RATES OF FORECLOSURE IN HOME AND ADDI PROGRAMS

U.S. Department of Housing and Urban Development
Office of Policy Development and Research

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Prepared for:

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Opinions expressed in this report are those of the authors and do not necessarily reflect the views and policies of the U.S. Department of Housing and Urban Development or the U.S. government.

FOREWORD

In 2003, Congress established the American Dream Downpayment Initiative (ADDI), in recognition of the fact that a lack of savings is the most significant barrier to homeownership for most low-income families. The ADDI program was designed to provide assistance with downpayments, closing costs, and, if necessary, rehabilitation work done in connection with a home purchase. This formula-based program disburses assistance through a network of Participating Jurisdictions (PJs) in all 50 states and affords them significant flexibility in designing homebuyer programs to meet the needs of their communities.

The Fiscal Year 2006 Senate Report on the Transportation, Treasury and HUD Appropriations Bill directed HUD to address growing concerns that many new low-income homeowners have had difficulty maintaining homeownership by reporting on the foreclosure and delinquency rate of households who received downpayment assistance through ADDI. This report responds to that mandate and addresses those concerns.

Because of the limited program history of ADDI, and because HOME-assisted homebuyers are quite similar to those assisted by the ADDI, this study jointly estimates annual foreclosure and delinquency rates for both HOME- and ADDI-assisted borrowers who purchased homes during the period from 2001 through 2005. The researchers gathered program administrative data and loan level information about more than 4,000 home buyers from a representative sample of participating jurisdictions administering HOME/ADDI funds. HOME/ADDI loans were then matched to the more detailed data available in the FHA-insured mortgage portfolio.

The foreclosure rates among HOME/ADDI loans averaged 1.2 percentage points lower (or roughly a quarter lower) than the corresponding rate for FHA loans over the five year period in general. The foreclosure rates among HOME/ADDI-assisted buyers were on average 40 percent lower than for seller-financed downpayment assistance programs, which were used extensively by nonprofit agencies. The PJs did an effective and responsible job in assisting low–income homebuyers.

Because the HOME/ADDI downpayment programs contained none of the characteristics (sub-prime lending, seller financed downpayments, and exotic mortgage products) so strongly associated with high default rates, they have been relatively successful at managing risk and sustaining homeownership for eligible families. The study demonstrates that responsible homeownership programs can promote financial empowerment among low-income households.

Jean Lin Pao
General Deputy Assistant Secretary
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TABLE OF CONTENTS

CHARTS AND TABLES

EXECUTIVE SUMMARY

In recognition of the fact that a lack of savings is the most significant barrier to homeownership for most low-income families[1], Congress passed the American Dream Downpayment Act of 2003, which established the American Dream Downpayment Initiative (ADDI). The ADDI program was designed to provide assistance with downpayments, closing costs, and, if necessary, rehabilitation work done in conjunction with a home purchase. This formula-based program disburses assistance through a network of Participating Jurisdictions (PJs) in all 50 states and affords them significant flexibility in designing homebuyer programs to meet the needs of their communities. Established as part of the HOME program,[2] ADDI is a prime example of direct federal assistance to promote low-income homeownership.

In recent years there have been growing concerns that many new low-income homeowners have had difficulty maintaining homeownership.[3] To address these concerns in the context of the ADDI program, the Fiscal Year 2006 U.S. Senate Report on the Transportation, Treasury and HUD Appropriations Bill directed the U.S. Department of Housing and Urban Development (HUD) to report on the foreclosure and delinquency rate of households who received downpayment assistance through ADDI.[4] This report has been developed in response to this congressional mandate.

Due to the limited program history of ADDI, and since HOME-assisted homebuyers are quite similar to those assisted by the ADDI, this study jointly estimates annual foreclosure and delinquency rates for both HOME- and ADDI-assisted borrowers who purchased homes during the period from 2001 through 2005.[5] While all HOME/ADDI-assisted borrowers were included in the analysis, in order to have the results be representative of the ADDI program, the sample of PJs was limited to those that were eligible for an allocation of ADDI funds in 2004, the year in which the largest number of PJs were eligible.

The primary objective of the study, which addresses the congressional inquiry, is to provide an estimate of the foreclosure and delinquency rates among HOME/ADDI-assisted homebuyers. HUD was also interested in an analysis of the reasons behind these outcomes. Thus, a secondary objective of this study is to analyze the factors associated with variations in delinquency and default rates.

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[1] See, for example, U. S. Department of Housing and Urban Development, *Barriers to Minority Homeownership*, July 17, 2002, and Herbert et al., *Homeownership Gaps Among Low-Income and Minority Borrowers and Neighborhoods*, U.S. Department of Housing and Urban Development, March 2005.

[2] Created under Title II of the National Affordable Housing Act of 1990, the HOME program is designed to provide affordable housing to low-income households, expand the capacity of nonprofit housing providers, and strengthen the ability of state and local governments to develop and implement affordable housing strategies tailored to local needs and priorities.

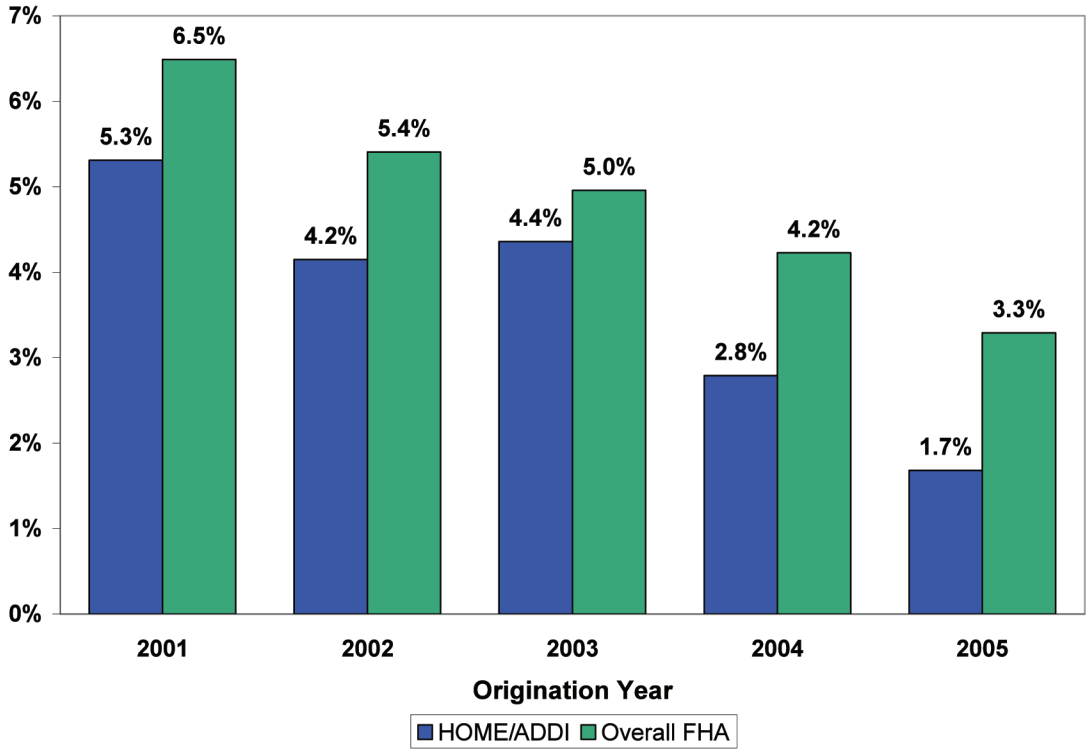
[3] See, for example, Dean Baker, "*Who's Dreaming?: Homeownership Among Low-Income Families*," Center for Economic and Policy Research, Washington, DC, January 2005.

[4] Throughout our discussion the terms "default" and "foreclosure" are used to refer to the same outcome where homeowners lose their home in foreclosure.

[5] Foreclosure and delinquency rates for 2000 are not included here as the data was not consistent enough to produce valid estimations.

In early 2008, we gathered loan level information on a representative sample of more than 4,000 homebuyers directly from PJs that administer ADDI/HOME funds and developed a statistically-valid estimate of the foreclosure rate in each year from 2001 through 2005 (PJ survey data). We used overall foreclosure rates in the FHA-insured mortgage portfolio as of early 2008 as a point of comparison. Information on foreclosure rates in the FHA portfolio were also available for subsets of borrowers based on the source of their downpayment, which provided an opportunity to examine how foreclosure rates for HOME/ADDI-assisted homebuyers compare to seller-funded downpayment programs as well as other sources of assistance.

Chart ES-1:
Estimated Foreclosure Rates in the HOME/ADDI Program Relative to FHA-Insured Portfolio



Note: FHA foreclosure rates are claim rates based on fiscal year of origination while HOME/ADDI foreclosure rates are based on calendar year of origination.

Sources: HOME/ADDI Rate based on Concentrance Consulting survey data. FHA foreclosure rates from "Standards for Mortgagor's Investment in Mortgaged Property: Additional Public Comment Period," Federal Register Vol. 73, No. 116, pages 33941-33955, June 16, 2008 (Overall FHA rate estimated based on Table 1 and Table 4).

Chart ES-1 summarizes the principal study finding, comparing the estimated cumulative foreclosure rates as of early 2008 by the year loans were originated in the HOME/ADDI programs (based on PJ survey data) with the cumulative foreclosure rates for FHA loans overall originated in the same years. For each origination year starting in 2001, the foreclosure rate among HOME/ADDI loans is lower than the corresponding rate for all FHA loans. HOME/ADDI foreclosure rates average approximately 1.2 percentage points lower than the corresponding foreclosure rate in FHA's loan portfolio in each year.

In short, we find that foreclosure rates in the HOME/ADDI program are not excessive, achieving lower rates than the FHA loan program[6] and substantially lower rates than those experienced in the sub-prime market.[7]

Chart ES-1 illustrates a general pattern of higher cumulative foreclosure rates among loans originated in earlier years, with the rate of foreclosure lower for the most recent originations. This pattern makes intuitive sense given that the more time that passes the greater the opportunity for homeowners to experience a foreclosure. However, since earlier vintage loans have had more time to experience a foreclosure, a higher cumulative foreclosure rate for these older loans does not *necessarily* mean that they are riskier than more recently originated loans. But, as will be discovered more at the end of this Executive Summary, an analysis of FHA loans with HOME/ADDI assistance for which information is available on the specific timing of foreclosures does indicate that more recent cohorts of homebuyers through the HOME/ADDI program have had a lower risk of foreclosure than those assisted earlier in the decade, unlike the broader market which has experienced rising foreclosure rates over this period.

The accuracy of the PJ-reported foreclosure estimates was examined using a subset of sampled homebuyers that were matched to FHA's own data on foreclosure incidence. This review found that the PJ estimates were within the normal range of sampling error, although on average the PJ estimates of foreclosure were 0.66 percentage points lower than the rate found in FHA's data. But even if the foreclosure rates shown in Chart ES-1 were inflated by 0.66 percentage points, the foreclosure rates among HOME/ADDI-assisted buyers would still be less than the overall FHA foreclosure rates.

Data on HOME/ADDI-assisted homebuyers was also matched with FHA data to compare foreclosure among these homebuyers with the rates among FHA-insured borrowers relying on other sources of downpayment assistance. HOME/ADDI-assisted buyers did have higher foreclosure rates than buyers who relied on their own funds or family members for their downpayment, likely reflecting the stronger financial position of these buyers. But HOME/ADDI-assisted buyers had lower foreclosure rates than buyers receiving downpayment assistance from government agencies generally as well as those getting their downpayments through nonprofit agencies, which consist largely of so-called seller-funded downpayment programs. Seller-funded downpayment assistance, which was discontinued under the Housing and Economic Recovery Act of July 2008, had been associated with very high foreclosure rates. In comparison, the foreclosure rates among HOME/ADDI-assisted buyers are on average 40 percent lower. Given that seller-financed downpayment assistance has been shown to be so problematic, it is not surprising that those assisted by HOME/ADDI would do much better.

To analyze the factors associated with variations in delinquency and default rates, we examined how foreclosure rates in the HOME/ADDI program varied with borrower, PJ, programmatic, and neighborhood characteristics, along with loan terms. In addition to a univariate analysis, and to account for instances of variable correlation, we performed a

[6] We also examined whether there was a difference in foreclosure rates between the HOME and ADDI programs and found that there was no statistically significant difference.

