A Guide to Home Mortgage Disclosure Act Data

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Abstract

The Home Mortgage Disclosure Act (HMDA) requires most lending institutions to report on home mortgage loan applications, including the application outcome, loan- and applicant-related information, and property location. Annual data collected through HMDA provide a unique set of annually updated files with information at the neighborhood level.

This guide provides an introduction to the HMDA data and describes the HMDA indicators available on DataPlace. It also describes the contents of the original source files from which the DataPlace indicators were derived. Finally, the guide illustrates how DataPlace indicators derived from HMDA data can be used to shed light on such issues as neighborhood investment trends, changes in the racial and economic composition of home buyers, disparities in home loan access, and subprime lending.

About This Report

Sponsored by the Fannie Mae Foundation in partnership with the National Neighborhood Indicators Partnership, this publication is one of a series of companion guidebooks to DataPlace™, a Web site providing neighborhood-level data and learning materials to support well-informed policy and programs in the housing and community development fields. This guidebook edition updates the first edition published in 2005.

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INTRODUCTION

The Home Mortgage Disclosure Act (HMDA) requires most lending institutions to report mortgage loan applications, including the application outcome, loan- and applicant-related information, and property location. Annual data collected through HMDA provide a unique set of annually updated files with information at the neighborhood level. HMDA-based measures can begin to answer a wide array of questions:

- *What is happening to home prices in a particular area?*
- *Has home investment in certain low-income neighborhoods lagged compared with that in other neighborhoods?*
- *How has the racial or economic composition of borrowers changed over time?*
- *Have minorities or women had trouble accessing mortgage credit?*
- *In what kinds of neighborhoods are subprime loans concentrated?*
- *What types of borrowers are most likely to receive subprime loans?*

Armed with hard facts, users of all types can better execute their work: Advocates can launch consumer education campaigns in neighborhoods being targeted by subprime lenders, planners can better tailor housing policy to market conditions, affordable housing developers can identify gentrifying neighborhoods, and activists can confront banks with poor lending records in low-income communities.

This companion guide is the first in a series explaining the data files available on DataPlace™, a Web site providing neighborhood-level data to support well-informed policy decisions and results-driven programs in the housing and community development fields. The series describes the data files and explains how they can be applied to real-world questions. In addition to supporting the use of HMDA indicators in DataPlace, this guide provides a general introduction to the original source files from which the DataPlace indicators were derived. Reviewing the source files will enable interested users to better interpret the DataPlace indicators and pursue more in-depth analysis.

The first section of this guide describes the background of—as well as the general caveats involved in—the use of HMDA data and other related files, and introduces the HMDA indicators available on DataPlace. The second section delves into the contents of the HMDA source files on lenders and loan applications. The final section shows how DataPlace indicators derived from HMDA data can be used to shed light on such issues as neighborhood investment trends, changes in the racial and economic composition of home buyers, disparities in home loan access, and subprime lending.

SECTION I. INTRODUCTION TO HMDA AND ITS DATA

Purpose of HMDA legislation

The Home Mortgage Disclosure Act (HMDA) was enacted by Congress in 1975 and implemented by Federal Reserve Board regulations. These regulations require certain banks and other mortgage lending institutions to report information about mortgage applications (amount, location of property, and type of loan), the applicant (race, sex, and income), and the application resolution (approved, denied, etc.). These files are distributed annually and made available to the public. The HMDA data were intended to assist in:

- Determining whether financial institutions are successfully meeting their communities' housing credit needs
- Targeting community development funds in ways that attract private investment to areas most in need
- Identifying potentially discriminatory lending patterns

By requiring lending information to be publicly released, the HMDA legislation recognized that community groups have a vital role to play in the enforcement of fair lending. Indeed, such groups' due diligence supplements the efforts of the government agencies formally charged with regulating the banks.[1]

Who reports under HMDA?

The Federal Reserve Board generally requires depository lending institutions (banks, credit unions, and savings associations) to file under HMDA if they

1. Hold assets exceeding a minimum level ($36 million at the end of 2007 to report in 2008)
2. Have a home or branch office in one or more metropolitan areas
3. Originate at least one home purchase or refinancing loan on a one- to four-family dwelling in the preceding calendar year
4. Meet any one of the following conditions: is a federally insured or regulated institution; originates a mortgage loan that is insured, guaranteed, or supplemented by a federal agency; or originates a loan intended for sale to Fannie Mae or Freddie Mac

For-profit nondepository institutions (e.g., mortgage companies) must file if

1. The value of their home purchase or refinancing loans exceeds either $25 million or 10 percent or more of their loan originations.
2. They either maintain a home or branch office in one or more metropolitan areas or in a given year execute five or more home purchase or home loan applications, originations, or loan purchases for properties located in metropolitan areas.
3. Hold assets exceeding a minimum level ($10 million at the end of 2007 to report in 2008) or have executed more than 100 home purchase or refinancing loan originations in the preceding calendar year.

The criteria determining which institutions must report under HMDA regulations have been significantly revised over the years. In 1989, for example, the Federal Reserve Board began to require nondepository institutions, including mortgage companies, to file under HMDA. Another regulatory milestone occurred in September 1996, when the Federal Reserve Board nearly

tripled the minimum level of assets for reporting depository institutions to $28 million and adjusted the minimum asset threshold for inflation on an annual basis.

Because of the 1996 regulatory changes, DataPlace's HMDA data series begins with 1997. Researchers conducting trend analysis using earlier HMDA data from other sources should independently assess the effects of any relevant changes on their analysis.

The Federal Financial Institutions Examination Council (FFIEC) is responsible for preparing and releasing HMDA source files. A full history of HMDA coverage requirements and the latest criteria for lenders are available at FFIEC's web site at http://www.ffiec.gov/hmda/ .

HMDA data limitations

Because not all institutions are required to file under HMDA, mortgage lending coverage for any one neighborhood may be incomplete. Coverage is particularly limited for nonmetropolitan and low-homeownership areas. Although HMDA data can provide valuable information for these areas, users should be cautious in drawing conclusions on the basis of HMDA data alone.

HMDA data provide less complete coverage of the mortgage markets in nonmetropolitan and smaller counties for several reasons.[2] First, depository institutions located in nonmetropolitan areas—or nondepository institutions with solely nonmetropolitan markets—are not required to file under HMDA. Second, metropolitan-based institutions are only required to enter property location information for loans originated within the metropolitan areas in which they have a branch. Thus, even if these institutions make a loan in a nonmetropolitan area, they are not required to report any geographic information. Finally, institutions do not have to identify the census tract for properties located in counties with populations of 30,000 or less as of the 2000 Census.

The HMDA data are also less useful in capturing demographic or economic changes in neighborhoods with low homeownership rates. Changes in home purchase loan amounts for one- to four-family structures might suggest changes in an area's rent levels, but only in a very indirect sense. For larger structures, HMDA data until 2004 combined all multifamily housing loans, including those for purchase, refinancing, or improvement. This mix makes the loan amount for the earlier years very hard to interpret because home improvement loans tend to be relatively small, while purchase loans tend to be relatively large. As discussed later, institutions began reporting structure type and loan purpose separately in 2004, allowing for the creation of less ambiguous multifamily indicators. While this clarifies the interpretation of the indicators, the small number of loans in a given year and not knowing the number of units in each building limits the usefulness of HMDA in understanding the multifamily housing market.

Which HMDA data are available on DataPlace?

Although HMDA data have been publicly available for more than 10 years, many advocates and researchers do not have the time or expertise to compile the individual loan-application records into indicators for analysis and action. Without the appropriate database or statistical software, the data files with the individual application records are quite large (e.g., 21.3 million records in

2007) and cumbersome to manipulate. To make the information more accessible, DataPlace contains more than 1,200 indicators summarizing HMDA records at the census tract and larger geographic levels.[3] About 400 of them are offered for HMDA files from 1997 through 2007. Another 800 indicators are provided for the expanded files of 2004 to 2007. The data files will be updated annually (Figure 1). The web site also features such tools as charts, tables, and interactive mapping.

Figure 1A: HMDA Indicators Available on DataPlace for 1997–2007

Number and percent of mortgage applications and originations by loan purpose
Number of mortgage originations by loan purpose per 1,000 housing units
Number of mortgage originations by loan type (conventional or government) and loan purpose

Aggregate dollar amount of mortgage originations by loan purpose
Aggregate dollar amount of mortgage originations by loan purpose per 1,000 housing units
Average/median dollar amount of mortgage originations by loan purpose

Number and percent of owner-occupied home purchase mortgage loans by borrower race
Number and percent of owner-occupied home purchase mortgage loans by borrower income category
Median income of borrower for owner-occupied home purchase loans
Ratio of the median borrower income to the median household income in 2000
Number of loans by occupancy status (owner-occupied versus investor) and structure type
Number of non-owner-occupied loans per 1,000 housing units

Denial rates for conventional home purchase loans by applicant race and income
Denial rates for conventional home purchase loans by applicant gender and income

Number and percent of conventional & government originations from subprime lenders by loan purpose
Number and percent of conventional loans from subprime lenders by loan purpose and borrower race
Number of conventional loans from subprime lenders by loan purpose per 1,000 housing units
Number and percent of conventional loans from subprime lenders by loan purpose and borrower gender

Figure 1B: HMDA Indicators Available on DataPlace for 2004–2007

Number and percent of mortgage applications and originations by loan purpose and structure type
Number of mortgage originations by loan purpose and lien status
Number of loans by conventional or government-sponsored and loan purpose

Aggregate dollar amount of mortgage originations by loan purpose, lien status, and structure type
Average/median dollar amount of mortgage originations by loan purpose, lien status, and structure type

Number and percent of first-lien, owner-occupied home purchase mortgage loans by borrower race
Number and percent of first-lien, owner-occupied home purchase mortgage loans by borrower income category
Median income of borrower for owner-occupied home purchase loans by lien status and structure type

Number and percent of conventional loans from subprime lenders by loan purpose and borrower income

Number and percent of conventional originations with high interest rates by loan purpose and lien status
Number and percent of government originations with high interest rates by loan purpose and lien status
Number and percent of conventional, first-lien, owner-occupied loans with high interest rates by loan purpose, applicant race and income
Number and percent of conventional, first-lien, owner-occupied loans by loan purpose with high interest rates by applicant gender and income
Number of loans reported under HOEPA regulations by loan purpose

How to access HMDA source files

The tract-level HMDA indicators on DataPlace support many types of analyses (see Section III). Some analytical exercises, however, require users to access the individual loan application data in the HMDA source files (e.g., evaluating a particular institution's lending history). Application-level data are available from several sources.[4] Nationally, the Federal Financial Institutions Examination Council (FFIEC) is responsible for making the raw HMDA data available to the public and publishing annual HMDA data for each metropolitan statistical area. HMDA data for the previous calendar year are released each September. The FFIEC Web site (http://www.ffiec.gov/hmda/online_rpts.htm) features each institution's lending reports as well as a series of useful online reports for the United States, metropolitan areas, and census tracts.

