Assets	1	2	3	4
t.	Amount of Available Down Payment	1	2	3	4
u.	Current Housing Situation (Own or Rent)	1	2	3	4
v.	Current Rent	1	2	3	4
w.	Length of Time at Current Address	1	2	3	4
x.	Reason for Moving	1	2	3	4
y.	Price Range Sought	1	2	3	4
z.	Veteran's Status	1	2	3	4
aa.	Social Security Number	1	2	3	4
bb.	Date of Birth				

14. Did the LS tell you that you were NOT qualified for any of the mortgage loan products offered by their institution? ***[check box]***

☐ **YES** ☐ **NO**

14a. If YES, what were the reasons given, if any? _____

_____

_____

15. Did the LS tell you that you were NOT qualified to receive ANY mortgage financing at all? ***[check box]***

☐ **YES** ☐ **NO**

15a. If YES, what were the reasons given, if any? _____

_____

_____

16. Did the LS discuss any of the following with you? ***[check all that apply]***

☐ **PAYING DOWN DEBTS**
☐ **DEBT CONSOLIDATION**
☐ **DOWNPAYMENT ASSISTANCE (e.g., gift from family, special program, etc.)**
☐ **CO-SIGNER**
☐ **SELLER ASSISTANCE (e.g., paying points, downpayment, closing costs, etc.)**
☐ **PRE-QUALIFICATION LETTER**
☐ **HOMEBUYING SEMINAR**
☐ **CREDIT COUNSELING CLASS**
☐ **NONE OF THE ABOVE WERE DISCUSSED**

16a. For any items discussed, please describe what you were told: _____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

17. Did the LS tell you the TOTAL loan amount for which you could qualify? ***[check box]***

☐ **YES** ☐ **NO**

17a. If YES, what was the amount? _____

17b. If NO, what reasons were given for not providing you with a loan amount for which you could qualify? _____

_____

_____

18. Did the LS tell you what home price or price range you could afford? ***[check box]***

☐ **YES** ☐ **NO**

18a. If YES, what was the price or price range? _____

18b. If NO, what reasons were given for not providing you with a home price or price range that you could afford ? _____

_____

_____

19. Did the LS discuss financing options or loan products for which YOU could qualify? *[check box]*

☐ **YES** ☐ **NO**

19a. If NO, what reasons, if any, were given for not providing you with information about financing options or loan products for which you could qualify? _____

_____

_____

_____

19b. If YES, please fill in the boxes on the chart below. Write in the information for loan products described as financing options for which you could qualify.

Name of Loan Program (if known)	**1.**	**2.**	**3.**	**4.**	**5.**
Loan Type *C=Conventional F=FHA O=Other*					
Estimated Loan Amount to be Financed ($)					
Estimated Monthly Payment ($)					
Amount of Downpay-ment Required ($)					
Percent Downpay-ment Required (%)					
Interest Rate Quoted (%)					
Fixed Rate or Variable Rate (F/V)					
Length of Loan (in Years)					
Number of Points, if any					

Estimated Total Closing Costs ($)					
Will Need PMI? (Y/N)					
Other Terms and Conditions					

20. For any of the financing options in 19b, did the LS discuss the possibility of obtaining a second loan or trust to finance your downpayment? ***[check box]***

☐ **YES** ☐ **NO** ***[If NO, skip to Q. 21]***

20a. If YES, for which loan product(s) was this option discussed? ***[circle number from 19b]***

1 2 3 4 5

20b. What were you told would be the amount to be financed on the second loan or trust?

Amount	**Loan Product** ***[circle number from 19b]***
_____	**1 2 3 4 5**
_____	**1 2 3 4 5**

20c. What was the interest rate quoted on the second loan or trust?

Interest Rate	**Loan Product** ***[circle number from 19b]***
_____	**1 2 3 4 5**
_____	**1 2 3 4 5**

20d. What was the length of loan (in years) for the second loan or trust?