[7] Based on information gathered by the Mortgage Banker's Association Mortgage Delinquency Survey.

multivariate regression analysis to assess the association between this broad set of variables and the variations in foreclosure rates for HOME/ADDI-assisted homebuyers.

Some key variables shown in the multivariate analysis to have a statistically significant relationship with the incidence of foreclosure are as follows:

- *FHA Insured Status*: Foreclosure rates in the HOME/ADDI program are not excessive, achieving lower rates than the FHA program and substantially lower rates than those experienced in the sub-prime market;
- *Adjustable Rate Mortgage Type*: Compared to other mortgage product types, adjustable rate loans were 2.6 times as likely to experience a foreclosure—although only a very small share of borrowers used adjustable rate loans;
- *PJ Type:* Consortiums and Cities are found to have higher foreclosure rates relative to States, while Counties had the lowest rates (although the difference from the rate for States was not statistically significant);
- *Declines in house prices*: Every additional one percent decline in house prices in the surrounding market area, relative to the peak price since 2000, increases the risk of foreclosure by 10 percent;
- *Other DPA*: Buyers with more than 9 percent in DPA from non-HOME/ADDI sources (i.e., other federal, state, or local government programs) had a lower risk of foreclosure;
- *Higher shares of high cost loans in 2004-2006*:[8] An increase of 1 percent in the share of loans originated in surrounding neighborhoods between 2004 and 2006 that were high cost is associated with a 2 percent increase in the risk of foreclosure;[9]
- *Program protections for homebuyers:* PJs that rely on lenders to ensure that interest rates are not excessive had foreclosure rates that were more than 3 times as high as those for other PJs.
- *Program eligibility requirements:* Programs that set limits on homebuyers' credit scores had 55 percent lower foreclosure rates.

Within this analysis, we also examined whether homebuyers that received housing counseling services were better able to sustain homeownership. The results do not provide evidence that counseling reduced foreclosure risk, however this may be due to lack of consistency in the data. PJs were not required to report counseling information in IDIS prior to 2004 nor were PJs able to provide detailed historical counseling information for the survey. There also may not be enough variation in the use of counseling to find an effect since a large majority of PJs (83 percent) provided homeownership counseling.

[8] High cost loan share is based on Home Mortgage Disclosure Act (HMDA) data, in which a loan is considered high cost if the loan's interest rate exceeds the rate on Treasury bills of a comparable term by more than 3 percentage points for a first lien loan or 5 percentage points for a subordinate lien loan.

[9] We do not have information on whether individual HOME/ADDI homebuyer used higher cost loans. The association between the neighborhood share of high cost loans and the foreclosure rate among HOME/ADDI homebuyers may either reflect a greater likelihood that the homebuyer used a high cost loan or may be due to situations where higher foreclosure rates in the neighborhood due to high cost loans has a negative impact on local house prices and other aspects of the neighborhood's quality of life that may decrease the HOME/ADDI borrowers' incentives to maintain homeownership.

To better understand the divergence of foreclosure rates between FHA-insured and other HOME/ADDI-assisted homebuyers, we compared these two groups by tabulating a variety of borrower, PJ, programmatic, and neighborhood characteristics and performing a targeted multivariate analysis of the factors associated with foreclosure. For the most part, the results of this analysis revealed few important differences among homebuyers by their FHA-insurance status. Our hypothesis is that HOME/ADDI program participants with poorer credit histories are more likely to rely on FHA-insured mortgages, so the higher foreclosure rates among these homebuyers simply reflects their higher credit risk. This hypothesis is supported by the fact that FHA-insured homebuyers are less common among PJs that use credit scores to determine program eligibility.

This study also explored trends over time in foreclosure and delinquency rates for successive cohorts of participants in the HOME/ADDI programs. To achieve this analysis we used the matched IDIS-FHA data, tabulated by the year of origination, to explore whether the relative risk of these loans was increasing or decreasing for successive groups of homebuyers over time. Our analysis determined that homebuyers assisted during 2003 to 2005 were experiencing lower foreclosure rates than those assisted in 2000 through 2002, after taking into account the different ages of these loans. It is apparent from this analysis that the HOME/ADDI loans are becoming less risky for each successive cohort, unlike the broader market which has experienced rising foreclosure rates over this decade. An assessment of available information on delinquency among FHA-insured homebuyers also supports the finding that more recent cohorts of HOME/ADDI-assisted homebuyers have not experienced increased difficulty in meeting their mortgage obligations relative to those assisted in earlier years.

The estimate of the delinquency and default rate among ADDI-assisted homebuyers provided by this study shows that the HOME/ADDI program has been relatively successful at managing risk and sustaining homeownership for eligible families. For the most part, we found little statistically significant variation in foreclosure rates with homebuyer program characteristics. This may well reflect the fact that, as foreclosure rates were low for the HOME/ADDI program, there was little variation to explain. To the extent that some PJs experienced higher foreclosure rates than others, these differences may be largely attributable to differences in market conditions rather than how PJs operate their homebuyer programs. Nonetheless, both univariate and multivariate analysis did find some reduction in foreclosure rates when PJs imposed eligibility requirements related to credit scores and did not rely on lenders to ensure that interest rates were not excessive. Further research focused specifically on programmatic approaches to reduce foreclosure risk would allow for a more in-depth look at the effect of those processes on delinquency and default rates.

I. INTRODUCTION

In 2003 Congress passed the American Dream Downpayment Act, which established the American Dream Downpayment Initiative (ADDI) as part of the HOME program.[10] In recognition of the fact that a lack of savings is the most significant barrier to homeownership for most low-income families, the ADDI program was designed to provide assistance with downpayments, closing costs, and, if necessary, rehabilitation work done in conjunction with a home purchase. In practice, the ADDI program has functioned as part of the HOME program, administered by the same government entities and following the same general program regulations. Taken together, HOME and ADDI are among the key forms of direct federal assistance to promote low-income homeownership.

With general concern growing about the sustainability of homeownership for low-income homebuyers, the FY 2006 U.S. Senate Report on the Transportation, Treasury and HUD Appropriations Bill directed the U.S. Department of Housing and Urban Development (HUD) to report on the foreclosure and delinquency rate of households who receive downpayment assistance through ADDI.[11] This report has been developed in response to this congressional mandate.

The *primary objective* of the study is to provide an estimate of the foreclosure and delinquency rates among HOME/ADDI-assisted homebuyers. While Congress only directed HUD to provide information on delinquency and default rates, HUD is interested in an analysis of the reasons behind these outcomes as well. Thus, a *secondary objective* of this study is to analyze the factors associated with variations in foreclosure rates. An analysis of the factors associated with foreclosure can help to identify whether there are differences in the characteristics of homebuyer programs, homebuyers, or their loans that contribute to overall differences in foreclosure rates.

In addition, while Congress only directed HUD to examine the ADDI program, the study has been framed to look at homebuyers assisted by both the HOME and ADDI programs. This change was made in large part because the ADDI program only began assisting homebuyers in 2004, with a good deal of program activity occurring in more recent years. Thus, there is not sufficient program history to provide a good indication of foreclosure and delinquency. To address this limitation, and in recognition of the great similarity in program operations of the HOME and ADDI programs, the scope of the study was broadened to jointly examine the foreclosure incidence of those assisted by both the HOME and ADDI programs.

A. Overview of the HOME and ADDI Programs

Both ADDI and HOME are formula-based programs that grant funds to four types of participating jurisdictions (PJs): states, cities, counties, and consortia. Under both programs,

[10] Created under Title II of the National Affordable Housing Act of 1990, the HOME program is designed to provide affordable housing to low-income households, expand the capacity of nonprofit housing providers, and strengthen the ability of state and local governments to develop and implement affordable housing strategies tailored to local needs and priorities.

[11] Throughout our discussion the terms "default" and "foreclosure" are used to refer to the same outcome where homeowners lose their home in foreclosure.

states are automatically eligible for grant allocations, while city and county governments must meet a minimum threshold measured by a formula in order to receive funds directly. Local governments that do not meet the minimum threshold can receive funds by forming a consortium with other local governments to reach the threshold or can seek funds through their state's program.

Both programs afford PJs a great deal of discretion in targeting assistance. One of the main requirements of these programs is that assisted homebuyers have incomes at or below 80 percent of the area median income (AMI). Beyond that, PJs are free to decide whether to open their program to all eligible households or to target specific areas or income groups. Both programs also permit PJs a great deal of flexibility in how homebuyer assistance is provided.

A significant difference between HOME and ADDI programs is that in addition to efforts to support homeownership, PJs may also use HOME funds for the acquisition, construction, and rehabilitation of rental housing, for tenant-based rental assistance, and for rehabilitation of owner-occupied properties. Another difference between the programs is that while ADDI funds may only be used for downpayment assistance, closing costs, and rehabilitation costs for ADDI-assisted properties, HOME funds may also be used to provide primary financing, interest rate subsidies, or loan guarantees. Other differences from the HOME program include the fact that ADDI-assisted families must also be first-time homebuyers and the amount of ADDI assistance per homebuyer cannot exceed $10,000 or 6 percent of the purchase price, whichever is greater.

A HUD study of the HOME program in 2003 found that the median amount of direct homebuyer assistance was $8,000, with an average of $13,000, so the cap on ADDI assistance is below the average amount of HOME assistance for a little less than half of all PJs.[12] However, PJs can combine ADDI assistance with other funding sources — including HOME — to assist eligible households, so in practice this cap is not likely to be limiting. Both programs require that either a resale or recapture agreement be executed between the PJ and the homebuyer, which determines what happens if the property is sold during the long-term affordability period. The affordability period is 5 years if the amount of assistance provided is less than $15,000, 10 years if the assistance is more than $15,000 but less than $40,000, and 15 years if the amount of assistance is over $40,000. In practice, this requirement means that PJs must retain a lien on the purchased property for the full affordability period even if the assistance given is in the form of a grant.

Thus, for the most part, the type of assistance provided through HOME and ADDI should be comparable in terms of the impact on housing affordability for homebuyers — and thus, their ability to maintain homeownership.

Homebuyer programs have accounted for a significant share of annual HOME expenditures. According to HUD's most recent production report for the HOME program, from 1992 through June 2008, 362,873 homebuyers had been assisted, including roughly 277,170 that had acquired existing homes and 85,709 that purchased units created through new construc-

[12] "Study of Homebuyer Activity through the HOME Investment Partnership Program," Jennifer Turnham, Christopher Herbert, Sandra Nolden, Judith Feins, and Jessica Bonjorni, U.S. Department of Housing and Urban Development, December 2003.

tion or rehabilitation of existing homes.[13] In recent years, the number of assisted homebuyers has been between 20,000 and 30,000 a year. Since fiscal year 2003, approximately 30,000 homebuyers received downpayment assistance through ADDI. ADDI assistance peaked in 2006 with 9,096 assisted homebuyers and declined to 4,209 assisted homebuyers in 2008, reflecting a decrease in annual ADDI appropriations.

B. Study Methodology

A significant challenge for this study was obtaining information on foreclosure and delinquency rates among HOME- and ADDI-assisted buyers. While PJs hold a secondary lien on the property for the duration of the affordability period, a large share of PJs are not involved in collecting regular mortgage payments from assisted homebuyers, nor do they have good information on the lender who holds the first mortgage for these buyers. To overcome this challenge we devised a methodology that relied on two strategies. The first strategy entailed soliciting information on a representative sample of more than 6,000 homebuyers directly from PJs that administer HOME/ADDI funds. These data were used to develop a statistically-valid estimate of the foreclosure rate for the HOME/ADDI programs in each year from 2000 through 2005. Overall foreclosure rates in the FHA portfolio are used as a point of comparison with these rates since FHA serves a predominantly low-income population and includes many first-time homebuyers. Information on foreclosure rates in the FHA portfolio were also available for different classes of borrowers based on the source of their downpayment, which provided an opportunity to examine how these rates compared to seller-funded programs and other forms of downpayment assistance.

Information on borrowers, the home purchase transaction, PJs, and neighborhoods were used to analyze the factors associated with variations in foreclosure rates to see if there are any lessons for policy makers in how to minimize these risks. However, a key limitation of this approach was that PJs often did not maintain detailed information on the borrowers, their loan terms, or historical programmatic characteristics to support a rich analysis of the factors associated with foreclosure. In addition, while foreclosure rates were the primary concern of this study, for recently originated loans, delinquency rates could be a better indicator of borrower distress since foreclosures often occur at the end of a lengthy process. To address these limitations, our second analysis strategy relied on obtaining detailed loan and borrower data from FHA on HOME/ADDI-assisted buyers that were financed using FHA-insured mortgages.