For those interested in the entire file, the National Technical Information Service (NTIS) distributes the data from 1990 to 2003 on CD for $400 per year (http://www.ntis.gov/products/bank-hmda.aspx). For 2004 and subsequent years, the loan and lender records are available in CD or DVD format with custom Windows software for $50 per year (http://www.ffiec.gov/hmda/). The software allows users to query by lender, geography, or loan characteristics and to export individual application records into text files. Starting in 2006, the software and the raw data are available to download from the FFIEC web site for metropolitan areas, for each supervising agency, or for the nation.

The FFIEC sends copies of individual bank disclosure statements and aggregate tables to a central data location in each metropolitan area (e.g., the area's public library), which in turn makes the information available to the public. To locate the designated depository in your area, visit the FFIEC Web site (http://www.ffiec.gov/CentralDepository/default.aspx) or call its office at (202) 452-2016.

Banks in metropolitan areas must make their disclosure statements available to the public on request and keep information at their home office as well as in at least one of their metropolitan-area bank branches.

The National Community Reinvestment Coalition (NCRC) (http://www.ncrc.org/) produces custom data analyses, including maps and charts, to help its members and community organizations evaluate their areas' credit supply and credit needs. To inquire about NCRC's HMDA data analysis, contact its Research and Policy Department at (202) 628-8866.

Related Files: Subprime and manufactured home lender list

Subprime loans are designed for applicants with poor credit histories, high loan-to-home value ratios, or other credit risk characteristics that would disqualify them for lower prime-rate loans. Although the subprime lending market has made credit more available to households with low incomes or imperfect credit, the unregulated status of subprime lending makes it potentially—although not necessarily—predatory in nature.

Predatory subprime loans usually exhibit three characteristics: They are targeted to households on the basis of their race, ethnicity, age, gender, or other traits unrelated to creditworthiness; they carry unreasonable and unjustifiable loan terms; and they involve outright fraudulent behavior that maximizes the destructive financial impact of inappropriate marketing strategies and loan provisions on consumers.[5]

Unfortunately, HMDA data from 2003 and earlier do not capture whether an individual loan is subprime. The number of subprime loans, however, can be approximated by calculating the number of loans originated by lenders identified by the U.S. Department of Housing and Urban Development (HUD) as subprime specialists. Because these subprime specialists might also offer traditional prime-market loans, DataPlace indicators based on loans from subprime lenders *include some prime loans* from subprime lenders and *exclude some subprime loans* from institutions not included in HUD's subprime specialist list.

HUD compiled the subprime lenders list using industry trade publications, HMDA data analyses, and lenders' self-identification. Lenders are identified as subprime specialists if they report that such loans account for at least half of their conventional (i.e., not government-backed or insured) business. HUD also uses feedback from lenders, policy analysts, and housing advocacy groups to update the list.

Users can determine if an institution reporting a loan application is a HUD-identified subprime specialist by matching the agency code and lender ID in HUD's list to the corresponding fields in the HMDA record. DataPlace administrators have already performed this matching process, and the Web site includes several summary indicators of subprime lending by borrower race and loan purpose. The HUD subprime specialist lists from 1993 to 2005 are available at http://www.huduser.org/datasets/manu.html. As of December 2008, no list for 2006 had been released.

As explained in Section II, as of January 2004 the FFIEC required reporting institutions to include information about the interest rates for high-cost loans. This change allows the more precise measurement of the subprime lending activities of all reporting institutions, and is described in more detail in the Loan Application Register section below.

Related files: HUD Area Median Family Income

The Department of Housing and Urban Development (HUD) is required by law to set annual income limits that determine applicant eligibility for HUD's assisted housing programs. Income limits are calculated for both metropolitan areas and nonmetropolitan counties in the United States using the fair market rent area definitions set out in HUD's Housing Voucher program. Income limit calculations begin with the development of estimates of median family income using data from the most recently available decennial census. These figures are then updated using data from the Census Bureau's Current Population Survey, the American Community Survey, and the Bureau of Labor Statistics.

In 2003, HUD re-benchmarked the median family income estimates using 2000 Census data, resulting in an unusual number of upward and downward revisions. Users comparing relative income indicators for 2002 and earlier years with those for 2003 and later years should keep this estimation change in mind when analyzing results. Users can view the income limits between 2002 and 2003 for their area of interest to see if the changes appear reasonable based on their knowledge of local trends. DataPlace includes the area median income for states and metropolitan areas, but users can also check HUD's published income limits at http://www.huduser.org/datasets/il.html.

FFIEC's HMDA data files classify each loan into an income category relative to its HUD area median income. (For example, the 2002 low-income threshold for a family was $73,000 in the Washington, D.C., metropolitan area, but only $40,000 in Chattanooga, Tennessee.) DataPlace indicators are available for four income categories: very low (50 percent of less of area median), low (80 percent or less of area median income), middle (80 to 120 percent of area median income), and high (greater than 120 percent of area median income). These relative income

categories are especially helpful when comparing indicators—such as the income distribution of home purchase lending—in metropolitan areas with divergent costs of living.

SECTION II: CONTENTS OF THE HMDA SOURCE FILES

As mentioned above, HMDA indicators on DataPlace have been created by aggregating individual loan applications for each census tract or larger geographic unit. Section III provides more detail on those indicators' construction, but users can benefit from a basic understanding of the original files on which the indicators are based.

Each year, the FFIEC releases two HMDA data files: the Transmittal Sheet (TS) file of lender listings and the Loan Application Register (LAR) file of individual loan applications. The TS file, which in 2007 listed 8,610 financial institutions, contains a minimal number of fields to identify the lender. The LAR file, which contained 21 million loan applications in 2007, includes more detailed information about the loan applicant, the loan request, and the action taken on the loan application. As of January 1, 2004, there were several major changes in reporting requirements which are discussed below.

Transmittal Sheet (TS)

The Transmittal Sheet includes a series of fields identifying the lending institution: the reporting lender's name, the lender's HMDA and tax identification numbers, and the regulatory agency. It also contains the reporting lender's address and telephone number. Finally, it includes the number of loans the lender submitted on the LAR file, a good proxy of the lender's size.

Loan Application Register (LAR)

Two fields link the TS file to the LAR file: an ID for the reporting institution and a code for the government agency supervising the institution. These two fields, along with the loan sequence number, give each loan application a unique record identifier. The LAR also includes the government agency responsible for the supervision of the reporting lender. The Department of Housing and Urban Development regulates the most loans (35 percent of the applications in 2006), followed by the Office of the Comptroller of the Currency (with 25 percent).

The LAR file contains another administrative field called "edit status," which evaluates the record's internal consistency. The edit status field has four possible values: no edit failures, validity failures, quality failures, or validity and quality failures. These flags apply to the entire record rather than to a particular field and are thus difficult to interpret. Records flagged for validity failures contain conditions that should not exist (most often an invalid census tract number). Records flagged for quality errors contain values that conflict with expected standards but are not necessarily incorrect. For example, records containing the following unusual, but not impossible, conditions would be flagged for quality errors: a home purchase loan amount below $10,000, household income below $9,000, or household income exceeding $1,000,000. Given the wide range of home values and incomes across the country, DataPlace files are not

adjusted based on the quality error flags or “reasonableness” tests. Users conducting analysis of individual loans, however, may opt to develop their own criteria to flag or exclude outliers. [6]

The HMDA LAR files describe three characteristics of the applicant and co-applicants: gross annual income, gender, and race. Prior to 2004, race and ethnicity were separately reported, and Hispanic was considered a race category. Beginning in 2004, the reporting process follows the Office of Management and Budget guidance of reporting both race and ethnicity. Applicants can choose one of five races and report multiple race categories. Hispanic ethnicity is recorded as a second field.

While the files generally contain completed income and gender information, the incidence of incomplete race information has risen notably since the mid-1990s. Until January 2003, lenders were only required to request racial information for in-person loan applications. As mailed, phoned-in, or Internet applications became more common, the proportion of applications of all purposes (i.e., purchase, refinance, home improvement, or multifamily, as described more fully below) without race information gradually increased, from 8 percent in 1993 to 28 percent in 2002.[7] Although home purchase applications exhibited a better response rate than loans for other purposes, the records with missing race data still rose from 4 to 15 percent over the same period. In response to this trend, lenders must now request racial information for all applications (as of January 2003), regardless of the application method. In the first year after lenders began requesting race information for *all* applications, the rate of missing race data declined markedly (from 27 to 17 percent for home loan applications of all purposes and from 15 to 12 percent of all home purchase applications). Applicants, however, still have the option of not providing race information.