Length of Loan (in years)	Loan Product *[circle number from 19b]*				
_____	1	2	3	4	5
_____	1	2	3	4	5

21. Who was the primary person who provided the information for Question 19b? [*circle letter from Question 8]*

Employee Letter a b c d e

22. Were you told about any other financing options that you did not record on Question 19b? *[check box]*

☐ **YES** ☐ **NO**

22a. If YES, what options were mentioned? _____

_____

23. Did the LS make negative or disparaging remarks about any loan products (either those identified in Question 19b or any others)? *[check box]*

☐ **YES** ☐ **NO**

23a. If YES, which loan products*? [circle number from 19b or "Other"]*

1 2 3 4 5 Other

23b. What remarks were made?_____

_____

_____

_____

24. Did the LS strongly recommend any of the loan products identified in Question 19b? *[check box]*

☐ **YES** ☐ **NO**

24a. If YES, which loan products? *[circle number from 19b]*

1 2 3 4 5

24b. What remarks were made? _____

_____

_____

25. Did the LS ask you to fill out a mortgage loan application? *[check box]*

☐ YES ☐ NO

26. Did the LS offer to assist you in completing a mortgage loan application? *[check box]*

☐ YES ☐ NO

27. Did the LS inform you that a fee would have to accompany an application for financing? *[check box]*

☐ YES ☐ NO

27a. If YES, what were you told the amount of the fee would be? _____

28. Did the LS tell you how long the application process would take? *[check box]*

☐ YES ☐ NO

28a. If YES, how long were you told it would take? _____ *[enter time in number of days]*

29. Did the LS make comments to you about the characteristics or composition of any of the following? *[check all that apply]*

☐ HOUSING DEVELOPMENTS
☐ NEIGHBORHOODS/AREAS
☐ OTHER CUSTOMERS
☐ OTHER EMPLOYEES
☐ NO COMMENTS WERE MADE

29a. For any comments made about items checked, please describe what you were told: ___

_____
_____
_____
_____

30. Did the LS make any negative comments about any of the following? ***[check all that apply]***

- ☐ **HOUSING DEVELOPMENTS**
- ☐ **NEIGHBORHOODS/AREAS**
- ☐ **REAL ESTATE AGENTS/FIRMS**
- ☐ **OTHER LENDERS**
- ☐ **MORTGAGE BROKERS**
- ☐ **OTHER CUSTOMERS**
- ☐ **OTHER EMPLOYEES**
- ☐ **NO COMMENTS WERE MADE**

30a. For any comments made about items checked, please describe what you were told: ___
_____
_____
_____
_____
_____
_____

31. Did the LS refer you to or recommend a particular real estate agent or real estate firm? ***[check box]***

☐ **YES** ☐ **NO**

31a. If YES, which one(s)? _____
_____
_____
_____

32. Please indicate whether you obtained any of the following materials during your visit ***[circle number]:***

Material	Not Obtained	Volunteered	I Requested
1. Business Card	0	1	2
2. Loan Application	0	1	2
3. Brochure(s)	0	1	2
4. Information on Loan Products	0	1	2
5. Pre-qualifying Worksheet	0	1	2
6 . Other Printed or Written Materials *[specify]*			
_____	0	1	2
_____	0	1	2
_____	0	1	2

33. Did the LS make any arrangements with you for future contact? ***[check box]:***

☐ **YES** ☐ **NO**

33a. If YES, what type of arrangements were made? ***[check box]:***

☐ **I WAS ASKED TO CONTACT THE LS**

☐ **THE LS SAID HE/SHE WOULD CONTACT ME**

☐ **OTHER**_____

STATEMENT OF TESTER

I prepared this test report form and attest by my signature below that it is, to the best of my recollection, a true and accurate account of the events that took place during a test in which I participated:

_____ _____ _____

Signature **Date** **Time**

ANNEX C:

TERMS AND CONDITIONS

Annex C: Terms and Conditions

Differences in Terms and Conditions
Black/White Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Higher	% Minority Higher	Significance Test	% White Higher	% Minority Higher	Significance Test
# products w/variable rates	20.4	32.7	0.33	35.7	14.3	0.04**
# products w/PMI required	30.6	46.9	0.26	46.4	19.6	0.02
Avg downpayment percent	34.7	38.8	0.87	33.9	28.6	0.74
Avg points	32.7	30.6	1.00	33.9	16.1	0.09*
Avg closing costs	36.7	36.7	1.00	46.4	21.4	0.03**
Avg interest rate	34.7	40.8	0.74	42.9	26.8	0.20
Avg monthly payment rate	44.9	53.1	0.67	53.6	44.6	0.60