C. Organization of the Report

The remainder of this report follows key steps undertaken by the Concentrance team to achieve the objectives laid out above. As stated previously those objectives are to:

- Provide an estimate of the foreclosure and delinquency rates among HOME/ADDI-assisted homebuyers; and
- Analyze the factors associated with variations in delinquency and default rates.

[13] *HOME Program National Production Report (As of June 31, 2008)*, U.S. Department of Housing and Urban Development.

Section II provides a detailed description of the data collection and analysis strategies, sampling approach, sources of data and data issues that we have discovered. Section III begins with an overview of ADDI/HOME foreclosure rates based on data collected from PJs on more than 5,000[14] cases gathered through the survey of PJs. We then discuss the incidence of foreclosure and delinquency among FHA-insured participants in HOME/ADDI programs based on survey results, and then based on matched FHA and data from the Integrated Disbursement and Information System (IDIS), which is used by PJs to report their use and identify allocations of HOME/ADDI downpayment assistance. The final section summarizes study findings, draws conclusions regarding factors contributing to variation in foreclosure and delinquency and discusses some policy implications of our findings.

This report contains five appendices. Appendix A provides data collection package used in the study; Appendix B presents details on the sampling approach, development of sample weights, the data collection process and the process for matching FHA and IDIS data; Appendix C offers detailed tabulations of the regression analyses; Appendix D provides an interpretation of the estimated coefficients from the Logit and hazard rate regression models; Appendix E lists references cited; and Appendix F provides a list of PJs that participated in our survey.

[14] Cases from 2000 are included in the accounting.

II. DATA SOURCES AND DATA COLLECTION PROCESS

There were three main sources of data used in this study: 1) information gathered through a PJ survey on both foreclosure incidence among a sample of HOME/ADDI assisted homebuyers and characteristics of PJ homebuyer programs (PJ survey); 2) administrative data on homebuyers assisted through the HOME/ADDI programs from HUD's Integrated Disbursement & Information System (IDIS); and 3) administrative data on FHA-insured mortgages where borrowers also received assistance through the HOME/ADDI programs (FHA-IDIS match). These primary data sources were supplemented with data on metropolitan area or census tract characteristics from several different sources.

The section opens with a description of the process used to execute the PJ survey including development of the sample of homebuyers as well as the survey instrument used to collect foreclosure and programmatic information from PJs. We also summarize the results of the data collection effort. We then describe the administrative data used in the study from IDIS and FHA as well as the supplemental data on the characteristics of geographic areas used in the analysis. The data collection instruments used are presented in Appendix A. Further details on the sampling approach, the method for estimating sampling weights used to analyze results, and the data collection process are provided in Appendix B.

A. Survey Methodology and Results

Sampling Strategy

The PJ sample was designed to produce an estimate of the foreclosure rate for the combined HOME/ADDI programs for each of the years 2000 through 2005. The respondent universe was made up of the PJs that administered these programs and thus maintained the information desired on individual homeowners. HUD's IDIS data was used to identify the number of homebuyers assisted by each PJ in each year from 2000 through 2005. The respondent universe in each year from 2000 through 2005 consisted of PJs that assisted at least 1 homebuyer in that year and that were eligible to receive an allocation of ADDI funding in Fiscal Year 2004.[15] In addition to these restrictions, the universe of PJs also excluded PJs in Louisiana, Mississippi, and parts of Alabama affected by the 2005 hurricanes in order to avoid having the estimated foreclosure rates elevated due to the impact of these storms. In addition, one PJ that was under investigation for mismanaging its HOME/ADDI program was also excluded from the respondent universe. Based on these criteria, the total number of PJs in the respondent universe ranges from a low of 302 in 2000 to a high of 371 in 2005.

The PJ sampling approach was designed to minimize the number of PJs that were selected in order to minimize the burden placed on survey respondents while also meeting goals related to the variance of the estimated foreclosure rate. The sample was designed to provide an estimate of the foreclosure rate with a standard error of 1 percent based on an assumed

[15] PJs were eligible for ADDI funding if they have a total population of at least 150,000 or would receive an allocation of more than $50,000 based on the ADDI Allocation Formula. Fiscal Year 2004 had the largest allocation of funding for the ADDI program, so it was the year when the largest number of PJs were eligible for funding.

foreclosure rate in the HOME/ADDI program of 5 percent. To accomplish these goals the study design used a sample of 33 PJs in each of the 6 years. The sampling process took into account the number of homebuyers assisted in each year, and was designed to ensure representation of different types of PJs (i.e., state, city, county, or consortium of local governments) and region of the country.

For PJs assisting more than 50 homebuyers in a given year, 50 homebuyers were selected at random to collect information on. In cases where PJs assisted fewer than 50 homebuyers in a given year, PJs were asked to report on all of their assisted homebuyers for that year.

The resulting sample consisted of 133 PJs, including 88 that were sampled once, 34 that were sampled twice, 7 that were sampled 3 times, 1 that was sampled 4 times, 2 that were sampled 5 times, and 1 that was sampled in all 6 years. However, since the sample is limited to a maximum of 50 buyers per year, the largest number of buyers any one PJ was asked to report on was 300. The total number of buyers sampled in each year ranged from 967 to 1,165.

Description of Survey Instrument

The PJ survey sought two types of information: 1) the foreclosure status of individual loans in a sample of homebuyers assisted by the PJ along with some additional information on the home purchase transaction; and 2) information on the PJ's homebuyer program as it existed at the time that the sampled homebuyers were assisted. Table 1 summarizes the information collected on the sample of homebuyers.

As reflected in the three panels of Table 1, there were three sections to the data collection instrument: A) IDIS fields to be verified or corrected; B) key fields indicating the current

Table 1:
Data Collected on Sampled Homebuyers Through PJ Survey

A. IDIS Fields Verified/Corrected	B. Key Fields on Foreclosure/Delinquency Status and HOME/ADDI Programs	C. Data from Loan Documents
• Borrower name • Property address • Purchase price • Completion date • Total HOME/ADDI funding • Total HOME/ADDI downpayment assistance • Total other funds • Total private funds • Primary source of funding (public or private) • Affordability period	• Status of HOME/ADDI Lien (current, satisfied, expired, or foreclosed) • Status of first mortgage (if known) • Whether buyer assisted through HOME or ADDI programs	• Primary mortgage amount • Loan closing date • Interest rate • Loan term (years) • Loan type • ARM type • Monthly housing payment (including principal, interest, property taxes, and property insurance) • Total amount financed • Buyer's cash contribution • Buyer's gross household income • Credit score at time of loan • Whether primary mortgage was FHA insured

foreclosure and delinquency status of homebuyers and whether assistance was provided through the HOME or ADDI programs; and C) data from loan documents if available. The lien status field in Section B was required for the response to be considered complete, while the fields in Section C were expected to be more difficult for PJs to complete and so were not required for a completed response.

The PJ survey also sought information on selected characteristics of the PJ's homeownership program in the year in which sampled homebuyers were assisted. Table 2 summarizes these fields. The programmatic questions included in the PJ survey covered three topics: homeownership education and counseling, program eligibility criteria, and homebuyer protection provisions to ensure buyers obtained decent homes and at an affordable cost. The data collection instruments are presented in Appendix A.

Table 2:
Data Collected on Homebuyer Program Characteristics Through PJ Survey

Homebuyer Education and Counseling	Eligibility Criteria	Provisions for Buyer Protection
• Whether homeownership counseling was required • Percent of participants received counseling • Average number of hours of counseling • Share of clients that received different types of counseling (e.g., individual or group pre-purchase, post-purchase counseling, etc.)	• Maximum income • Credit scores • Other	• Review appraised value • Conduct property Inspections • Set maximum housing cost to income ratio • Set maximum total debt to income ratio • Monitor interest rates on first mortgage • Intervene in mortgage delinquencies • Other

PJ Survey Results

The data collection process (described in detail in Appendix B) resulted in a high response rate both in terms of number of PJs and number of cases. Out of the 133 PJs in the original sample, we received data from 107 PJs. The remaining 26 PJs consisted of 16 PJs that declined to participate or failed to respond within the allocated timeframe and 10 PJs whose entire sample consisted of not assisted homebuyers either due to miscoding of the type or year of assistance.

Table 3 summarizes our data collection results. Of the initial study sample of 6,351 homebuyers, 143 cases were found to be outside of the study universe either because they were not assisted homebuyers or were homebuyers assisted outside of the study timeframe. Of the remaining 6,208 cases, foreclosure status was obtained for 5,065 cases, representing a response rate of 81.6 percent. Among non-responding cases, 611 were cases where the PJ failed to respond to the survey and 532 were cases where the PJ responded but did not know the foreclosure status of the sampled homebuyer. Of the 5,065 cases reported, a total of 173 had experienced a foreclosure, or 3.4 percent of the unweighted sample.

The fairly high response rate provides some confidence that there was not any response bias due to PJs with higher foreclosures choosing not to respond to the survey. One method used

Table 3:
Summary of Data Collection Results

	Item description	Number of Cases	%
A	Original universe – number of cases	6351	100.00
B	Not assisted homebuyers included in original sample	143	2.25
C	Remaining universe of cases (A-B)	6208	100.00
D	Data not reported – PJs that declined to participate or did not respond	611	9.84
E	Data not reported – information not available	532	8.57
F	Total data not reported (D+E+F)	1143	18.41
G	Data reported – number of cases	5065	81.58

to identify any potential non-response bias is to compare foreclosure rates for homebuyers identified as having FHA-insured loans in the survey data with foreclosure rates among FHA-insured homebuyers identified by matching IDIS and FHA data, which are not subject to any response bias. As will be presented in the next section of this report, there is not a substantial difference in the foreclosure rates for this FHA-insured subset from the PJ survey compared to the matched IDIS-FHA data with the exception of the year 2000 sample. For other sample years, the foreclosure rates from these two sources are fairly similar, with the sample data having higher rates in some years and lower rates in other years consistent with sampling variation.

As described in Appendix B, sampling weights were estimated taking into account the survey design and survey non-response to provide estimates of foreclosure rates for the HOME/ADDI program in each year from 2000 to 2005.

B. Other Key Data Sources

IDIS Data

PJs use IDIS to report their use of HOME/ADDI funds to HUD and identify allocations of HOME/ADDI funding to individuals for downpayment assistance.[16] The IDIS data was crucially important for this study for two reasons. The first was that the data provided information on the universe of homebuyers assisted by the HOME/ADDI programs that we used to develop the study's sampling approach. The second was that it provided details on the amount and type of assistance provided, and the characteristics of the buyers and their home that we used in analyzing the factors associated with variations in foreclosure rates. The IDIS fields that were used for this study are summarized in Table 4.

As described in greater detail in the discussion of the Data Collection Process in Appendix B, certain characteristics of the IDIS database resulted in adjustments to the sample of HOME/ADDI loans used for this study. There were three types of issues that resulted in removal or replacement of cases from the sample: cancelled loans (replaced), multiple activity IDs (replaced) and cases incorrectly identified as downpayment assistance (removed). As is

[16] Of some importance for this study, the IDIS system does not distinguish between the HOME and ADDI programs.

Table 4:
IDIS Data Fields

Borrower Characteristics	Financing Characteristics	Property Characteristics
• Household income as percent of area median income • Race/ethnicity • Household size • Household type • First-time homebuyer status	• Sales price • Completion data (year assistance was provided) • Amount and type of HOME/ADDI assistance • Other sources of funds used to purchase home • Use of FHA-insured mortgage	• Street address • New construction or existing home

indicated in Table 3, cases incorrectly coded as downpayment assistance constituted only 2.25 percent of the sample. Due to a relatively small number of these instances we are confident that these data adjustments did not have a material impact on our findings.

The IDIS data was of great importance for the study in defining the universe of assisted HOME/ADDI homebuyers and in providing a variety of descriptive information on these homebuyers. As a result, it is important that the IDIS data be accurate. Since the main purpose of the IDIS system is to track expenditures through HUD grant programs, it is expected that the number of homebuyers assisted and amount of HOME/ADDI funds expended would be substantially accurate. However, state and local governments may have less incentive to be concerned about the accuracy of other descriptive information. The survey of the HOME/ADDI programs asked PJs to correct key fields reported in IDIS that would be used in the analysis. Our tabulations show that in general the accuracy rate is 90 percent or higher for most of the data elements we examined (see Appendix B for details on the correction rates for individual variables in IDIS).