DataPlace cannot completely solve the problem of missing race data, but it does attempt to minimize the effect on the indicators. For example, when examining the racial distribution of home purchase loans, DataPlace considers only the universe of loans with race data. And for the loan-denial indicators, DataPlace only includes rates for home purchase applications. To allow users to consider the potential impact of missing data on particular indicators, DataPlace also reports the percent of home purchase loans with missing race information for each geographic area.

The second set of HMDA LAR variables contain details about the loan request itself, including the census tract of the property named in each application.[8] Census tracts are locally determined geographic units that typically include between 2,500 and 8,000 persons. Until 2002, lenders coded each application using the census tract boundaries used in the 1990 Census. In 2003, lenders began coding each application using the boundaries of the 2000 Census. Because about half of all census tract boundaries changed over that period, pre-2003 loan data summarized to the census tract level may not be directly comparable to data summarized to census tract level data in 2003 and after. To enable users to make comparisons over time, DataPlace adjusts the earlier data using a population-based weighting system, jointly developed for the Neighborhood Change Database by The Urban Institute and GeoLytics, Inc. The resulting file reports pre-2003 data for 2000 census tract boundaries.[9]

In addition to property location, the record lists the purpose of the loan. Lenders report loans for three possible loan purposes: home purchase, home improvement, and refinancing. Notably, instructions to lenders on identifying a loan as “home improvement” were very ambiguous before 2004. Lender institutions were required to report the loan if any part of proceeds for home improvement *and* they classified the loan internally as one for home improvement. After 2004, FFIEC issued clearer guidance stating that all loans using any part of proceeds for home improvement must be reported, regardless of the lenders classification. Prior to 2004, loan purposes were only reported for one- to four-family dwellings, including manufactured homes and condominiums (even if located in buildings that house more than four families). Multifamily loans were grouped together regardless of purpose. Beginning in 2004, information on loans was expanded so that the property structure type (one- to four-family dwellings, multifamily, or manufactured home) and the loan purpose are reported separately.

The record also indicates whether the applicants occupy, or intend to occupy, the property as their principle dwelling. For reporting purposes, second homes, vacation homes, and rental properties are not considered owner-occupied. This measure can signal increased speculation in low-priced neighborhoods with rising property values, and is also important when using HMDA to learn about neighborhood change since investor characteristics (race, income, and gender) do not change the resident composition of the area.

One of the most important additions to loan information made available for 2004 HMDA data is the interest rate spread. This requirement helps analysts and lenders to address fair lending concerns related to loan pricing and to better understand the subprime market. For loans after January 1, 2004, lenders must report the difference between the annual percentage rate (APR) on the loan and the applicable Treasury yield if the spread is equal to or greater than 3 percentage points for first-lien loans or equal to or greater than 5 percentage points for subordinate-lien loans. The APR is the interest rate that represents the total charge for credit and takes into account the added costs of the loan, such as title and loan origination fees. It assumes the loan is kept for the entire period of the loan (which is rarely true). Also, since the classification is based on a relative measure, a given interest rate may be considered high interest at one point in time and not in another, depending on the fluctuations of the base comparison rate.[10] For earlier data, users must use the share of loans from HUD-designated subprime lenders as a proxy for subprime loans. Analysis from the Federal Reserve and other research shows that the patterns of disparities by race persist even with the new measures.[11]

Regulators instituted two other required fields as of 2004 to reflect the changing mortgage market. Lenders now include whether the loan in question is a first lien, subordinate lien, or unsecured. Almost eight out of ten home purchase loans were first liens in 2006. Lien information may help explain pricing discrepancies because interest rates vary according to lien status. Also, restricting neighborhood change analysis for race, income, and gender to first lien originations avoids double-counting “piggy-back loans”, second loans taken out by homebuyers in order to avoid mortgage insurance on low-down payment loans or to keep the first lien within the conforming loan limit. In addition to lien status, lenders now must report pre-approvals, which have grown in use since the early 1990s. The FFIEC defines a pre-approval as an application for credit when there is a comprehensive analysis of creditworthiness of applicant, a written commitment to lend a specified amount, and a valid time period for the offer.

The LAR file contains three other fields describing the loan: the amount, the type of loan (conventional or guaranteed or insured by a government agency, such as the Federal Housing Administration); and the type of purchasing institution (e.g., a commercial bank or a savings bank) for loans originated and sold in the same year.

The final set of fields included in the LAR files indicates the disposition of the loan application and includes the following categories: approved and issued (originated), approved by the bank and declined by the applicant, denied by the bank, withdrawn by the applicant, or closed for incomplete information. An existing loan can also be purchased by the reporting financial institution. To avoid double counting loans originated and purchased in the same year, all DataPlace indicators exclude loans purchased by the reporting financial institution.[12]

For denied applications, lenders have the option of reporting up to three reasons (out of a potential nine). In 2003, the most common reasons for conventional home purchase application denials were poor credit history and a high debt-to-income ratio.

SECTION III. USING HMDA TO UNDERSTAND COMMUNITY CONDITIONS

This section describes how HMDA-based indicators can help policy-makers, practitioners, and other users (1) assess trends in neighborhood housing investment; (2) measure changes in the racial/economic composition of home buyers; (3) analyze differences in access to home purchase credit by income and race; and (4) examine subprime lending patterns.[13]

Each section begins with an explanation of how the HMDA indicators were constructed, followed by an illustration that applies the indicators in a local context. Ideally, users should combine analysis of the HMDA indicators with local knowledge of the area and other quantitative and qualitative information. The analysis should not be the end goal, but a starting point for community action.

Assessing neighborhood housing investment

Indicators based on HMDA data provide invaluable measures of the strength of the homeownership market and neighborhood-level real estate investment. Although local home sales data from administrative sources provide a more complete picture of the market, they are of uneven quality and are often expensive to obtain and process. HMDA data files, by contrast, provide low-cost data that are comparable across metropolitan areas.[14]

Researchers have used the HMDA files to assess the effects of programs or developments on particular housing markets. For example, in a 2003 study analysts used HMDA data to assess a pilot neighborhood homeownership counseling program launched by NeighborWorks® organizations in four cities. The HMDA data allowed researchers to compare the performance of the neighborhoods' mortgage loan markets to that in the surrounding metropolitan area both before and after the program. The evaluation concluded that all four target areas saw improvements relative to the metro area in the loan value and loan volume during the years of the pilot; the differences then tapered off after the pilots ended. Since the study did not control

for other market forces, it could not claim that the counseling programs caused the changes. It did find, however, that the changes occurred in the expected directions.[15] Another 2003 study used HMDA data to view the economic trajectory of neighborhoods with revitalized public housing complexes.[16] Over the period studied, the mortgage loan rate doubled in the focus areas, improving their position relative to the city and to other high-poverty areas.

Methodology:
For census tracts and larger geographic areas, DataPlace provides the number of loan applications as well as the number and aggregate dollar amount of loan originations by purpose (purchase, home improvement, refinancing, and multifamily). The dollar amounts are provided in nominal dollars. In addition to monitoring total market activity, knowing what share of home purchase loans were to investors can offer additional insight into the nature of the housing demand.

Other DataPlace indicators provide loan counts and dollar amounts standardized by the number of housing units located in a given area. These indicators allow the user to compare credit conditions, such as the rate of lending, across different geographic scales (e.g., the conditions in a census tract relative to the surrounding metropolitan area).

The denominator of these standardized measures consists of all ownership units (both single family and condominium) and rental units in buildings with fewer than five units. Unfortunately, an annual update of housing units at the census-tract level is not available, so the denominator is derived from the 2000 Census, regardless of the year of the loan data. In most areas, the housing stock changes very slowly, so the 2000 Census figures should generally provide reasonable housing unit estimates. However, in areas with an unusual amount of demolition or building activity, the fixed-year denominator may overestimate or underestimate the number of housing units and may thus misrepresent those areas' lending trends.

Sample indicators:

Number of home purchase mortgage originations per 1,000 housing units =
Number of home purchase originations/
(All owner units + rental units in buildings with 1–4 units) * 1,000

Dollar amount of home purchase mortgage originations per 1,000 housing units =
Aggregate dollar amount of home purchase originations/
(All owner units + rental units in buildings with 1–4 units) * 1,000

You may choose from two options to express the change in the rate of loans or dollar amount of lending. One option is simply to subtract the earlier year's rate from the later year's rate. A second method calculates the percentage rate change as follows:

Number of home purchase mortgage originations per 1,000 housing units =
(Number of home purchase mortgage originations per 1,000 housing units in Year 2 –
Number of home purchase mortgage originations per 1,000 housing units in Year 1) /

Number of home purchase mortgage originations per 1,000 housing units in Year 1 *100

The second method more precisely measures the indicator's relative movement, but it can be more complicated to explain to audiences.