Differences in Terms and Conditions
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles			Chicago		
	% White Higher	% Minority Favored	Significance Test	% White Higher	% Minority Favored	Significance Test
# products w/variable rates	38.5	17.3	0.06*	29.6	9.3	0.03**
# products w/PMI required	34.6	34.6	1.0	44.4	16.7	0.01**
Avg downpayment percent	50.0	26.9	0.08*	31.4	27.8	0.86
Avg points	36.5	23.1	0.28	20.4	11.1	0.33
Avg closing costs	55.8	38.5	0.25	50.0	35.2	0.30
Avg interest rate	46.2	36.5	0.54	31.5	37.0	0.74
Avg monthly payment rate	53.8	44.2	0.58	51.9	48.1	0.89

Differences in Terms and Conditions for Loan Products Discussed

These results reflect a fairly high level of variation in the terms and conditions discussed with prospective borrowers, with some statistically significant differences on the basis of race or ethnicity. For black/white tests, we find no statistically significant patterns of differential treatment in Los Angeles, but in Chicago, whites were more likely to be told about products with variable interest rates, and more likely to be told about products requiring private mortgage insurance. In addition, whites were more likely to be quoted higher points and higher closing costs on average. For Hispanic/Anglo tests in Los Angeles, Anglos were more likely to be told about products with variable interest rates and more likely to be quoted higher average downpayment percentages. Finally, for Hispanic/Anglo tests in Chicago, Anglos were more likely to be told about products with variable rates and products that require private mortgage insurance.

It is not clear whether these differences favor the white Anglo customer or the minority customer. On the one hand, some of the results seem to suggest that white Anglos are being told about more costly loan products. But given some of the earlier results reported here, these differences may reflect a greater diversity of products being offered to white Anglo customers. For example, learning about more products that require private mortgage insurance might reflect adverse treatment (since mortgage insurance is costly and may not be needed by a well-qualified borrower) or it might reflect favorable treatment (since learning about products with private mortgage insurance provides a wider range of options to consider). Likewise, a higher average downpayment percent could reflect less favorable terms, or an effort on the part of the lender to get the tester into a more expensive house or reduce the amount of money to be financed. Thus, we can only conclude from the results of this testing effort that statistically significant patterns of differences in terms and conditions do occur, both in Los Angeles and in Chicago.

ANNEX D:

POOLED AND STRATIFIED RESULTS

Annex D: Pooled and Stratified Results

Annex D-1: Pooled Results

Who Received the Information Requested?
Black/White Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Loan amount provided	6.7	2.7	0.18
House price provided	6.0	5.3	1.00
Specific options discussed	7.0	2.8	0.18
Financial details exchnged	8.6	7.2	0.69
Overall info provided	**9.2**	**6.6**	**0.54**

Who Received the Information Requested?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Loan amount provided	8.2	2.5	0.05**
House price provided	8.2	3.8	0.17
Specific options discussed	8.7	4.7	0.26
Financial details exchnged	8.8	4.4	0.13
Overall info provided	**10.1**	**5.0**	**0.10**

Who Was Quoted A Higher Loan Amount or House Price?
Black/White Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	29.6	21.4	0.26
Maximum house price	30.6	24.5	0.50
Average Amounts	**White**	**Minority**	**Significance Test**
Maximum loan amount	$219,458	$222,302	0.26
Maximum house price	$237,481	$239,874	0.74

Who Was Quoted A Higher Loan Amount or House Price?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	51.0	22.5	0.001**
Maximum house price	48.0	21.6	0.001**
Average Amounts	**White**	**Minority**	**Significance Test**
Maximum loan amount	$232,180	$219,546	0.03**
Maximum house price	$243,111	$233,726	0.01**

Who Learned About More Products?
Black/White Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Number of products	43.8	26.7	0.04**
Average Amounts	**White**	**Minority**	**Significance Test**
Number of products	2.75	2.42	0.05**