FHA-IDIS Match Data

While the data collected from PJs provided an estimate of the foreclosure rate for the HOME program in each year from 2000 through 2005, there were several limitations of these data. First, there can be a long period of time between homeowner failure to meet his or her mortgage obligation and when a foreclosure is completed and brought to the attention of the PJ. The data collected on foreclosure incidence from PJs did not provide a good indication of the degree of financial distress experienced by more recent homebuyers. Second, given limitations on the information available from PJs on the details of when foreclosures occurred, the survey data would not provide an indication of how soon after origination homeowners were foreclosed. Third, the range of explanatory variables available from PJs was limited, with such factors as loan terms and debt burdens unavailable for most sampled buyers. The limited number of explanatory variables made it difficult to identify the factors that contributed to the reported incidences of foreclosure. Finally, in order to avoid placing too great a burden on PJs, the homebuyer sample sizes were relatively small, about 1,000 buyers per year. Small sample sizes made it difficult to generalize our findings to the population as a whole, especially with respect to comparisons analyzed via the application of inferential statistics like tests of significance.

In order to address these limitations, we supplemented our analysis of data collected from PJs with an analysis of FHA-insured homebuyers using HOME/ADDI downpayment assistance. We matched IDIS data on all HOME/ADDI assisted homebuyers from calendar years 2000 through 2005 with FHA data on its insured mortgage portfolio. The matching process relied primarily on the property address information in the two data sets. A total of roughly 48,000 homebuyers assisted by the HOME/ADDI programs between 2000 and 2005 were identified in FHA's data. These data provide a rich set of information on homebuyers, their mortgages and properties, and their delinquency and foreclosure history. In addition, since data included property addresses, we also were able to identify the metropolitan area and census tract where these properties were located and include market and neighborhood characteristics in our analysis. Table 5 summarizes the fields available in the FHA- data.

Table 5:
FHA Data for HOME/ADDI Assisted Homebuyers

Borrower Characteristics	Mortgage and Property Characteristics	Delinquency and Foreclosure History
• Age • Gender • Race and ethnicity • Marital status • Number of dependents • Income • Self-employment status • First-time homebuyer • Total monthly debt • Total available assets	• Number of living units in property • Manufactured home • Purchase price (including closing costs) • Appraised value at purchase • Total monthly housing payments • Primary mortgage amount • Adjustable Rate Mortgage (ARM) indicator • Amount of secondary financing • Seller contribution	• Current status (current, delinquent, or foreclosed) • Foreclosure date (if applicable) • Delinquency history (number of episodes, total months delinquent) • Loss mitigation costs to HUD

Supplemental Data

Several other sources of data were used to supplement the main data described above. These include:

- The **2000 decennial census at the census tract level** to capture neighborhood characteristics that may influence the risk of foreclosure. The measures used include: the ratio of tract home prices to the metropolitan area or state median house price, the ratio of median household income to the metropolitan or state median household income, the percent minority, the percent of adults with a college degree, the percent of owner-occupied homes, and the percent of the housing stock in single family detached units.
- The **Office of Federal Housing Enterprise Oversight (OFHEO) repeat sales house price index** to capture declines in house prices since 2000 that may increase the risk of foreclosure. The specific measure used is the ratio of the index from the first quarter of 2008 to the highest value of the index since 2000 for either the core based statistical area or the state (in non-metropolitan areas).

- **Home Mortgage Disclosure Act (HMDA) data** on the share of mortgages originated at the census tract level from 2004 through 2006 that were so-called high cost mortgages.[17] There are two ways in which the share of high cost mortgages could affect the likelihood of an assisted homebuyer experiencing a foreclosure. First, this measure indicates the likelihood that the homebuyer took out a high-cost mortgage. Second, areas with high shares of these loans are more likely to experience high foreclosure rates, which in turn will depress neighborhood level house prices and increase a host of neighborhood disamenities that would make it more likely that an owner would give up their home to foreclosure.
- **Bureau of Labor Statistics data on county unemployment rates** as of June 2008, which provides an indication of whether the assisted homebuyer is likely to be unemployed and unable to meet their mortgage obligations.

[17] HMDA defines a "high-cost mortgage" as one with an interest rate that is more than 3 percentage points above the yield on Treasury bills with a comparable term for first-lien mortgages or 5 percentage points for junior lien mortgages.

III. STUDY FINDINGS: FORECLOSURE AND DEFAULT EXPERIENCE

The first half of this section presents our estimates of foreclosure rates in the HOME/ADDI program based on the PJ survey data, along with our analysis of the factors associated with variations in these rates. All of the survey results presented were weighted as described in Appendix B to represent the universe of HOME/ADDI homebuyers. The second half of the section then focuses on foreclosure and delinquency rates among borrowers assisted through the HOME/ADDI programs who obtained an FHA mortgage, incorporating analysis of the matched IDIS-FHA data.

A. HOME/ADDI Foreclosure Rates

Section Highlights

- ☑ Foreclosure rates in the HOME/ADDI programs were generally lower than in the FHA loan program.
- ☑ The foreclosure rates for FHA-insured loans with HOME/ADDI assistance were 40 percent lower than FHA-insured loans with seller-funded downpayment assistance.
- ☑ Among HOME/ADDI-assisted homebuyers, those with FHA insured loans had a higher probability of going into foreclosure.
- ☑ There was no statistically significant association between higher levels of HOME/ADDI assistance and foreclosure rates, although high levels of other forms of DPA did reduce this risk.
- ☑ PJs that used credit scores to determine eligibility and PJs that did not rely on lenders to ensure that interest rates were not excessive had lower foreclosure rates.
- ☑ While housing counseling did not appear to reduce the risk of foreclosure by a statistically significant amount, this result could be due to data issues.
- ☑ Declining house prices in the local market area increased the risk of loans going to foreclosure.
- ☑ Homebuyers living in neighborhoods with higher shares of high cost loans had a slightly increased risk of foreclosure.

Relevant Benchmarks

Any household can be confronted with an unexpected financial crisis that can challenge its ability to meet monthly mortgage obligations. But the low-income households intended to be served by the HOME/ADDI programs are both more likely to experience financial crises and less likely to have the financial resources needed to weather these events.[18] Therefore, some level of foreclosures is inevitable. In order to assess whether the estimated foreclosure rates for homebuyers assisted by the HOME/ADDI programs may be excessive,

[18] See "The Experience of Low-Income and Minority Homeowners: A Review and Synthesis of the Literature," by Christopher E. Herbert and Eric S. Belsky, *Cityscape* 10(20):5-60.

a benchmark for comparison is needed. The question for policy makers will be whether the extent of foreclosures experienced among HOME/ADDI borrowers is reasonable given the goal of enabling homeownership for a group that might otherwise not be able to achieve this goal.

To help put the HOME/ADDI foreclosure rates in perspective, we used foreclosure rates for all FHA loans from the corresponding fiscal year as a point of comparison. Of the major mortgage market segments—conventional prime, sub-prime, and FHA-insured—FHA borrowers provided the most relevant benchmark as they consisted of a similar population of low-income and largely first-time homebuyers.[19] Given the federal government's long commitment to FHA's lending programs, the foreclosure rates experienced by these borrowers may also represent an estimate of the level of foreclosures that might be deemed acceptable by policy makers. A comparison with FHA foreclosure rates was also facilitated by the availability of detailed information on foreclosure rates for FHA-insured loans by the fiscal year of origination.[20]

We also examined data from the Mortgage Banker's Association Delinquency Survey to help put FHA's foreclosure rates in perspective relative to other key segments of the mortgage market. During the first quarter of 2008, 0.87 percent of FHA loans started the foreclosure process. In comparison, the rate at which sub-prime loans began foreclosure was more than four times higher at 4.06 percent. Given that subprime loans are responsible for much of the current foreclosure crisis, the FHA foreclosure rates provide a somewhat conservative point of comparison for the HOME/ADDI programs.

On the other hand, conventional prime loans had a lower foreclosure start rate than FHA loans, with 0.54 percent starting the process. This lower foreclosure rate was not surprising given that prime loans usually go to borrowers with higher income, more equity in their homes, and better credit scores. But, even with the lower risk among prime borrowers, FHA foreclosure rates were not substantially worse than conventional prime loans, making FHA foreclosure rates a reasonable benchmark for the HOME/ADDI programs.

Comparison of Foreclosure Rates for HOME/ADDI and FHA Loans

FHA Loans Overall

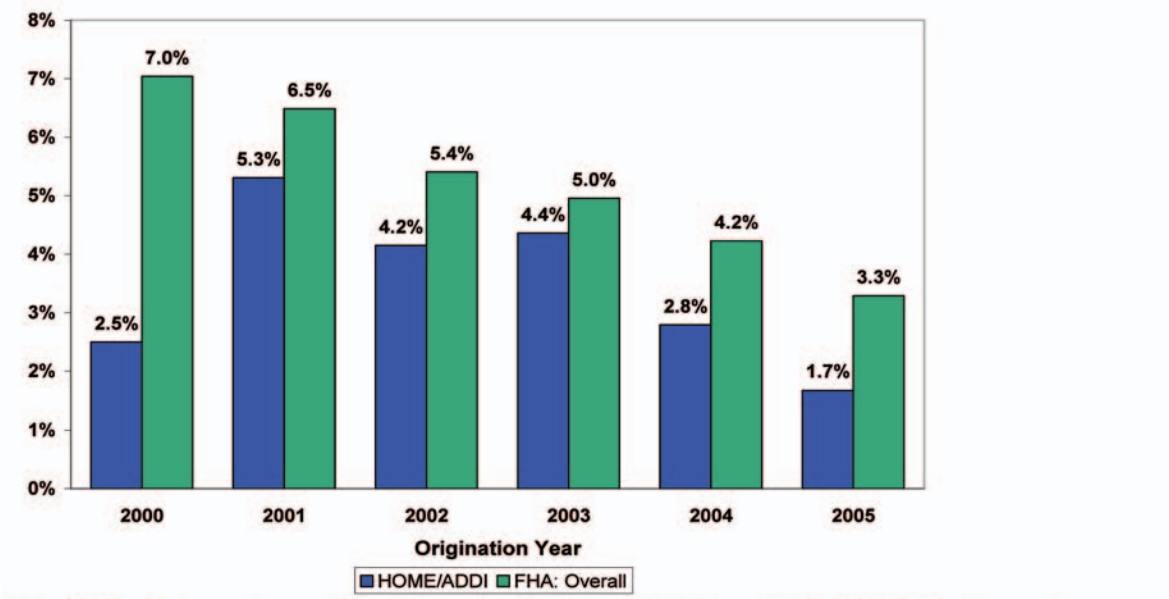
Chart 1 presents the estimated foreclosure rate by origination year in the HOME/ADDI programs based on PJ survey data along with the foreclosure rate among all FHA loans originated in the corresponding fiscal year.[21] Chart 1 illustrates a general pattern of higher cumulative foreclosure rates among loans originated in earlier years, with the rate of

[19] As of 1999, 81 percent of FHA home purchase loans went to first-time homebuyers, which is close to the 88 percent first-time homebuyer share found in our HOME/ADDI sample. See "First-time Homebuyers: Trends from the American Housing Survey," *U.S. Housing Market Conditions*, Third Quarter 2001, U.S. Housing and Urban Development.

[20] Tables showing foreclosure (claims) rates by year of origination for FHA loans was published in from "Standards for Mortgagor's Investment in Mortgaged Property: Additional Public Comment Period," Federal Register Vol. 73, No. 116, pages 33941-33955, June 16, 2008.

[21] The use of fiscal year of origination for the FHA loan foreclosure rates provides a somewhat conservative comparison for HOME/ADDI loans since the fiscal year begins three months earlier than a calendar year and so provides more time for a foreclosure to occur. The FHA foreclosure rates are as of February 2008, while the PJ survey data was collected between February and May 2008.

Chart 1: Estimated Foreclosure Rate in the HOME/ADDI Program Compared to FHA-Insured Portfolio



Note: FHA foreclosure rates are claim rates based on fiscal year of origination while HOME/ADDI foreclosure rates are based on calendar year of origination.