Loan amounts are best measured using the median, rather than the average, value, because extremely high or low values do not affect the median. DataPlace calculates median loan amounts for all the standard geographies. Users interested in a cluster of tracts or counties, however, must use the average dollar amount:

Average dollar amount of home purchase mortgage originations =
Aggregate dollar amount of home purchase originations/
Total number of home purchase originations

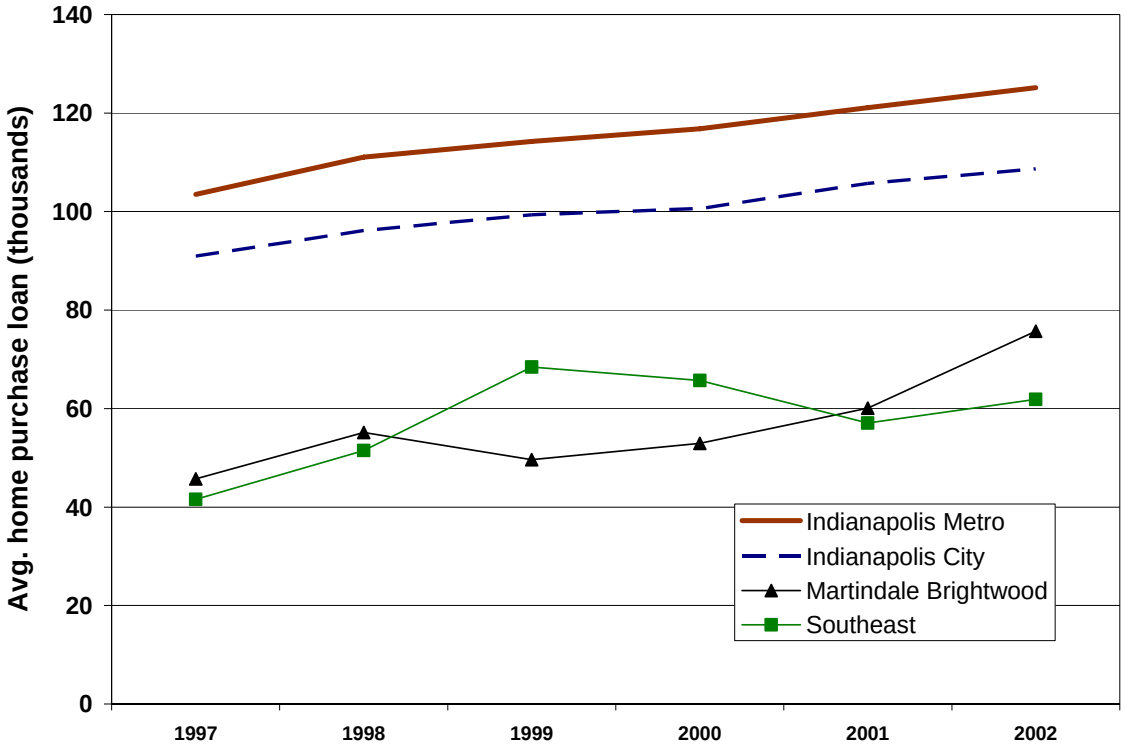
As a reminder, the average and median dollar amounts represent loan values, not sales prices. The relationship between these two amounts depends on the percentage of the down payment, which is likely to be higher in wealthier areas. In recent years, the greater availability of low down-payment loans has driven some of the increase in loan values observed across the nation. Because loan values reflect changes in housing finance practices as well as home market values, it is more meaningful to compare changes in the loan value for a particular area with changes in the surrounding county, metropolitan area, or state.

Analysis example:

In the late 1990s, the Annie E. Casey Foundation selected Indianapolis as a site for Making Connections, a 10-year comprehensive community-based initiative focused on specific neighborhoods in 10 cities across the country. Although not a direct policy target, the homeownership market affects the Annie E. Casey Foundation's efforts to improve conditions for neighborhood residents. A healthy homeownership market can attract economic investment and increase homeowners' equity. But too much demand can price out current renters who aspire to become homeowners and lead to resident displacement if rents increase with the home prices. The Annie E. Casey Foundation and its local partners must therefore understand the state of the homeownership market to craft appropriate programs to help residents improve their situations and set reasonable goals.

In recent years, the Indianapolis metropolitan area has experienced steady increases in average home purchase loan values, which rose 21 percent from 1997 to 2002 (to $125,000). The average home loan values in the central city—$109,000 in 2002—have remained consistently lower than those in the metropolitan area (Figure 2). The city's increase of 19 percent from 1997 to 2002, however, reasonably tracked changes in the surrounding area.

Figure 2: Average Home Purchase Loan Values, Indianapolis Metropolitan Area



In Indianapolis, Making Connections focuses on two lower-income neighborhoods — Martindale-Brightwood and Southeast. Both areas' average family income was $36,000 in 2000, compared with $61,000 for the city. More than half the households in the two neighborhoods own their homes—a low percentage compared with the metropolitan average, but a fairly strong one relative to inner-city neighborhoods nationally. The neighborhoods contain less expensive housing than the city as a whole, as reflected in lower average home purchase loan values, and these values exhibited a more volatile path from 1997 to 2002. In 1997, average home purchase loan values in Southeast and Martindale-Brightwood were $42,000 and $46,000, respectively, about half the city's average of $91,000. Home loan values in the Southeast community rose quickly until 1999 and then dipped and leveled off. The net result was that Southeast's average loan value rose from 46 percent of the city average in 1997 to 57 percent in 2002. In contrast, Martindale-Brightwood's loan value did not improve until after 1999, but it then surpassed the Southeast neighborhood's, to reach an average of $76,000 in 2002. The average loan value in Martindale-Brightwood ended the period at 70 percent of the city average, up from 50 percent in 1997.

In both neighborhoods, standardized lending volumes were far below the city average. Home purchase loans per 1,000 housing units for Martindale-Brightwood were 42 percent of the city value in 2002. Southeast had somewhat higher lending activity, with its normalized volume at 56 percent of the city rate. As the map in Figure 3 shows, lending volume in the northwest census tract of the Southeast neighborhood (which falls in the Central Business District) far exceeded the loan rate of all the other neighborhood tracts. Only a couple of the neighborhood tracts

actually fall in the lowest lending volume category. Martindale-Brightwood shows the opposite pattern: Only one stronger tract is surrounded by tracts with weaker markets. Lending volume and loan values generally—though not always—track each other. The one stronger tract, as measured by volume in the Martindale-Brightwood neighborhood, had an average loan value of $70,000. By contrast, the southernmost tract, which had a lower loan rate, had an average loan value of $104,000. Reviewing a range of indicators yields a more complete picture of lending market dynamics.

Gentrification does not appear to be an urgent concern, since the 2002 average loan values in the neighborhoods remained affordable to the average family. But in Martindale-Brightwood, purchase loan values should be watched carefully to see if the upward swing continues. In Southeast, despite higher lending volume, stagnant loan values in recent years suggest that two top concerns are (1) protecting the equity of current owners and (2) ensuring that homes in the area are sound investments for new home buyers.

Figure 3: Home Purchase Loan Volumes in Indianapolis

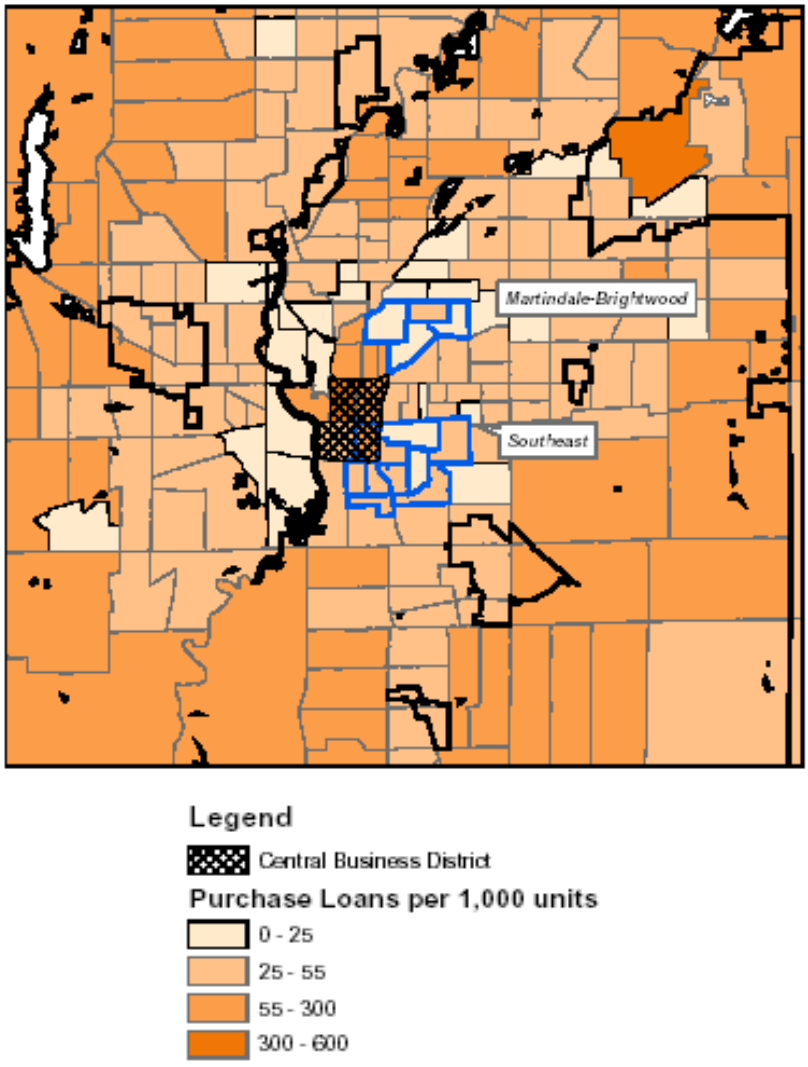


Figure 3 shows that both neighborhoods are adjacent to areas with relatively strong home purchase markets. For Martindale-Brightwood, this proximity emphasizes the need for vigilance in monitoring the recent upswing in home loan values and possibly taking steps to prevent displacement or other housing hardships for existing residents. In Southeast, planners and advocates could examine ways to build off nearby demand to strengthen the neighborhood's homeownership market, possibly by targeting the neighborhood for down-payment assistance or streetscape and other physical improvement programs.