Who Learned About More Products?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Number of products	54.2	30.8	0.01**
Average Amounts	**White**	**Minority**	**Significance Test**
Number of products	2.87	2.37	0.01**

Who Received More Coaching?
Black/White Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Positive Coaching	46.7	24.3	0.001**
Average Amounts	**White**	**Minority**	**Significance Test**
Positive Coaching	1.72	1.39	0.01**

Who Received More Coaching?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Positive Coaching	36.5	26.4	0.11
Average Amounts	**White**	**Minority**	**Significance Test**
Positive Coaching	1.43	1.41	1.00

Who Received More Follow-Up?
Black/White Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	8.6	3.3	0.10**
Average Amounts	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.14	0.04	0.10**

Who Received More Follow-Up?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	6.9	15.1	0.03**
Average Amounts	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.18	0.35	0.04**

Who Was Encouraged to Consider FHA?
Black/White Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Higher	% Minority Higher	Significance Test
FHA encouraged	9.0	20.9	0.12
FHA discouraged	10.4	4.5	0.34

Who Was Encouraged to Consider FHA?
Hispanic/Anglo Tests

Treatment Indicators	Los Angeles and Chicago: Pooled		
	% White Higher	% Minority Higher	Significance Test
FHA encouraged	14.9	17.9	0.68
FHA discouraged	1.5	1.5	1.0

Annex D-2: Prime Lenders

Who Received the Information Requested?
Black/White Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Loan amount provided	6.7	2.7	0.18	7.3	1.5	0.04**
House price provided	6.0	5.3	1.00	6.6	4.4	0.61
Specific options discussed	7.0	2.8	0.18	7.7	1.5	0.04**
Financial details exchnged	8.6	7.2	0.69	9.4	5.8	0.29
Overall info provided	**9.2**	**6.6**	**0.54**	**10.1**	**5.0**	**0.13**

Who Received the Information Requested?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Loan amount provided	8.2	2.5	0.05**	6.1	2.7	0.27
House price provided	8.2	3.8	0.17	6.1	4.1	0.61
Specific options discussed	8.7	4.7	0.26	6.5	5.1	0.80
Financial details exchnged	8.8	4.4	0.13	7.4	4.7	0.49
Overall info provided	**10.1**	**5.0**	**0.10**	**7.4**	**5.4**	**0.65**

Who Was Quoted A Higher Loan Amount or House Price?
Black/White Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	29.6	21.4	0.26	28.9	21.1	0.30
Maximum house price	30.6	24.5	0.50	31.5	22.5	0.31
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Maximum loan amount	$219,458	$222,302	0.26	$217,889	$220,569	0.19
Maximum house price	$237,481	$239,874	0.74	$236,266	$235,828	0.56

Who Was Quoted A Higher Loan Amount or House Price?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	51.0	22.5	0.001**	48.5	25.8	0.01**
Maximum house price	48.0	21.6	0.001**	50.0	20.8	0.001**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Maximum loan amount	$232,180	$219,546	0.03**	$231,918	$218,992	0.04**
Maximum house price	$243,111	$233,726	0.01**	$242,874	$232,434	0.01**

Who Learned About More Products?
Black/White Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Number of products	43.8	26.7	0.04*	43.2	27.4	0.07**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Number of products	2.75	2.42	0.05*	2.78	2.52	0.09**

Appendix 2-6: Who Learned About More Products?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Number of products	54.2	30.8	0.01**	54.0	31.0	0.01**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Number of products	2.87	2.37	0.01**	2.87	2.38	0.02**

Who Received More Coaching?
Black/White Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Positive Coaching	46.7	24.3	0.001**	46.8	25.2	0.01**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Positive Coaching	1.72	1.39	0.01**	1.72	1.34	0.03**

Who Received More Coaching?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Positive Coaching	36.5	26.4	0.11	35.1	25.7	0.14
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Positive Coaching	1.43	1.41	1.00	1.40	1.41	1.00

Who Received More Follow-Up?
Black/White Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	8.6	3.3	0.10**	8.6	3.6	0.14
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.14	0.04	0.10**	0.14	0.04	0.14