Sources: HOME/ADDI Rate based on Concentrance Consulting survey data. FHA foreclosure rates from "Standards for Mortgagor's Investment in Mortgaged Property: Additional Public Comment Period," Federal Register Vol. 73, No. 116, pages 33941-33955, June 16, 2008 (Overall FHA rate estimated based on Table 1 and Table 4).

foreclosure decreasing for the more recent originations. This pattern makes intuitive sense given that the more time that passes the greater the opportunity for homeowners to experience a foreclosure.[22] For each origination year from 2001 onward, the foreclosure rate among HOME/ADDI loans was lower than the corresponding rate for FHA loans, averaging about 1.2 percentage points lower in each year.[23] In short, we found that foreclosure rates in the HOME/ADDI program were not excessive, achieving generally lower rates than the overall FHA loan program.

The one exception to this trend was for borrowers assisted through the HOME/ADDI program in 2000, who had a lower foreclosure rate than all other groups except those who bought in 2005, raising questions about the validity of the estimate for the year 2000.

In order to determine the accuracy of the foreclosure rate estimates for each year, we matched and compared the foreclosure rates for FHA-insured loans as reported by PJs (identified as FHA in PJ survey data) with the rates from FHA's own administrative data for HOME/ADDI-assisted homebuyers (FHA-IDIS match). Since FHA's administrative data

[22] A higher cumulative foreclosure rate for loans of earlier vintages does not necessarily mean that these loans are riskier than more recently originated loans, since they have had more time to experience a foreclosure. Analysis presented later in this chapter for FHA loans comparing foreclosure rates over time provides a better indication of the relative risk of foreclosure of different borrower cohorts. But this analysis shows that, in fact, these earlier cohorts of borrowers did face a higher risk of foreclosure even controlling for the amount of time that has passed since purchase.

[23] Multivariate analysis controlling for the time since loan origination reported later in this report (p. 35, 37) indicates that HOME/ADDI borrowers from the recent cohorts (2003 to 2005) experienced lower foreclosure rates compared to those from the earlier cohorts (2000 to 2002). However, it is important to note that there is still limited experience with these newer loans.

can be taken as a definitive indication of whether a foreclosure occurred, this comparison provides a strong check on the validity of the foreclosure rates reported by PJs. Table 6 on the next page provides this comparison of the subset of PJ survey data to the subset of FHA-IDIS match data.

As shown, for those assisted in the years 2000 through 2002 and again in 2005 the estimated foreclosure rate from PJs was lower than that found in FHA's data. However, in 2003 and 2004, the rates reported by PJs exceeded those found in FHA's data. The largest difference was for those assisted in the year 2000, where the PJ foreclosure rate was 2.8 percentage points lower than the rate in FHA's data. The PJ estimate for the year 2000 is also the only one of the six estimates that is outside of the 95 percent confidence interval for the PJ estimate. This comparison confirms that the PJ survey data for 2000 underestimates the actual foreclosure rate. When this year is excluded, we find that in 2 of the 5 years, the PJ estimate is higher than the FHA rate and in 3 of the 5 years it is lower. While there is a slight overall tendency for the PJ estimate to be lower — averaging 0.66 percentage points lower than the foreclosure rates indicated by FHA's administrative data for those assisted between 2001 and 2005 — this difference is within the range of the estimated sampling error as indicated by the 95 percent confidence interval shown in Table 6.[24]

This comparison gives us confidence in the PJ estimates of foreclosure rates for the years 2001 through 2005. The estimates for 2000 appear to be too low, however. Even if the PJ-reported foreclosure rates shown in Chart 1 were increased by 9 percent to account for potential underreporting bias by PJs, the resulting rates would still be lower than the overall FHA foreclosure rate.

We cannot identify any explanation for the discrepancy with the 2000 foreclosure estimate. The PJ survey response rates were not materially different from other years, nor were there any systematic differences in PJ or borrower characteristics. The most plausible explanation for the low foreclosure rate for this year seems to be random sampling variation.

Table 6:
Determining the Accuracy of PJ Survey Data (Comparison of Foreclosure Rates for Cases in Both PJ Survey and IDIS-FHA Matched Data)

Loan Origination Year	Number of Matched Cases	Foreclosure Rate from PJ Survey	Foreclosure Rate from FHA Data	Difference (Percentage Points)	95% Confidence Interval for PJ Survey Data Estimate
2000	314	4.2%	7.0%	-2.8	1.9% to 6.5%
2001	253	8.1%	10.3%	-2.2	4.8% to 11.4%
2002	289	5.4%	6.6%	-1.2	2.6% to 8.1%
2003	276	7.6%	5.8%	1.8	4.2% to 11.0%
2004	196	4.2%	4.1%	0.1	1.3% to 7.1%
2005	271	1.8%	3.0%	-1.2	0.0% to 3.6%
2001-2005	1,285	5.33%	5.99%	-0.66	4.1% to 6.6%

Note: 95% confidence interval takes into account the expected degree of sampling variation; 95 percent of the time the true foreclosure rate is expected to fall within this range.

Sources: PJ Survey data from Concentrance Consulting PJ survey and FHA administrative data.

[24] Methods for estimating the sampling errors are documented in the "Variance and Confidence Intervals" section of Appendix B.

FHA Loans by Source of Borrower Downpayment

Another point of comparison for foreclosure rates for the HOME/ADDI program are FHA borrowers by downpayment source. Chart 2 compares the foreclosure rates among all HOME/ADDI-assisted homebuyers that were matched with FHA's administrative data (FHA-IDIS match data) with the foreclosure rates for all FHA-insured buyers by the source of their downpayment. The FHA foreclosure (or claims) rates are from a recently published Federal Register notice providing this information broken out by the fiscal year the loan was originated and whether the source of the downpayment used was from the borrower's own funds or was a gift from family, provided through a government agency, or from a nonprofit organization.[25] HUD has found that this last group consists largely of seller-funded downpayment assistance, which has been associated with very high foreclosure rates among FHA loans. These high foreclosure rates have created concerns that the high claims rates may be driven by the fact that when sellers stand to benefit from the home sale transaction they may promote their own interests at the expense of the borrower's interest.[26]

Before turning to a comparison of foreclosure rates by downpayment source, it is important to note that the foreclosure rates among HOME/ADDI-assisted homebuyers using FHA-insured mortgages (FHA-IDIS match data) are generally much higher than among HOME/ADDI-assisted homebuyers overall (PJ survey data). This is evident by comparing the foreclosure rate for HOME/ADDI-assisted homebuyers shown in Chart 1 with those shown in Chart 2. The higher foreclosure rates among FHA-insured buyers will be examined in some depth later in this chapter, but this seems to reflect the fact that FHA-insured borrowers represent a higher-risk segment of the mortgage market.

Chart 2 shows that HOME/ADDI-assisted buyers using FHA-insured mortgages have consistently higher foreclosure rates than FHA-insured borrowers using either their own funds or contributions from family members for their downpayment. This difference is not surprising as households with sufficient financial resources to fund their own downpayments or who have family members they can turn to in times of financial need are more likely to have the ability to tap these same sources to deal with unexpected financial challenges that might otherwise lead to a foreclosure.

However, Chart 2 also shows that the foreclosure rate among HOME/ADDI-assisted buyers is also consistently lower than among borrowers relying on downpayment assistance from government agencies or nonprofits. Since the HOME/ADDI is a form of assistance from government agencies, this difference suggests that the HOME/ADDI program has generally lower foreclosure rates than other government-funded downpayment assistance efforts funded by state and local governments. The differences in foreclosure rates compared to borrowers relying on nonprofit organizations providing downpayment assistance are particularly large, with the foreclosure rate among HOME/ADDI-assisted homebuyers 40 percent lower on average.

In the remainder of this section we examine how foreclosure rates in the HOME/ADDI program vary considering specific loan characteristics including borrower, loan terms, PJ

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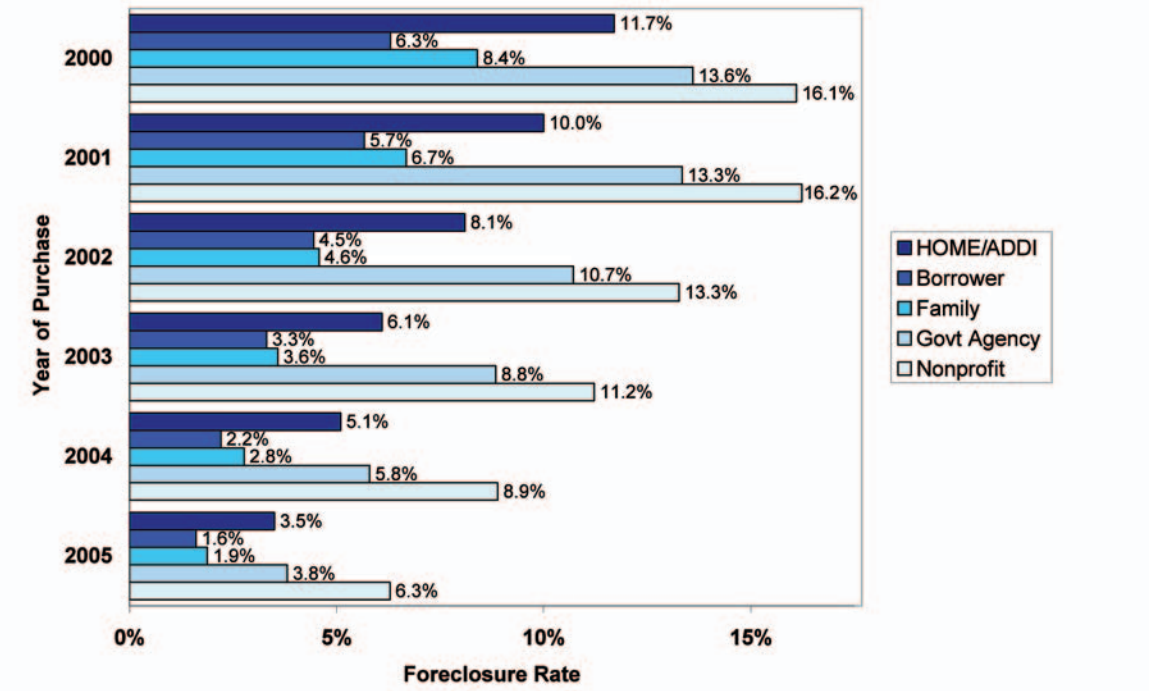
[25] See "Standards for Mortgagor's Investment in Mortgaged Property: Additional Public Comment Period," Federal Register Vol. 73, No. 116, pages 33941-33955, June 16, 2008.

[26] For a thorough discussion of this issue see "Standards for Mortgagor's Investment in Mortgaged Property: Additional Public Comment Period," Federal Register Vol. 73, No. 116, pages 33941-33955, June 16, 2008.

Chart 2: Foreclosure Rate Among FHA-Insured Homebuyers Assisted by the HOME/ADDI Programs and FHA-Insured Homebuyers Relying on Other Sources for Downpayments



Sources: HOME/ADDI Rate based on matched data from IDIS and FHA administrative data. FHA foreclosure rates by downpayment source from "Standards for Mortgagor's Investment in Mortgaged Property: Additional Public Comment Period," Federal Register Vol. 73, No. 116, pages 33941-33955, June 16, 2008 (Overall FHA rate estimated based on Table 1 and Table 4).

characteristics, and neighborhood characteristics. For this analysis we pooled data from all of the origination years in the sample data in order to examine a single HOME/ADDI foreclosure rate rather than examine foreclosure rates for individual years. In pooling the data, we opted to exclude the 2000 sample data given that the foreclosure rate appeared to be unrealistically low and so may have biased the estimated foreclosure rates downward. In comparing the results using the entire samples versus the results using the adjusted sample (2001-2005), the entire sample did not produce materially different results from those reported in the remainder of this report.

Variations in Foreclosure Rates by Borrower Characteristics

Appendix Table C-1 presents tabulations of foreclosure rates for origination years 2001 through 2005 by a variety of borrower characteristics available from the IDIS data, including race/ethnicity, household income, household type, household size, first-time homebuyer status, and whether the borrower received housing counseling. In general, there were few statistically significant differences in foreclosure rates by borrower characteristics. Table 7 presents the results for the only statistically significant differences. These were a 1.4 percentage point higher foreclosure rate among non-Hispanic blacks relative to those of "Other" races, and a 3.0 percentage point higher foreclosure rate for homebuyers that were reported to have *not* received housing counseling relative to those that did. However, the elevated level of foreclosure rate for the African American borrowers is no longer evident once other borrower and loan characteristics are controlled for in the multivariate analysis reported later in this report.