Measuring change in the racial/economic composition of home buyers

As we get further removed from the 2000 Census, planners, researchers, and community activists need information about neighborhood changes after April 2000. Unlike most other annual national files that give data on larger areas such as counties or states, HMDA files provide regularly updated data on the income and race of home buyers at the neighborhood-level. The HMDA data do not capture all home purchases for two reasons: not all lenders report under the Act, and not all home purchases involve loans from financial institutions. In metropolitan markets, however, HMDA indicators provide a good overview of home buyers in a given area.

The practice of using HMDA indicators to examine racial and income patterns among home buyers is not widespread, but two studies demonstrate how this data source can enhance our understanding of neighborhood change. Researchers from Chicago used HMDA data first to identify neighborhoods with economically or racially diverse home purchase borrowers, and then to test whether that diversity continued through the 1990s.[17] While the number of majority white tracts (more than 90 percent white) decreased over the 1990s, the results show that four out of five white purchasers still bought homes in only modestly diverse tracts (25 percent nonwhite). Although the numbers of low and moderate-income buyers rose overall, so did the number of tracts with highly income-restrictive borrowing. Some neighborhoods did maintain a racially or economically diverse set of borrowers, but few tracts maintained both a stable racial and income mix.

Another research brief from Harvard University examined the patterns and trends of low-income homeownership in nine metropolitan areas.[18] The authors combined HMDA data with census data to examine the types of neighborhoods open to low-income borrowers. Six out of 10 low-income borrowers purchased homes in middle-income neighborhoods, showing some promise of a greater income mix. However, these purchases did not result in decreases in racial segregation for low-income minorities. The authors also analyzed the spatial patterns of borrowers, finding that, although metropolitan areas differed somewhat, lower-income households were more likely than higher-income borrowers to purchase homes closer to the central business district.

Methodology:

To measure borrowers' racial characteristics, DataPlace summarizes HMDA data for census tracts and larger geographic areas to calculate the share of home purchase originations in a given year for each race category. In order to study trends for years before 2004, analysts must present the indicators that include all loans, regardless of lien status. As mentioned earlier, DataPlace provides improved indicators for later years that tabulate only first liens and avoid double-counting purchases that include a second-lien.

Sample Indicator:

Share of home purchase loans to whites =
100 X Number of owner-occupied home purchase loans to whites
Number of owner-occupied home purchase loans with race determined

This indicator includes only owner-occupied loans to avoid counting investors as neighborhood residents. In addition, the denominator of the indicator excludes loans with missing or non-applicable race data.[19] Users should check the separate DataPlace indicator showing the percentage of loans with missing race data to determine the extent of missing race information for the area of interest. Unreported race data is less of a concern with home purchase originations, which had only 11 percent missing race data in 2002. Users, however, should be particularly cautious in examining trends because, as previously noted, the share of loan applications with missing race information increased significantly from 1993 to 2002.

The change in the income of home purchase borrowers is measured in a similar way. By comparing the income of the borrower in relation to the HUD area median family income (see Section I), DataPlace groups the loans into four income categories: very low (less than 50 percent of area median income); low (50 to 80 percent of area median income), middle (80 to 120 percent of median), and high (greater than 120 percent of median). Depending on the policy issue being examined, analysts may prefer to return to the loan-level source data to create categories based on absolute values, such as those households qualifying for a city's down-payment assistance program.

Sample indicator:

Share of home purchase loans to low-income households =
100 X Number of owner-occupied home purchase loans to low-income households
Number of owner-occupied home purchase loans with income determined

DataPlace also provides the median income of home purchase borrowers. A median income of $75,000 means that half the borrowers earned more than $75,000, and half earned less. When available, medians are a better measure to use than averages, as extreme values tend to skew averages. Users may examine the median income across census tracts at a point in time or for a given tract over several years.

For example, the percentage change in median borrower income between 1997 and 2003 can be calculated as:

$$100 \times \frac{\text{(Median income of borrowers in 2003 – median income of borrowers in 1997)}}{\text{Median income of borrowers in 1997.}}$$

All of the indicators described above can be compared with decennial census indicators on the race and income levels of all homeowners or all households residing in the area of interest. DataPlace includes two such comparison measures for median income. One presents the ratio of median borrower income to median household income in 2000. A value greater than 1.0 reveals that the new homeowners are wealthier than the existing residents. However, homeowners will generally have higher incomes than the total population that includes renters. The second calculation controls for this by dividing the median borrower income to the median owner household income in 2000

Due to the HMDA data limitations described earlier, the indicators are most reliable in metropolitan neighborhoods with substantial shares of homeowners. If a neighborhood is 90 percent renter-occupied, calculating the racial change among home buyers may result in a distorted picture. Also, if a neighborhood has very few total home purchase loans reported under HMDA, the small denominator may yield misleading percentages; for example, if a neighborhood has just four loans, the fact that 50 percent of the borrowers are Hispanic will not mean much. Users should check the total number of loans alongside the percentages to judge the meaningfulness of the measure.

Analysis Example:

Housing in the Nation's Capital is an annual report on the housing market in the District of Columbia and its surrounding areas. [20] Given the District's real estate resurgence in recent years, many observers believe that more affluent white households are moving to the District. *Housing in the Nation's Capital* tested the validity of this perception by examining the share of loans to minority and low-income buyers in the District and its neighborhoods.

Figure 4: Changes in Home Purchase Borrower Characteristics in the Washington Region, District of Columbia, and Selected Neighborhoods, 1997–2001

	Change in median borrower income (percent)	Change in percent of loans to	
		Minority borrowers	Low-income borrowers
Washington Metropolitan Area	18	5	3
District of Columbia	26	-1	-1
Logan Circle Neighborhood Cluster	44	-11	-13
North Cleveland Park Neighborhood Cluster	13	2	-4
Deanwood Neighborhood Cluster	3	-1	1

Based on Figure 4, the share of minority borrowers in the city fell only slightly between 1997 and 2001. In contrast, the share of minority borrowers in the Washington region increased by 5 percentage points during this period.

While the city-level statistics were apparently counter to people's impressions of a sharply declining share of minority borrowers, the neighborhood-level data tell a different story.[21] Data for three selected neighborhoods show that the racial composition of new homeowners, while stable in some clusters, has changed substantially in others (Figure 4). White areas in the northwest (e.g., North Cleveland Park) and primarily African-American areas in the far southeast (e.g., Deanwood) and northeast areas tended to show stable racial characteristics for home purchase borrowers. At the same time, other areas of the city experienced rapid racial change. Some areas, such as the Logan Circle neighborhood, showed dramatic reductions in the proportion of minority home buyers in the fairly short period from 1997 to 2001.

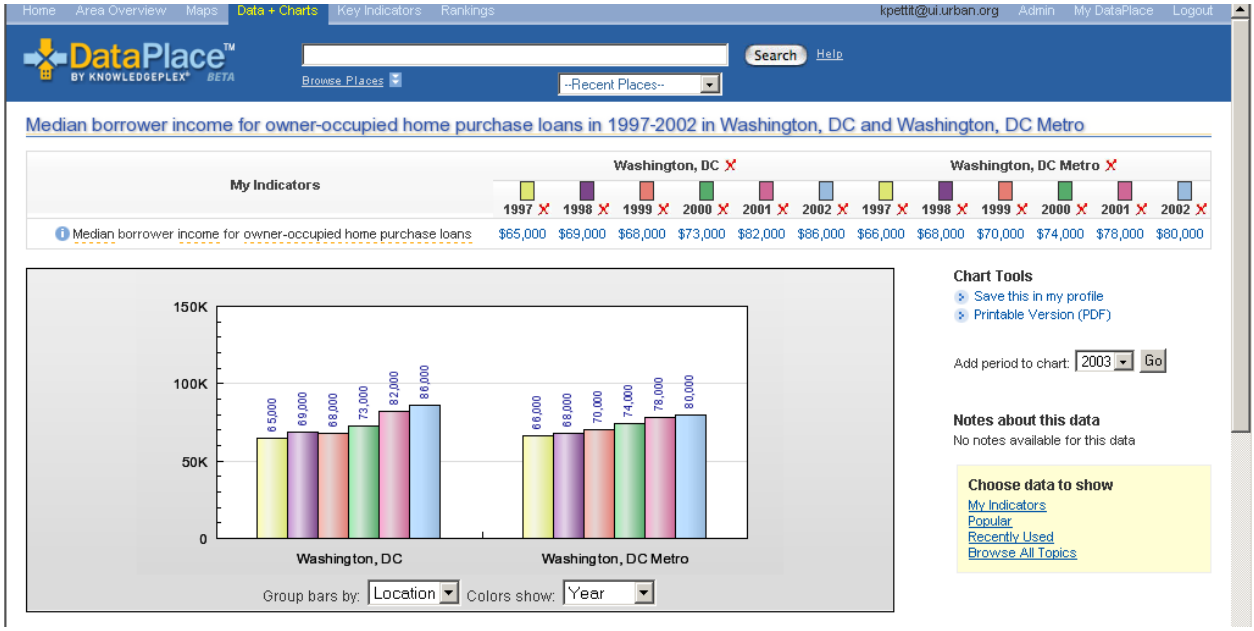
As noted previously, one limitation of HMDA data is that race information is missing for a significant proportion of loan records. Furthermore, the proportion of missing information has changed over time, potentially affecting historical comparisons. Therefore, it’s important to check the DataPlace indicator on the percentage of loans with missing race data when analyzing borrower characteristics.

In the above analysis of the Washington metropolitan area, race data limitations are potentially important, particularly in the District of Columbia and some of its neighborhoods. Between 1997 and 2001, the proportion of the District’s owner-occupied home purchase loans with missing race data increased from 6 to 20 percent. Race reporting varied substantially in different District neighborhoods. In Deanwood, for example, loans with missing race information from 1997 to 2001 ranged from only 4 to 7 percent. But in North Cleveland Park, the proportion of purchase loan applications without race data rose from 8 percent in 1997 to 21 percent in 2001.