Who Received More Follow-Up?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	6.9	15.1	0.03**	6.1	15.5	0.01**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.18	0.35	0.04**	0.17	0.35	0.02**

Who Was Encouraged to Consider FHA?
Black/White Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Higher	% Minority Higher	Significance Test	% White Higher	% Minority Higher	Significance Test
FHA encouraged	9.0	20.9	0.12	4.9	23.0	0.01**
FHA discouraged	10.4	4.5	0.34	11.5	4.9	0.34

Who Was Encouraged to Consider FHA?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: All Lenders			Both Sites: Prime Lenders Only		
	% White Higher	% Minority Higher	Significance Test	% White Higher	% Minority Higher	Significance Test
FHA encouraged	14.9	17.9	0.68	15.9	19.0	0.68
FHA discouraged	1.5	1.5	1.0	1.6	1.6	1.00

Annex D -3: Same or Different Loan Officer

Who Received the Information Requested?
Black/White Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Loan amount provided	7.9	1.3	0.13	5.5	4.1	1.00
House price provided	2.7	4.0	1.00	9.5	6.8	0.77
Specific options discussed	6.8	0	0.06	7.2	5.8	1.00
Financial details exchnged	6.6	2.6	0.45	10.7	10.7	1.00
Overall info provided	**7.9**	**5.3**	**0.75**	**10.7**	**8.0**	**0.79**

Who Received the Information Requested?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Loan amount provided	14.6	4.2	1.00	14.6	4.2	0.06**
House price provided	12.5	6.3	0.69	12.5	6.3	0.27
Specific options discussed	15.2	6.5	1.00	15.2	6.5	0.21
Financial details exchnged	10.4	4.2	0.22	10.4	4.2	0.61
Overall info provided	**16.7**	**8.3**	**0.73**	**16.7**	**8.3**	**0.21**

Who Was Quoted A Higher Loan Amount or House Price?
Black/White Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	21.8	9.1	0.14	39.5	37.2	0.86
Maximum house price	28.1	17.5	0.33	34.1	34.1	1.00
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Maximum loan amount	$219,147	$218,839	0.26	$219,869	$226,709	0.76
Maximum house price	$237,866	$233,764	0.29	$236,960	$248,068	0.62

Who Was Quoted A Higher Loan Amount or House Price?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	44.0	24.0	0.09**	51.9	26.9	0.04**
Maximum house price	46.0	18.0	0.01**	50.0	25.0	0.04**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Maximum loan amount	$229,081	$213,796	0.17	$234,949	$225,187	0.13
Maximum house price	$241,333	$229,657	0.07**	$244,728	$237,565	0.09**

Who Learned About More Products?
Black/White Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Number of products	46.7	25.0	0.05**	40.0	28.9	0.38
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Number of products	2.72	2.35	0.07**	2.80	2.51	0.23

Who Learned About More Products?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Number of products	54.9	33.3	0.10**	53.6	28.6	0.04**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Number of products	2.84	2.37	0.14	1.12	1.30	0.05**

Who Received More Coaching?
Black/White Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Positive Coaching	44.7	26.3	0.06**	49.3	22.7	0.01**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Positive Coaching	1.67	1.39	0.11	1.80	1.40	0.10**

Who Received More Coaching?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Positive Coaching	32.9	27.1	0.54	39.3	25.80.21	0.12
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Positive Coaching	1.35	1.5	0.36	1.49	1.33	0.45

Who Received More Follow-Up?
Black/White Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	5.3	2.6	0.69	12.0	4.0	0.15
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.07	0.04	0.69	0.21	0.04	0.15

Who Received More Follow-Up?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	5.7	15.7	0.12	7.9	14.6	0.26
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.19	0.36	0.12	0.17	0.34	0.26

Who Was Encouraged to Consider FHA?
Black/White Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Higher	% Minority Higher	Significance Test	% White Higher	% Minority Higher	Significance Test
FHA encouraged	2.8	19.4	0.07**	16.1	22.6	0.77
FHA discouraged	8.3	8.3	1.00	12.9	0	0.13