Our findings regarding household counseling should be interpreted with caution. As will be discussed in greater detail in the section on program characteristics, the housing counseling indicator in IDIS suggested that significantly fewer buyers received counseling than was reported in the PJ survey. The PJ survey indicated that more than four-fifths of buyers received counseling compared to only a little more than a quarter having this indication in IDIS. Our examination of the IDIS data revealed that prior to 2004 the vast majority of borrowers were not counseled. But beginning in 2004 a slight majority of cases were reported to receive counseling. Given that most PJs reported having had counseling requirements for some time, it is likely that the IDIS data is not accurate, particularly for years prior to 2004, likely reflecting the fact that PJs were not required to report this information in IDIS and so most chose not to. The statistically significant difference shown in Table 7 may reflect the fact that counseled borrowers were heavily concentrated in 2004 and 2005 and so had less time to experience a foreclosure than earlier origination cohorts.

Table 7:
HOME/ADDI Foreclosure Rates 2001-2005 by Key Borrower Characteristics

	Foreclosure Rate	Difference from First Category	Share of Buyers
Race/Ethnicity			
White (Non-Hispanic)	3.2%	NA	47%
African American (Non-Hispanic)	4.6%	1.4%	28%
Hispanic	3.6%	0.4%	21%
Other	1.8%	-1.4%	3%
Received Housing Counseling			
Yes	1.4%	NA	27%
No	4.4%	3.0%	73%

Note: Shaded cells indicate differences that are statistically significant at the 5% level.

Sources: Borrower characteristics from HUD's IDIS database; Foreclosure incidence from Concentrance Consulting PJ Survey.

Variations in Foreclosure Rates by Loan Terms and Financial Assistance

Appendix Table C-2 presents tabulations of foreclosure rates for origination years 2001 through 2005 by a variety of loan and financial assistance variables from the PJ survey and IDIS data. These variables include whether the primary mortgage was FHA-insured, whether the primary funding source was private or public, the amount of HOME/ADDI assistance as a share of the purchase price of the home, and the share of purchase price accounted for by the buyer's own cash contributions.

Once again, we did not find a statistically significant difference in foreclosure rates with most of these variables. Table 8 presents the primary factors that we found to be associated with variations in foreclosure rates, which were the use of FHA-insured mortgages and the share of the purchase price provided by the borrower's own funds. FHA-insured borrowers had a statistically significant higher foreclosure rate than non-FHA insured homebuyers. As will be examined in detail below, the association between FHA-insurance and higher foreclosure rates remained even after controlling for a host of borrower, programmatic, and market factors. It is not clear why FHA borrowers face a higher foreclosure risk than other homebuyers, but our hypothesis is that HOME/ADDI borrowers with poorer credit may be more likely to rely on FHA financing and so present higher risks of foreclosure.

Borrowers with Adjustable Rate Mortgages on average had higher foreclosure rates compared to other product types, although the difference was not statistically significant. In part the lack of significance reflects the fact that only a small share of the loans (2 percent) are identified as having an adjustable rate, which may reflect efforts by PJs to steer borrowers

to fixed-rate loans. However, it is also the case that PJs were unaware of whether the loan was fixed- or adjustable-rate in 24 percent of cases, although the foreclosure rate among these borrowers was even lower than among those identified as having fixed-rate loans.

We did not find a statistically significant association between higher amounts of HOME/ADDI assistance and lower foreclosure rates. Although buyers with the highest amounts of assistance as a percent of the home price did have lower foreclosure rates, these differences were not statistically significant.[27] This result may reflect the fact that PJs scale the amount of assistance provided to make the home affordable, so higher levels of assistance do not lower the risk of foreclosure. We did, however, find an association between higher levels of other types of downpayment assistance from federal, state, and local sources and lower foreclosure rates. This may reflect the fact that the layering of subsidies from different sources results in greater affordability. Finally, consistent with expectations, homebuyers with little of their own equity in the property had higher foreclosure rates. This likely reflects the fact that the greater equity in the property helps reduce monthly costs, provides a stronger incentive to maintain homeownership, and is an indication of the buyer having enough financial stability to be able to generate savings and thus deal with other financial shocks that may arise.

Table 8:
HOME/ADDI Foreclosure Rates 2001-2005 by Key Loan and Downpayment Characteristics

	Foreclosure Rate	Difference from First Category	Share of Buyers
FHA Insured			
Yes	6.0%	NA	37%
No	2.6%	-3.4%	35%
Unknown	2.1%	-3.9%	28%
Loan Type			
Fixed Rate	4.0%	NA	74%
Adjustable Rate	8.4%	4.4%	2%
Unknown	2.0%	-2.1%	24%
Total HOME/ADDI Assistance as Percent of Purchase Price			
1-5 percent	3.8%	NA	30%
5-10 percent	4.4%	0.7%	26%
10-20 percent	3.1%	-0.7%	21%
20 percent plus	3.1%	-0.7%	23%
Percent of Purchase Price			
0 percent	4.0%	NA	82%
1-10 percent	3.2%	-0.8%	7%
10 percent plus	1.0%	-3.0%	11%
Borrower's Own Equity as Percent of Purchase Price			
0 percent	4.6%	NA	35%
1-5 percent	3.2%	-1.4%	51%
5 percent plus	2.8%	-1.8%	14%

Sources: Loan characteristics from PJ Survey responses; HOME/ADDI and DPA/Borrower Cash from HUD's IDIS data.

Variations in Foreclosure Rates by PJ Characteristics

Table 9 presents tabulations of foreclosure rates for origination years 2001 through 2005 by several PJ characteristics, including type (i.e., city, consortium, county, or state), size (average annual volume of homebuyers assisted), and census region. We found some dimensions of each of these variables to be associated with variations in foreclosure rates.

In terms of PJ type, we found the lowest foreclosure rates in counties (1.07 percent) and states (2.74 percent) compared to cities (5.15 percent) and consortium (4.27 percent). The differences between these two groups were statistically significant at the 5 percent level. The

[27] Of note, while the study was intended to focus on buyers receiving downpayment assistance, 6 percent of HOME -assisted homebuyers in the sample only received support in the form of amortizing loans and so did not technically receive downpayment assistance. The multivariate analysis included an indicator for these cases, but did not find any association with differences in foreclosure rates for the PJ sample, although the risk of foreclosure was found to be higher for these buyers when only the FHA-IDIS matched data was examined.

Table 9:
HOME/ADDI Foreclosure Rates 2001-2005 by PJ Characteristics

	Foreclosure Rate	Difference from First Category	Share of Buyers
PJ Type			
City	5.15%	NA	32.2%
Consortium	4.27%	-0.9%	18.0%
County	1.07%	-4.1%	9.3%
State	2.74%	-2.4%	40.5%
PJ Size (Average Annual No. Homebuyers)			
50 or fewer	2.47%	NA	16.9%
51-400	4.22%	1.75%	55.0%
Over 400	3.17%	0.70%	28.1%
PJ Region			
Northeast	2.74%	NA	15.7%
Midwest	4.83%	2.1%	22.7%
South	3.90%	1.2%	40.3%
West	2.52%	-0.2%	21.3%

Note: Shaded cells indicate differences that are statistically significant at the 10% level.

Sources: PJ Characteristics based on tabulations of HUD's IDIS data; Foreclosure incidence from Concentrance Consulting PJ Survey.

difference between counties and states were also statistically significant. It is not clear why PJ type should be related to the rate of foreclosure, aside from issues of program scale and the amount of funding that can be offered to individual homebuyers.

In comparing PJs by the size of their homebuyer programs, we found that smaller PJs (averaging fewer than 50 homebuyers per year) had the lowest foreclosure rates, 1.75 percentage points lower than PJs averaging between 51 and 400 homebuyers per year, and 0.70 percentage points lower than the PJs averaging over 400 homebuyers a year (although only the former difference is statistically significant). The scale of the programs may indicate that PJs assisting fewer homebuyers are better positioned to screen borrowers for factors that raise the risk of foreclosure.

Finally, PJs in the Midwest were found to have experienced the highest foreclosure rates (4.83 percent), followed by the South (3.90 percent), with both the Northeast (2.74 percent) and West (2.52 percent) having much lower rates. The differences between the Midwest and both the Northeast and West was statistically significant at the 5 percent level, as was the difference between the South and the West. These differences likely reflect variations in market conditions that affect the rate of foreclosure.

Variations in Foreclosure Rates by PJ Program Characteristics

One key characteristic of PJ homebuyer programs were requirements for housing counseling. Appendix Table C-3 tabulates foreclosure rates by PJ a series of housing counseling requirements as captured by a survey of responding PJs. Table 10 shows the main finding of this analysis, which is that homebuyers that did *not* receiving counseling—as captured by this survey — had foreclosure rates that were 2.4 percentage points *lower* than those that did.

Table 10:
HOME/ADDI Foreclosure Rates 2001-2005 by Key Program Counseling Requirements

	Foreclosure Rate	Difference from First Category	Share of Buyers
Homeownership Counseling Provided			
Yes	4.0%	NA	83%
No	1.7%	-2.4%	6%
Unknown	1.6%	-2.4%	10%

Note: Shaded cells indicate differences that are statistically significant at the 10% level.

Sources: Borrower characteristics from PJ Survey responses; Foreclosure incidence from Concentrance Consulting PJ Survey.

One explanation for this counterintuitive result might be that PJs impose counseling requirements when they are serving riskier homebuyers. Or, since a large majority of PJs (83 percent) provided homeownership counseling, it may be that there was simply not enough variation in the use of counseling to find an effect. The negative finding could reflect other random factors associated with the few PJs that did not provide counseling. Finally, it may also be that PJs were unable to provide very

accurate information on the provision of housing counseling or the quality of counseling received by clients assisted up to 8 years ago.

We captured a variety of counseling details through the PJ survey, which are presented in Appendix Table C-3. But in general the pattern of which factors had a statistically significant association with lower foreclosure rates appeared to be random — with a number of cases of less intense counseling having lower foreclosure rates. In general, our results did not provide evidence of benefits of counseling, but this result likely reflects the poor quality of the data available.[28]

Table 11 presents tabulations of foreclosure rates by a series of variables from the PJ survey related to homebuyer program characteristics, including whether the PJ established any additional program eligibility requirements beyond HUD's criteria or took steps to protect buyers from poor home buying choices. Additional variables related to program eligibility and provisions to protect homebuyers that were not statistically significant are presented in Appendix Table C-4.

With regards to program eligibility requirements, the PJ survey asked whether they established any eligibility requirements other than those specified in HUD's regulations for the program. We did not find any association between a PJ establishing higher eligibility standards than HUD requirements and lower foreclosure rates. However, the PJ survey also asked whether they used FICO scores in determining eligibility for their homebuyer program. We did find that foreclosure rates were 1.5 percentage points lower when PJs use borrower credit scores to determine eligibility (Table 11).

With regard to steps taken to protect buyers from poor home buying choices, the most significant finding was that in cases where PJs relied on lenders to monitor whether interest rates charged to buyers were excessive, foreclosure rates were 2 to 3 percentage points higher. Although, at the same time, PJs that reported they did not monitor interest rates at all had the lowest foreclosure rates. This may reflect the fact that PJs did not monitor interest rates at all in cases where borrowers were known to obtain competitively priced loans—such as through state housing finance agencies.

There was also a statistically significant association between a PJ setting limits on total monthly debt to income ratios for homebuyers, although the relationship was opposite of what would be expected with *higher* debt limits associated with lower foreclosure rates. However, this characteristic was not statistically significant in the multivariate analysis and so may be correlated with other housing market or programmatic characteristics that were associated with lower foreclosure risk.[29] Finally, PJs that always reviewed appraisals to ensure that property values were reasonable had somewhat lower foreclosure rates than other PJs, but this difference was not statistically significant.

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[28] The result in Table 10 is counter to the finding shown earlier in Table 7 where counseling was associated with lower foreclosure rates. But as discussed with regards to Table 7, this finding was based on information reported by PJs in HUD's IDIS database, while Table 10 is based on information captured by the PJ survey conducted for this study. As discussed earlier, the result shown in Table 7 was likely biased by the fact that prior to 2004 almost no borrowers were reported to have received counseling in IDIS, even though the PJ survey finds that the vast majority of PJs report that counseling was, in fact, required of homebuyers prior to 2004.

[29] While the PJ survey attempted to collect the separate information on the borrowers' monthly housing payment and gross household income, the variables are missing for about half of the study sample cases. We therefore were not able to obtain statistically reliable estimates on the relationship between housing payment burden and foreclosure rates.