These data limitations introduce some uncertainty into the racial trends described above. Fortunately, HMDA files provide more complete and consistent information on other important borrower characteristics, notably income. In both the District of Columbia and the Washington metropolitan area, the proportion of home purchase loans with missing income information remained below 3 percent between 1997 and 2001.

The median income of District home purchase borrowers grew by 26 percent from 1997 to 2001, compared with the region’s increase of 18 percent. By 2001, the median income of home purchase borrowers in the District was higher than that for the region as a whole (Figure 5). When looking at individual neighborhoods, we once again observe widely divergent income trends, from an increase of almost 50 percent in Logan Circle to more modest changes in both wealthier (e.g., North Cleveland Park) and poorer (e.g., Deanwood) areas (Figure 4).

Figure 5. Change in Median Borrower Income in the Washington Region and the District of Columbia, 1997-2001



The analysis in *Housing in the Nation's Capital* gave planners and housing advocates a more nuanced view of recent changes in the District; the results highlighted stable housing areas as well as areas with rapidly changing housing markets. This type of analysis, when combined with a local understanding of neighborhood dynamics, can help users design targeted affordable housing preservation efforts. For example, these efforts might include the strategic use of city-owned vacant properties, down-payment assistance for low-income households, or special tax credits to assist existing homeowners faced with rising property taxes. HMDA-based indicators can also pinpoint neighborhoods that may be able to absorb additional demand for housing without displacing existing residents.

Analyzing differences in access to home purchase credit by income and race

For most households, buying a home is the first step toward wealth building. Taking this first step, however, generally requires access to mortgage credit. Notably, low-income and minority households often face barriers to getting a home purchase loan. Indeed, HMDA data reveal that these groups experience higher application denial rates than white borrowers. In some cases, credit is denied for legitimate reasons (e.g., inadequate means for a down payment or a weak credit record). Unfortunately, HMDA data do not include information about all the factors used in the loan review process, such as credit histories or assets; thus, they cannot conclusively demonstrate discrimination. However, paired-testing research has shown that discrimination against minority applicants persists even when controlling for creditworthiness factors.[22] Whatever the reasons behind denial rate disparities, the HMDA data reflect the reality that fewer low-income and minority households than white households are able to purchase a home, and that homeownership and wealth gaps in the United States persist. By monitoring HMDA denial

rates across time and areas, decision-makers and advocates can work to address the root causes behind racial differences in access to mortgage credit and homeownership.

In the past few years, the literature on mortgage lending has noted the phenomenon of what seems to be race-based denials. HMDA indicators cannot directly measure the problem because of the frequency of missing race observations and the lack of important information related to denial probability (e.g., employment history and credit score). Yet the discrepancy between white and minority denials is remarkable. According to Schwartz (2001), in 1998 higher-income black households (200 percent of median or above) were twice as likely as white households in the same income bracket to be denied a home purchase mortgage (although the author qualifies his findings by noting that whites may be offering larger down payments). However, he also posits that because of the concentration of applications without racial information in predominantly minority tracts during the period, the study probably understates the HMDA-based denial rate for black mortgage applicants.

More complex regression analysis has led to interesting conclusions about the relationship between racial differences in denial rates and location of the prospective property. For example, in a study of Atlanta, a city with a large black middle-class population, Holloway and Wyly (2001) found that blacks applying for loans in higher-income, low-minority tracts were more likely than similar white applicants to be denied loans. In low- to moderate-income tracts that are predominantly minority, they found the reverse: whites were more likely than blacks to be denied loans. The researchers attribute these findings in part to spatially targeted homeownership programs and policies that tend to steer minorities toward—and whites away from—historically minority-dominated tracts.

Methodology:

To measure the ability of different racial and income groups to obtain home purchase loans, DataPlace provides loan denial rates by race, income category, and race-income combinations for census tracts and larger geographic areas. Looking at denial rates by race in the same income category has the advantage of partially controlling for applicant income differences that might affect lending decisions. Some advocacy groups compare the denial rates for low-income whites with those for high-income minority groups to show that differences in loan access persist for higher-income minorities. One weakness of this indicator is that it does not measure discouraged borrowers that may begin, but never complete their loan applications.

Sample indicator:
Denial rate for conventional home purchase loans to very low-income Hispanics =

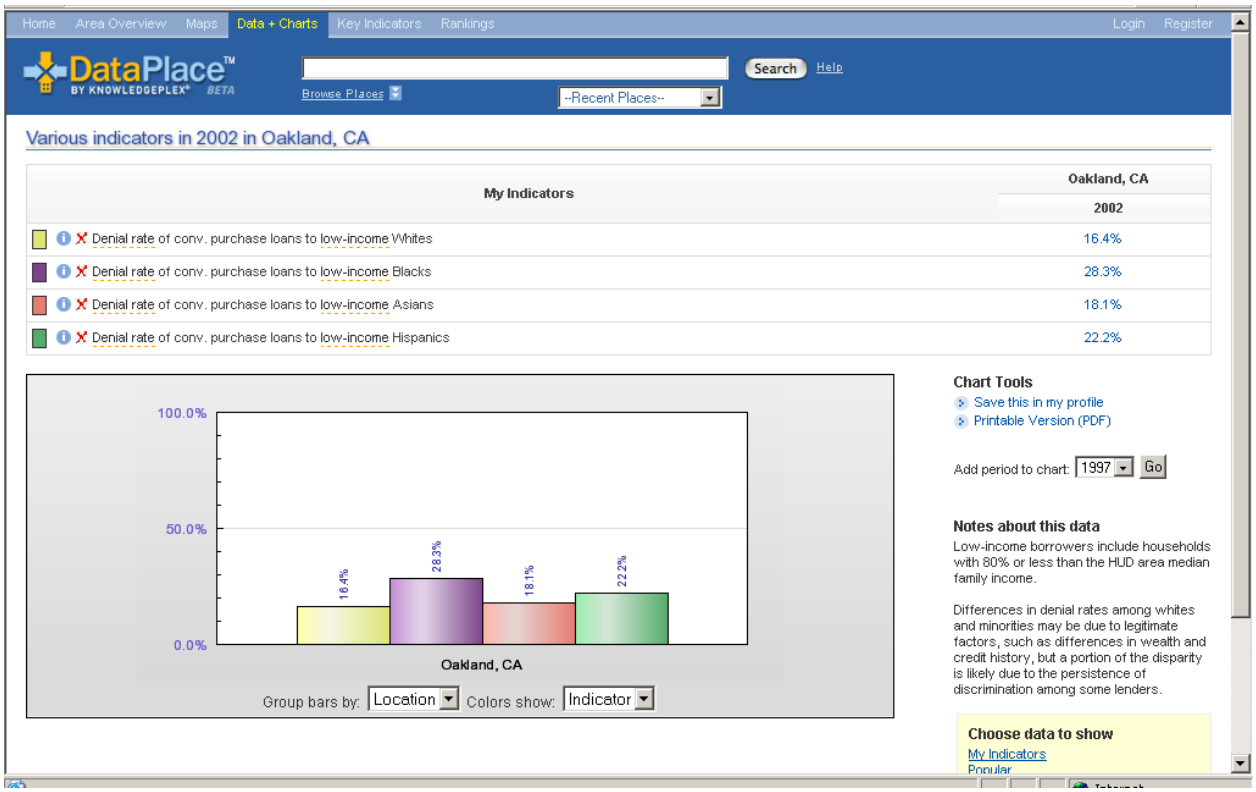
$$100 \times \frac{\text{Number of denials for conventional loans to very low-income Hispanics}}{\text{Number of applications for conventional loans from very low-income Hispanics}}$$

According to DataPlace's income categories, very low-income loan applicants earn 50 percent or less of the HUD area median family income. Denial rates are also provided for low-income (50 to 80 percent of median), middle-income (80 to120 percent of median) and high-income (more than 120 percent of median) borrowers.

Analysis example:

The Oakland, California, area — one of the most racially diverse areas in the country—provides a good opportunity to examine denial rates by race.[23]

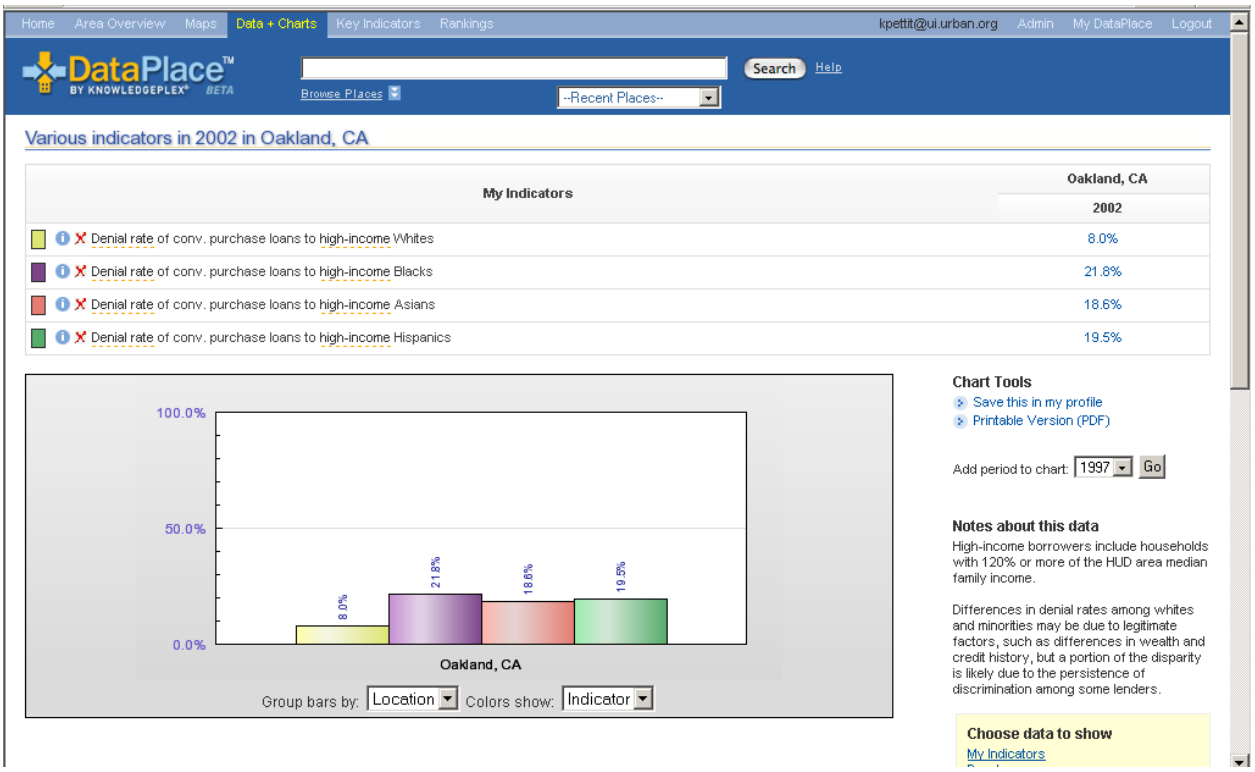
Figure 6: Home Purchase Loan Denial Rates to Low-Income Applicants by Race in Oakland, California: 2002