Who Was Encouraged to Consider FHA?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with Same Loan Officer			Both Sites: Met with Different Loan Officer		
	% White Higher	% Minority Higher	Significance Test	% White Higher	% Minority Higher	Significance Test
FHA encouraged	12.5	12.5	1.00	17.1	22.9	0.79
FHA discouraged	3.1	3.1	1.00	0	0	-

Annex D-4: White or Minority Loan Officer

Who Received the Information Requested?
Black/White Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Loan amount provided	2.9	2.9	1.00	9.5	0	0.13
House price provided	4.2	5.6	1.00	2.4	2.4	1.00
Specific options discussed	3.1	1.5	1.00	9.8	0	0.13
Financial details exchnged	7.0	4.2	0.73	7.1	7.1	1.00
Overall info provided	**5.6**	**7.0**	**1.00**	**9.5**	**2.4**	**0.38**

Who Received the Information Requested?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Loan amount provided	14.6	4.2	0.69	14.6	4.2	0.69
House price provided	12.5	6.3	1.00	12.5	6.3	0.69
Specific options discussed	15.2	6.5	1.00	15.2	6.5	0.69
Financial details exchnged	10.4	4.2	1.00	10.4	4.2	0.69
Overall info provided	**16.7**	**8.3**	**1.00**	**16.7**	**8.3**	**0.73**

Who Was Quoted A Higher Loan Amount or House Price?
Black/White Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	23.1	21.2	0.84	26.9	23.1	1.00
Maximum house price	30.0	20.0	0.34	31.0	31.0	1.00
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Maximum loan amount	$210,590	$211,484	0.75	$236,837	$242,167	0.83
Maximum house price	$226,045	$225,609	0.42	$260,721	$255,319	1.00

Who Was Quoted A Higher Loan Amount or House Price?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Maximum loan amount	47.4	24.6	0.04**	41.2	23.5	0.55
Maximum house price	52.6	17.5	0.01**	41.2	23.5	0.55
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Maximum loan amount	$215,740	$198,152	0.08**	$265,255	$253,184	0.79
Maximum house price	$225,995	$211,871	0.01**	$272,671	$265,347	0.79

Who Learned About More Products?
Black/White Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Number of products	44.4	22.2	0.04**	44.8	27.6	0.29
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Number of products	2.81	2.48	0.07**	2.76	2.38	0.38

Who Learned About More Products?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Number of products	55.2	29.3	0.03**	42.1	42.1	1.00
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Number of products	2.95	2.34	0.04**	2.79	2.58	1.00

Who Received More Coaching?
Black/White Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Positive Coaching	54.9	22.5	0.001**	45.2	19.0	0.03**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Positive Coaching	1.51	0.90	0.01**	1.21	0.86	0.05**

Who Received More Coaching?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Positive Coaching	40.7	24.7	0.07**	35.3	47.1	0.46
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Positive Coaching	1.15	0.84	0.10**	0.85	1.09	0.70

Who Received More Follow-Up?
Black/White Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	7.0	4.2	0.73	11.9	0	0.06**
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.10	0.04	0.73	0.14	0.02	0.06**

Who Received More Follow-Up?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Favored	% Minority Favored	Significance Test	% White Favored	% Minority Favored	Significance Test
Follow-Up Contact	3.7	19.8	0.01**	5.9	5.9	1.00
Average Amounts	**White**	**Minority**	**Significance Test**	**White**	**Minority**	**Significance Test**
Follow-Up Contact	0.14	0.44	0.01**	0.12	0.09	1.00

Who Was Encouraged to Consider FHA?
Black/White Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Higher	% Minority Higher	Significance Test	% White Higher	% Minority Higher	Significance Test
FHA encouraged	2.9	17.1	0.13	11.8	29.4	0.45
FHA discouraged	14.3	5.7	0.45	11.8	5.9	1.00

Who Was Encouraged to Consider FHA?
Hispanic/Anglo Tests

Treatment Indicators	Both Sites: Met with White Loan Officer			Both Sites: Met with Minority Loan Officer		
	% White Higher	% Minority Higher	Significance Test	% White Higher	% Minority Higher	Significance Test
FHA encouraged	10.3	20.5	0.39	11.1	22.2	1.00
FHA discouraged	2.6	2.6	1.00	0	0	_