Table 11:
HOME/ADDI Foreclosure Rates 2001-2005 by Key Program Characteristics

	Foreclosure Rate	Difference from First Category	Share of Buyers
Imposed Additional Eligibility Requirements on Homebuyers			
Yes	3.7%	NA	64%
No	3.7%	0.1%	26%
Unknown	3.2%	-0.5%	10%
Use Credit Scores to Determine Eligibility			
Yes	2.2%	NA	12%
No	3.9%	1.8%	77%
Unknown	3.2%	1.0%	11%
Review Property Appraisal			
Always	3.5%	NA	84%
Less than always	4.4%	0.9%	7%
Missing	3.9%	0.4%	9%
Program Limit for Total Monthly Debt to Income Ratio			
Up to 41%	5.4%	NA	30%
42-46%	3.2%	-2.1%	22%
Above 46%	1.3%	-4.1%	4%
Missing	2.9%	-2.5%	44%
How Were Interest Rates Monitored to Determine if Excessive			
Published Rates	2.7%	NA	36%
Local Lender	5.0%	2.3%	27%
Relied on Loan Officer	5.7%	3.0%	11%
Did not monitor	1.2%	-1.6%	5%
Missing	2.8%	0.1%	20%
Was Informed When a Borrower Became Seriously Delinquent or at Risk of Foreclosure			
Yes	3.9%	NA	49%
No	3.6%	-0.3%	40%
Missing	2.9%	-1.0%	11%
Intervened When a borrower became Delinquent or at Risk of Foreclosure			
Yes	4.2%	NA	46%
No	3.5%	-0.9%	50%
Missing	0%	-4.2%	4%

Note: Shaded cells indicate differences that are statistically significant at the 10% level.
Sources: Program characteristics from PJ Survey responses; Foreclosure incidence from Concentrance Consulting PJ Survey.

The PJ survey also asked whether the PJs were informed when a borrower became seriously delinquent or at risk of foreclosure. If so, the PJ was then asked whether they take any intervention measures when they find out a borrower became delinquent or at risk of foreclosure. As shown in the bottom panel of Table 11, we did not find any statistical association between the responses to these two questions and foreclosure rates.[30] However, given the

[30] The survey also asked the PJs to fill in the specific intervention measures they had taken. These responses, however, were quite diverse and fairly general and so were unable to identify any meaningful categorization of the intervention measures. For example, many responses indicated in one way or another that the PJ attempted to contact the borrower to offer counseling. However, the means of contact and the form of counseling were generally not identified.

limited information on PJ's information on delinquent borrowers and intervention strategies, this result should not be interpreted to mean that early intervention among delinquent borrowers is not effective.

Examination of PJs With High Foreclosure Rates

As a further exploration of how programmatic factors might be associated with foreclosure rates, we also identified specific PJs with the highest reported foreclosure rates to see if any programmatic features stood out. Only 40 percent of the PJs that participated in the survey reported incidences of foreclosure. Among these PJs, 7 had foreclosure rates of ten percent or greater, 19 had foreclosure rate of between five and ten percent, and 16 had average foreclosure rate of less than five percent. For the seven 'high-foreclosure' PJs we re-examined program surveys to identify program differences that would explain variances in performance. This comparison showed that programmatic characteristics of PJs with high foreclosure rates did not vary greatly from characteristics of the rest of the PJs in the sample.

As was mentioned above a vast majority of all PJs provided homeownership counseling. Similarly all PJs with foreclosure rates above 10 percent provided counseling to homebuyers. Data also indicate that high-foreclosure PJs maintained counseling programs that were at least as rigorous as the programs designed by all PJs. For instance, 73 percent of homebuyers assisted by high-foreclosure PJs received more than 8 hours of counseling, compared to 45 percent for the overall sample. High-foreclosure PJs also provided counseling to a great share of their clients. All high-foreclosure PJs (100 percent) provided counseling to 75-100 percent of their clients, which is greater than the 77 percent of the overall sample.

PJs with high foreclosure rates adopted eligibility requirements comparable to the overall sample. All high foreclosure PJs had additional eligibility requirements in place such as residency in a certain geographic location or additional income limitations. For the overall sample, 58 percent of PJs had additional eligibility requirements.[31] Like the majority of all PJs, most PJs with high-foreclosure rates (86 percent) did not use credit scores to determine homebuyer eligibility.

There is also no indication that programs run by PJs with a relatively high level of foreclosures lacked provisions for homebuyer protection. Most high-foreclosure PJs (86 percent) always reviewed property appraisals to verify their reasonableness, which is slightly higher than the 81 percent for the overall sample. Also these PJ imposed more conservative limits on debt-to-income ratios: 57 percent of these PJs had a limit of 41 percentage points compared to 23 percent for the overall sample. High-foreclosure PJ used published rates, local lenders and loan officers in equal measure to monitor whether interest rates charged to buyers were excessive: each method was used by 29 percent of high-foreclosure PJs.

In summary, a closer examination of the surveys did not reveal striking programmatic differences that could explain the differences in foreclosure rates among PJs. This was also true for PJs with exceptionally low foreclosure rates (less than 5 percent).[32]

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[31] Here the share of PJs with additional eligibility requirements is weighted based on the number of homebuyers assisted.

[32] There are additional programmatic characteristics that might be associated with differences in foreclosure rates that were not available to this study; such as whether the PJ relies on subgrantees to administer their homeownership programs.

Variations in Foreclosure Rates by Neighborhood Characteristics

Table 12 presents average values for different neighborhood characteristics for homebuyers that experienced a foreclosure compared to those that did not. The characteristics we examined included a range of demographic and housing market variables from the 2000 decennial census. Of these characteristics, the only ones that exhibited a statistically significant difference between foreclosed and not-foreclosed homebuyers were the tract median income as a percent of the area median income and the percent minority. Foreclosed homebuyers were more likely to live in areas with lower incomes and with higher minority populations. However, as shown in the multivariate analysis reported in a later section of this report, these two neighborhood characteristics are not found to have an association with higher foreclosure rates once borrower, loan, and other factors are taken into account.

Table 12:
Comparison of Average Census Tract Characteristics for HOME/ADDI Assisted Homebuyers 2001-2005 by Their Foreclosure Status

Characteristic	Foreclosed	Foreclosed	Difference
Median House Value as Percent of Area Median	74.3%	77.9%	-3.6%
Median Household Income as Percent of Area Median	84.8%	89.2%	-4.4%
Percent Minority	49.1%	42.8%	6.2%
Percent College Graduates	22.2%	23.0%	-0.9%
Percent Owner Occupied	62.9%	63.7%	-0.7%
Percent Single Family Detached Housing	65.8%	64.5%	1.3%
Percent New Construction	9.1%	8.9%	0.1%
Share of Loans 2004-2006 that were High Cost	44.5%	37.4%	7.1%
Change in House Price from Post-2000 Peak	-0.5%	-1.7%	1.2%
Unemployment Rate June 2008	5.9%	6.0%	-0.1%

Note: Shaded cells indicate differences that are statistically significant at the 5% level.
Sources: Neighborhood characteristics based on tabulations of 2000 decennial census data except for high cost loan share from Home Mortgage Disclosure Act data, change in house price from OFHEO home price index, and unemployment rate from Bureau of Labor Statistics; Foreclosure incidence from Concentrance Consulting PJ Survey.

Other neighborhood measures that we examined included the share of mortgage loans originated during 2004 to 2006 that were high cost loans as reported in the HMDA data.[33, 34] Foreclosed homebuyers were found to live in areas with higher shares of high cost loans. This association may have a variety of explanations. For example, it may indicate that these buyers were more likely to have used high cost loans themselves and so faced a higher risk of foreclosure. Or the result may indicate that neighborhoods with higher high cost loan shares have had higher levels of foreclosures, which in turn have had a negative impact on local housing prices and other aspects of the neighborhood's quality of life that has decreased homebuyers' incentives to maintain homeownership.

[33] A loan record in the HMDA data is considered high cost if the "rate spread" is greater than 3 percentage points for a first lien loan or 5 percentage points for a subordinate lien loan, where the rate spread is defined as the spread between APR on a loan and the yield on Treasury securities with comparable maturity.
[34] Information was generally not available on the mortgage interest rates for HOME/ADDI homebuyers so we could not determine whether each HOME/ADDI loan was a high cost loan.

The change in the OFHEO house price index from any post-2000 peak was intended to capture whether declining home prices have contributed to foreclosures.[35] However, our findings indicated that foreclosed buyers lived in areas that had experienced less home price depreciation on average. Finally, we used the June 2008 unemployment rate to examine whether poor economic conditions had contributed to foreclosure risk, but no difference was found between foreclosed and non-foreclosed homebuyers through using this measure.

Multivariate Analysis of Foreclosure Rates

In our assessment, many of the individual variables assessed in the previous sections were probably highly correlated with each other. As a result, our examination of association between individual characteristics and foreclosure rates may have been confounded by the association of other variables with the single characteristics we examined. For example, PJs may be more likely to provide counseling when they are serving lower income homebuyers—thus, the higher foreclosure rate found above with the provision of counseling may have reflected the fact that these borrowers began the process with a greater risk of foreclosure. In this section we present the results of our multivariate regression analysis to simultaneously account for a number of the most salient borrower, loan, program, and geographic characteristics to see which factors were most strongly associated with a greater risk of foreclosure.

Specifically, we estimated a logit model where the dependent variable was 1 for homebuyers that experienced a foreclosure and 0 otherwise. We present the estimation results for each independent variable in the form of an odds ratio to assist in interpreting the magnitude of these coefficients. Odds ratios above 1 indicate the variable increased the likelihood of foreclosure while odds ratios below 1 decreased the probability of foreclosure. Appendix D provides great details regarding the interpretation of the model coefficients.

Appendix Table C-5 presents the results of the estimated logit models of the probability of foreclosure. Given the large number of variables we investigated in the univariate analysis, we generally limited the number of variables we included as explanatory variables in this analysis to those that we found to be statistically significant in the univariate analysis and those that were found to be important determinants of foreclosure in the mortgage default literature. Since this model still had a lengthy list of explanatory variables with many that were not statistically significant, a second model was estimated including only those variables that were statistically significant in the first model. The results of this second model largely confirmed the findings from the univariate analysis, with a few exceptions noted below. The variables that we found to have a statistically significant relationship with the incidence of foreclosure in the multivariate analysis included:

- Region: While the univariate analysis found that the Midwest had higher foreclosure rates than other regions, this effect was not evident in the multivariate analysis, suggesting other factors correlated with region were responsible for this association;

[35] It might be expected that the share of high cost loans and declines in home prices would have a high correlation given that high cost loans are much more likely to end in foreclosure and so contribute to falling home prices in the market. However, the home price index is measured at the metropolitan area level while the high cost loan share is measured at the census tract level, so there is not likely to be a strong correlation in these measures. In fact, the correlation between these two variables is fairly low—just 0.14 in the HOME/ADDI sample and 0.04 in the IDIS-FHA matched data.

- FHA Insured Status: Even after controlling for other variables, we still found FHA insured loans to have a probability of being foreclosed that was 2.3 times as large as for non-FHA insured buyers;
- Adjustable Rate Mortgage (ARM) Type: Compared to other mortgage product types, adjustable rate loans were 2.6 times as likely to experience a foreclosure—although only a very small share of borrowers used adjustable rate loans. ARM loans were concentrated among a few PJs (six PJs accounted for 74 percent of all ARM loans in the sample). Five PJs had more than 20 percent ARM loans in their sample and two more PJs had more than 10 percent. However, the overall foreclosure rates at these PJs was not higher than average.
- PJ Type: Consortiums and Cities were found to have the highest foreclosure rate relative to states (the reference category), with counties having the lowest rate (although not statistically different from states);
- Home purchase price (in $10,000 units): Higher prices were associated with lower foreclosure rates, but given that the odds ratio was very close to 1, the association was not large in magnitude;
- Other DPA: Buyers with downpayment assistance of more than 10 percent of the purchase price from sources other than the HOME/ADDI program had a lower risk of foreclosure relative to buyers without this type of assistance;
- Declines in house prices: Every additional 1 percent decline in house prices in the market area relative to the peak price since year 2000 increased the likelihood of foreclosure by about 9 percent;
- Higher shares of high cost loans: An increase in the high cost loan share by 1 percent is associated with an increased risk of foreclosure of 2 percent; and
- Eligibility requirements and program protections for homebuyers: Programs that set limits on homebuyers' credit scores had foreclosure rates that were 55 percent less than PJs that did not take this step, while those that relied on lenders to monitor interest rates had foreclosure rates that were 3.33 times as large as those for other PJs.[36]

There were a number of other variables we included in the logit model that were not statistically significant in the multivariate analysis. Among these were borrower and neighborhood racial composition, both of which were significant in the univarite analysis but neither of which were significant in the logit model. One of the key variables of interest was whether homebuyers receiving housing counseling were better able to sustain homeownership. We had two measures available — the indicator in the IDIS data and the PJ's survey response. In the univariate analysis, the IDIS variable suggested that counseling was associated with a reduction in foreclosure risk, while the PJ survey data found the opposite. In the logit models we first used the IDIS variable. While the odds ratio indicated that counseling does reduce the risk of foreclosure, it was not statistically significant in either Model 1 or Model 2. We did estimate models using the PJ survey variable in place of the IDIS variable but it indicated counseling increased the risk of foreclosure but was not statistically significant. Thus, the results did not provide evidence that counseling reduces foreclosure risk, but this may reflect the poor quality of the information available through IDIS and the retrospective survey of PJs.