More than 28 percent of low-income black applicants were denied a home purchase loan in 2002, 1.7 times the rate for whites in the same income category. This racial disparity exists to a lesser extent among Hispanics and their white counterparts, and it almost disappears for Asian applicants and their white counterparts (Figure 6).

Denial rates are expected to be higher for low-income families—who are likely to have less savings and weaker credit histories—than for higher-income families. Do we see a similar gap among races for high-income applicants?

Figure 7: Home Purchase Loan Denial Rates to High-Income Applicants by Race in Oakland, California, 2002

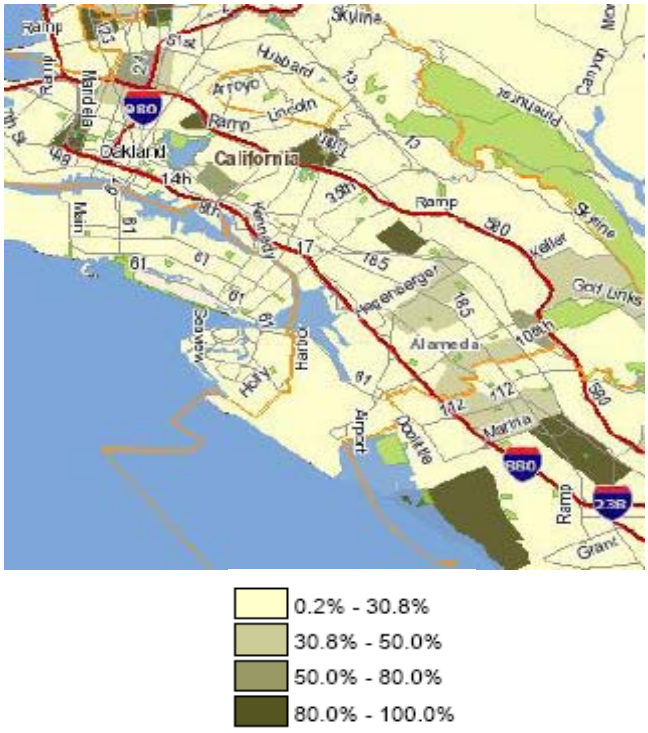


As we shift from the universe of low-income to high-income applicants, the denial rates improve considerably for whites, but show less progress for minority households. As a result, the denial rate for high-income black applicants is almost three times that experienced by high-income white applicants (Figure 7). High-income Hispanics and Asians are less likely to be denied a loan than then blacks of similar income, but the rates are still more than twice that for white applicants. On the whole, denial rate disparities between high-income white and minority applicants are *worse* than the racial gaps between low-income applicants.

For users interested in addressing denial rate gaps and improving minority homeownership rates, a next step could involve mapping denial rates at the neighborhood level. In Figure 8, the darker areas indicate census tracts with denial rates that are higher for low-income black and Hispanic applicants than for white applicants. Note that the mapped locations are areas where applicants applied to buy a home, not necessarily areas where they lived when they applied for the loan. Users would need to rely on neighborhood groups or real estate agents to determine whether applicants generally aspire to buy homes near where they currently live or whether residents tend to move from certain “feeder” neighborhoods to the highlighted neighborhoods. Such neighborhoods could be targeted by a variety of consumer outreach and education efforts. Such efforts might include mailed brochures on the importance of credit scores and ways to improve them or neighborhood-based workshops for first-time homeowners on such issues as personal finance, the basics of the home-buying and mortgage application processes, and fair lending laws.

Figure 8: Denial Rates for Conventional Home Purchase Loans in Oakland, California: 2002

Low-income black applicants



Low-income Hispanic applicants

Nonprofits seeking to improve minority access to mortgage credit could also acquire the loan-level data from the FFIEC and examine which banks are lending (or receiving loan applications) in areas with high loan denial rates. These lenders might provide some insight into the observed lending patterns and be persuaded to co-sponsor home-buyer outreach and education efforts.

Examining Subprime Lending Patterns

Subprime lending is a relatively new phenomenon in the housing finance arena, but the recent collapse of the financial markets has vaulted the topic into the daily headlines. Subprime lending has been an important source of credit for low-income and minority communities, which have traditionally been ignored by mainstream lenders owing to residents' relatively poor credit histories and other real or perceived credit risk factors. But it can also be exploitative, imposing unnecessary costs, stripping household wealth, and threatening homeownership.

One urgent question associated with subprime lending is its racial dimension. Evidence from Los Angeles County suggests that race can supersede income in determining whether an applicant will receive a subprime loan; in other words, minorities who could qualify for a prime-rate loan based on income are given subprime rates on the basis of race alone.[24]

Of particular interest are the discrepancies between minority and white experiences of subprime refinance lending. The Philadelphia-based Reinvestment Fund found that predatory lending results in frequent refinancing or "flipping."[25] Such flipping occurs because the original subprime rates charged are impossible for the borrower to meet; as a result, he or she must continue to refinance the loans, paying a refinancing fee each time. This refinancing fee makes the predatory lending market profitable.

HMDA data, in conjunction with HUD's subprime lender list, offer annual, neighborhood-level data that can be used to study patterns and trends in subprime lending. As noted previously, not all loans from a HUD-identified subprime lender are in fact subprime loans, and HMDA data cannot conclusively identify predatory practices. However, the HMDA subprime lending list is the best national data source for studying subprime lending over time.

The methodology and examples provided below focus on the use of HMDA data to examine racial differences in subprime refinance lending. The subprime share of refinancing loans, has closely tracked interest rates in the last years, increasing in years with higher interest rates.[26] Even in a time of lower subprime lending rates, HMDA data allow users to analyze relative levels across different races and different types of neighborhoods. Although changes in interest rates are the primary driver behind the share of subprime lending, lenders' marketing efforts and applicants' creditworthiness influence the levels present in any particular area. The level of financial literacy could also be a factor; even if borrowers qualify for lower-cost prime-rate loans, those with less financial education might be more likely to accept higher-cost subprime loans.

Methodology:

DataPlace provides indicators that can be used to measure the prevalence of subprime refinance lending among various racial groups, as illustrated by the following indicator for black borrowers:

Percent of conventional refinancing mortgage originations to black borrowers from subprime lenders=

$$100 * \frac{\text{Number of conventional refinancing mortgage originations by subprime lenders to blacks}}{\text{Number of conventional refinancing mortgage originations to black borrowers}}$$

Similar indicators are available for home purchase loans and for other racial and ethnic groups. When examining subprime lending in the refinance market, users should check the percentage of loans with missing race data—a much larger problem for refinancing loans than for purchase loans. Subprime lender indicators of borrowers' characteristics are restricted to conventional loans.

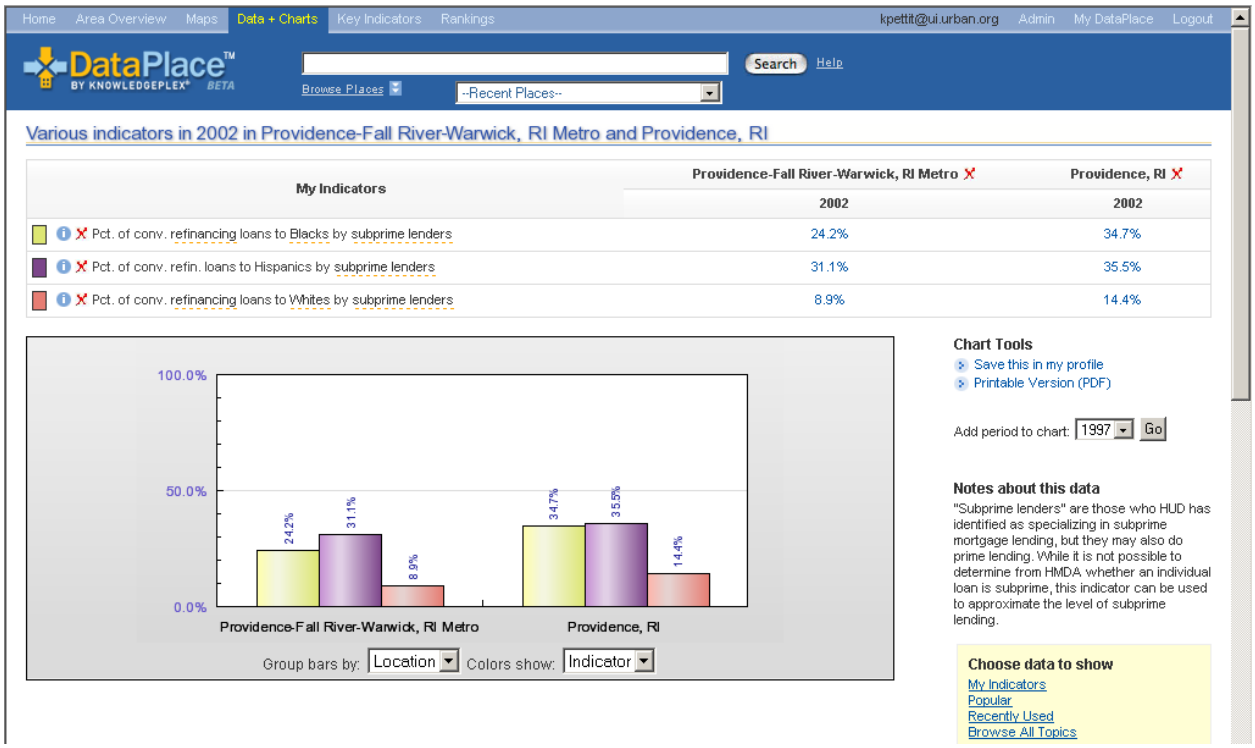
DataPlace also includes measures of subprime and high cost lending divided by the *total* number of housing units to shed light on the impact of these loans on the area's overall housing stock. This indicator avoids highlighting areas that have a high percentage of subprime lending, but only a small number of loans.

As mentioned earlier, HMDA regulations beginning in 2004 require lenders to report the interest rate spread on high-cost loans. This data identifies loans that carry a subprime rate, rather than relying on the type of lender as a proxy. DataPlace offers this improved indicator by borrower race-income combinations to highlight concentrations of subprime lending to higher-income borrowers who might have been eligible for prime loans. These measures describing the borrowers are restricted to loans that are first-lien, conventional, and owner-occupied.

Example:

According to the Mortgage Bankers Association, Rhode Island had the largest share of subprime mortgage loans (14 percent) in 2003.[27] In the Providence metropolitan area, nonwhite borrowers are roughly three times as likely as white borrowers to receive subprime refinance loans (Figure 9).[28] The city, where a higher proportion of low-income households reside, has more subprime lending activity than the metro as a whole. The subprime and prime lending patterns by race, however, are similar in both areas.

Figure 9: Refinancing Loans from Subprime Lenders by Borrower Race in Providence, Rhode Island: 2002



African-Americans and Hispanics generally earn less and have weaker credit scores than whites, so variations in wealth and credit ratings could explain the lending differences. Alternatively, subprime lenders could be targeting minority areas for predatory lending activity.

One way to explore these factors is to look at subprime lending across geographic areas with different income levels. A review of selected Providence neighborhoods reveals that blacks and Hispanics are generally more likely than whites to receive subprime loans in areas of varying income levels (Figure 10).

Figure 10: Subprime Lending Activity by Race and Neighborhood in Providence, Rhode Island: 2002

	Percent of refinancing loans from subprime lenders by race			Percent of population below 200% of poverty
	Black	Hispanic	White	
Selected Neighborhoods				
Mt. Pleasant	31	32	17	35
Silver Lake	39	34	36	51
Wanskuck	47	58	26	54
Elmwood	49	40	34	62
West End	35	28	24	68
Upper South Providence	43	42	46	71

However, in some areas, such as Upper South Providence and Silver Lake, much smaller differences are observable across racial groups. Interestingly, the areas with the most subprime lender activity for blacks (Elmwood) and Hispanics (Wanskuck) are not the poorest neighborhoods. Given the striking subprime lending differences observed even in less-poor areas, it is reasonable to suspect that race may be playing some role in the lending process.

The neighborhood data show that racial differences in subprime lending are not restricted to Providence's poorest neighborhoods; however, these data alone cannot establish racial bias in subprime lending. To further investigate possible race differences, researchers in Providence could do a more detailed study of the HMDA indicators to compare the incomes of minority borrowers receiving subprime loans with those of white subprime borrowers.[29] If minorities were receiving subprime loans at higher rates than same-income white borrowers, then racial bias would be a more likely factor. Linking the subprime lending data to local foreclosure data would also be a valuable exercise. If subprime lending (particularly refinance lending) and high foreclosure rates in certain neighborhoods are correlated, subprime lending data from DataPlace could be used to locate and focus attention on areas at risk of high foreclosure rates.

As with the loan denial rates, maps showing rates of subprime lending can highlight areas with borrowers particularly at risk of foreclosure. As of December 2008, 12.6 percent of subprime loans were in the foreclosure process, compared to 1.6 percent of prime loans.[30] Subprime indicators from the peak of the housing market (2004 to 2006) will be more useful than the more recent 2007 data, when the subprime market had collapsed. Organizations such as the Faith Community Coalition for Homeownership or the Consumer Credit Counseling Services of Southern New England (CCCS) already provide general credit and in-depth pre- and post-purchase homeownership counseling; these organizations can analyze HMDA data and use their knowledge of subprime lenders to direct their services to areas with a high concentration of subprime lending.[31] Many cities have launched public awareness campaigns using bus or newspaper ads to educate people about predatory lending. Such ads could be strategically placed in locations with high subprime lending activity. In addition to neighborhood-level action, HMDA research could support broader predatory lending legislation or negotiations with

individual lending institutions. National organizations such as NeighborWorks (http://www.nw.org), ACORN (http://www.acorn.org), the Center for Responsible Lending (http://www.responsiblelending.org/), and the National Community Reinvestment Coalition (http://www.ncrc.org) have developed a wealth of resources to help activists carry out such local strategies.

CONCLUSION

DataPlace allows more people than ever to access the rich array of information offered by HMDA data. The site profiles offer a quick overview of mortgage lending characteristics, and the mapping and charting tools allow users to discover spatial patterns and compare indicators across time periods and geographic areas. But users need more than just access to HMDA data to understand and apply the information. This guide is designed to help DataPlace users understand both the value and limitations of HMDA-based indicators. With streamlined data files, Web tools, and the right learning materials, data originally collected for compliance purposes can help policy-makers, advocates, and researchers understand and address changing neighborhood conditions.

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1. See Fishbein (1992) for a narrative history of the HMDA legislation and regulations with regard to community advocates.
2. See Scheessele (1998).
3. Mortgage lenders do not report the city of a loan. The city was assigned based on a tract-to-census place crosswalk, and then the tract counts were summed to produce the city-level indicators contained in DataPlace. Cities smaller than a census tract are not included. In cases where census tracts cross city boundaries, the tract was assigned to the location in which the majority of its population fell.
4. See NCRC (2003).
5. See Carr and Kolluri (2001).
6. The value of the edit field is not taken into consideration directly when compiling the DataPlace indicators, but the process does evaluate the validity of several individual fields before processing. We only omit a record entirely if it has an invalid loan purpose. In cases of a nonexistent tract number, the loan is included in the national totals, and when possible, added to county and state totals. The indicator set includes the extent of missing race or income values in a census tract. Finally, to avoid the influence of extreme values in loan amount and income, DataPlace recommends the use of medians instead of averages whenever possible.
7. See Huck (2001) and Dietrich (2002) for discussions about how the missing data may affect HMDA indicators.
8. Note, however, lending institutions are not required to report the street address for the property related to the loan application. Reporting institutions only record the census tract, county, state, and metropolitan area for the property. Therefore, it is not possible to analyze HMDA data for geographic entities smaller than a census tract.
9. For additional information on the tract remapping methodology, see Tatian (2003).
10. For more detailed information about the effect of the reference interest rate on measuring high interest loans over time, see Avery (2006).
11. See NCRC (2005), Bocian (2006).
12. See Scheessele (1998) for a more in-depth treatment of purchased loans.
13. These examples were developed for the original 2005 version of this guide, and include screenshots of a previous version of the DataPlace web site.
14. See Walker et al. (2002).
15. See Rohe and Quercia (2003).
16. See Zielenbach (2003).
17. See Immergluck and Smith (2003).

18. See Duda and Belsky (2001).
19. We have chosen to divide the total only by loans with race data included, which means the shares are larger than they would be if we included all loans. Some researchers note that this methodology mistakenly assumes that the missing race data are random, when analysis by Dietrich and Huck have shown that minority applicants are likely to be overrepresented in loans with missing race information. DataPlace provides the number of missing race data if users choose to use the alternate denominator of all owner-occupied home purchase loans.
20. See Turner et al. (2004).
21. In the District of Columbia, neighborhood clusters are aggregates of census tracts.
22. See Bocian (2006) for an analysis that finds differential loan terms even after controlling for risk factors such as credit scores. Also see Turner et al. (1999) and Turner et al. (2002). In a paired test, two individuals—one white and one minority—pose as home buyers 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.
23. This illustration was completed in an earlier version of DataPlace in which the low-income category was defined as households with less than 80 percent of median income. In the current version, the definition only includes households with incomes of 50 to 80 percent.
24. See Richman (2001).
25. The Reinvestment Fund (2000).
26. When interest rates are low, the number of prime loans increases dramatically without the same effect on the subprime market. Thus, the share of refinance loans that were subprime dropped from 24 percent in 2000 to 9 percent in 2003. See U.S. Department of Housing and Urban Development (2004).
27. See Kirchhoff (2004).
28. Missing race data are not a concern in this analysis. Out of the 259 loan observations, only five were missing race information.
29. These indicators are available for high-interest loans for data 2004 and later.
30. Mortgage Bankers Association (2008).
31. See Freddie Mac (2004).

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