[36] PJs that always checked appraisals also had lower risks of foreclosure than other PJs, but this effect was not statistically significant in model 2 with a shorter list of statistically significant variables.

B. Delinquency and Foreclosure Among FHA-Insured HOME/ ADDI Participants

Section Highlights

- ☑ Higher foreclosure rates among FHA-insured HOME/ADDI participants were in part due to a greater concentration of these buyers in markets with declining home prices.
- ☑ Lower shares of FHA-insured HOME/ADDI participants were assisted by PJs that use credit scores to determine program eligibility, which is consistent with the hypothesis that the FHA-insured buyers represent a riskier segment of HOME/ ADDI-assisted households.
- ☑ The cumulative risk of foreclosure of HOME/ADDI-assisted homebuyers with FHA-insured mortgages was lower for those buying homes in more recent years than earlier in this decade. Available information on delinquency rates also suggests that more recent cohorts of buyers were not experiencing higher delinquency rates, indicating that higher foreclosure rates should not be expected.
- ☑ Multivariate analysis of the risk of foreclosure among these FHA-insured homebuyers largely confirms the findings from the PJ survey regarding the factors associated with foreclosure and that more recent homebuyer cohorts face a lower risk of foreclosure.

There are two key limitations to the data we collected through the PJ survey. First, it does not provide any indication of homebuyers' mortgage delinquency status nor capture when foreclosures occurred following home purchase. This information would be a better indicator of financial distress for more recent groups of homebuyers than would foreclosures alone, which often occur at the end of a lengthy process. Second, the PJ survey and IDIS data only have a limited set of borrower and loan term variables that can be used to assess the factors associated with foreclosures. To address both limitations, we obtained more detailed data on borrower and loan characteristics as well as delinquency status for HOME/ ADDI-assisted homebuyers who used FHA-insured mortgages to purchase their homes.

With this more detailed IDIS-FHA matched data we sought to better understand the likely default risk for more recent groups of HOME/ADDI-assisted homebuyers and achieve a more complete analysis of factors that may contribute to the risk of foreclosure. In the following section we first compared HOME/ADDI-assisted homebuyers that used FHA-insured mortgages with those that did not to provide a sense of how these two groups may differ in regards to borrower, PJ, program, and neighborhood characteristics. Next, we present tabulations of foreclosure and delinquency rates by year of origin to explore whether the relative risk of these loans was increasing or decreasing over time. Finally, we present the results of a multivariate analysis of the factors associated with both foreclosure and delinquency.

Comparison of HOME/ADDI Homebuyers by Use of FHA-Insured Mortgages (Survey Data)

Table 13 compares the foreclosure rates from the PJ survey data for HOME/ADDI-assisted homebuyers that were identified as using FHA-insured mortgages with those that did not have an FHA-insured mortgage and those whose FHA-insurance status was unknown to

Table 13:
Foreclosure Rates by Origination Year and FHA-Insurance Status

	Foreclosure Rates			Share of Homebuyers		
Year of Origination	FHA-Insured	Not FHA-Insured	FHA Status Unknown	FHA-Insured	Not FHA-Insured	FHA Status Unknown
2001	9.9%	3.2%	0.9%	43%	24%	33%
2002	5.9%	5.0%	1.4%	38%	35%	27%
2003	8.7%	3.5%	2.5%	33%	29%	38%
2004	2.7%	1.5%	5.4%	34%	44%	22%
2005	2.6%	1.2%	1.1%	36%	41%	23%
All Years: 2001-2005	5.9%	2.6%	2.1%	37%	35%	28%

Sources: HUD's IDIS database and Concentrance Consulting PJ Survey.

PJs. As shown, the foreclosure rate for FHA-insured homebuyers was more than twice as high as the rate for non-FHA-insured homebuyers as well as those homebuyers whose FHA-insurance status was unknown. FHA-insured homebuyers comprised a little more than a third of the overall sample, with a similar share not having FHA insurance and a little less than 30 percent having an unknown FHA-insurance status.

The multivariate analysis presented in the previous section found that even controlling for a variety of borrower, loan, neighborhood, and PJ characteristics, FHA-insured homebuyers were more likely to experience a foreclosure than other homebuyers. Unfortunately, it was not clear from the available data why FHA-insured borrowers were more likely to be foreclosed. However, the most likely explanation is that HOME/ADDI homebuyers with poorer credit histories were more likely to have to opt for FHA rather than conventional prime mortgages. This would be consistent both with FHA's role in serving this segment of the mortgage market and with the higher foreclosure rates observed. But in interpreting the FHA foreclosure and delinquency rates presented below it is helpful to understand how FHA and other HOME/ADDI buyers differ on characteristics for which data are available.

Table 14 compares FHA, non-FHA, and unknown buyers on homebuyer characteristics that were found to have some association with foreclosure rates in the first half of this chapter. For the most part, the differences between FHA-insured and non-FHA buyers were small. The one characteristic that did show a large difference was the share of homebuyers reported in IDIS to have received counseling. Only 18 percent of FHA-insured homebuyers were identified in IDIS as receiving counseling compared to 38 percent of non-FHA-insured buyers. As described earlier, it was not clear how accurate the counseling variable is in IDIS, particularly prior to 2004, but this difference was substantial.

Table 15 compares FHA, non-FHA, and unknown buyers on selected characteristics of PJs and their homeownership programs that were found to have some association with foreclosure rates in the analysis presented in the previous part of this section. FHA-insured borrowers were more concentrated in the Midwest and South, which had higher foreclosure rates than the other regions. They were also more likely to have been assisted by City PJs, which had the highest foreclosure rates of all PJ types, but they were also more likely to be assisted by State PJs that had a lower than average foreclosure rate.

In terms of program characteristics, the two factors found to be associated with foreclosure rates were cases where PJs used credit scores to determine program eligibility and did not rely on lenders to monitor mortgage interest rates. FHA-insured borrowers did stand out as being much less likely to be assisted by PJs that used credit scores to determine program eligibility, which is consistent with the hypothesis that the FHA-insured homebuyers assisted by the HOME/ADDI programs had poorer credit histories that limited their access to prime mortgages. There were only small differences between the homebuyer categories on the other program characteristics, although FHA-insured homebuyers were slightly more likely to be assisted by PJs that relied on lenders to monitor interest rates.

Table 14:
Comparison of Borrower Characteristics for FHA-Insured and Other HOME/ADDI-Assisted Homebuyers
(Share of homebuyers)

Borrower Characteristic	FHA-Insured	Not FHA-Insured	FHA Status Unknown
First-time Homebuyer	91%	91%	80%
Received Counseling	18%	38%	24%
Borrower Income Between 60-80% of AMI	54%	47%	46%
Minority	54%	57%	47%
Single-Parent Household	30%	34%	30%
Share of All HOME/ADDI Homebuyers	37%	35%	28%

Sources: Borrower characteristics from HUD's IDIS database; Foreclosure incidence from Concentrance Consulting PJ Survey.

Table 15:
Comparison of PJ and Program Characteristics for FHA-Insured and Other HOME/ADDI-Assisted Homebuyers
(Share of homebuyers)

PJ and Program Characteristic	FHA-Insured	Not FHA-Insured	FHA Status Unknown
Region			
Northeast	4%	27%	17%
Midwest	26%	23%	18%
South	48%	40%	30%
West	22%	10%	35%
PJ Type			
City	40%	35%	19%
Consortium	6%	21%	29%
County	6%	8%	15%
State	48%	36%	37%
Program Characteristics			
Use Credit Scores for Eligibility	3%	14%	19%
Always Review Appraisal	89%	88%	73%
Rely on Lenders to Monitor Interest Rates	44%	41%	28%

Sources: Borrower characteristics from HUD's IDIS database; Foreclosure incidence from Concentrance Consulting PJ Survey.

Finally, Table 16 compares average neighborhood characteristics for FHA-insured and other homebuyers. Once again, there were few large differences in most of these characteristics across the different types of homebuyers. The one exception was the average decline in home prices from the peak achieved since the year 2000. Among FHA-insured homebuyers the average price decline was 2.3 percentage points, compared to 0.9 percentage points for non-FHA-insured homebuyers. Thus, one factor contributing to higher foreclosure rates among FHA-insured homebuyers may have been weak housing market conditions in areas where these homebuyers were concentrated.

In summary, FHA-insured homebuyers had foreclosure rates that were more than twice as high as the rates among other HOME/ADDI-assisted homebuyers. For the most part, there were few important differences among homebuyers by their FHA-insurance status. Among

Table 16:
Comparison of Neighborhood Characteristics for FHA-Insured and Other HOME/ADDI-Assisted Homebuyers
(Average value for indicated homebuyers)

Neighborhood Characteristic	FHA-Insured	Not FHA-Insured	FHA Status Unknown
Median House Value as Percent of Area Median	77%	78%	78%
Median Household Income as Percent of Area Median	91%	88%	88%
Percent Minority	44%	42%	43%
Share of Loans 2004-2006 that were High Cost	39%	38%	36%
Change in House Price from Post-2000 Peak	-2.3%	-0.9%	-1.8%

Sources: Neighborhood characteristics based on tabulations of 2000 decennial census data except for high cost loan share from Home Mortgage Disclosure Act data, change in house price from OFHEO home price index, and unemployment rate from Bureau of Labor Statistics; Foreclosure incidence from Concentrance Consulting PJ Survey.

the factors that were different, the most important seemed to be those related to geographic location, with FHA-insured homebuyers more heavily concentrated in the Midwest and South and in market areas that have experienced greater declines in home prices in recent years. FHA-insured homebuyers were also less likely to be assisted by PJs that used credit scores to determine eligibility for assistance, which was consistent with the hypothesis that higher foreclosure rates among FHA-insured homebuyers may reflect the fact that this group opts for an FHA mortgage because their access to prime credit is limited.

Foreclosure and Delinquency Rates Among HOME/ADDI-Assisted Homebuyers With FHA-Insured Mortgages (FHA-IDIS Match Data)

In this section, we turn to data on mortgage status using matched IDIS-FHA data. While the survey data identified roughly 1,800 HOME/ADDI homebuyers using FHA insurance, these matched data provide information on nearly 48,000 of these homebuyers. Chart 3 shows the cumulative foreclosure rate for FHA-insured homebuyers from the matched IDIS-FHA data. The chart shows the foreclosure rate by the number of years since origination, which provided an opportunity to assess whether more recent groups of assisted homebuyers had higher or lower foreclosure rates relative to earlier groups. As shown, homebuyers assisted in 2000 consistently had the highest foreclosure rates over time, followed by the 2001 and 2002 homebuyer cohorts. Homebuyers from 2003 through 2005 all had similar foreclosure rate trajectories that were lower than the rates experienced by the 2000 to 2002 cohorts. The trends shown in this chart suggest that foreclosure rates generally improved in the HOME/ADDI programs from 2000 through 2003. This observation is supported by the multivariate analysis of hazard of foreclosure reported in the next section where factors such as the seasoning of the loan (that is, length of time since loan origination) are taken into consideration.

Chart 4 presents the annual share of FHA-insured homebuyers in the matched IDIS-FHA data that were foreclosed by years since origination. This chart highlights the timing of foreclosures relative to when homes were purchased. For each homebuyer cohort the chart shows that foreclosure rates have peaked in the third year. Thus, annual foreclosure rates among most of these groups are already declining.

One of the reasons for examining FHA-insured homebuyers assisted by the HOME/ADDI programs was to examine delinquency rates among these loans to see whether more recent homebuyers were having difficulty meeting their mortgage obligations even if their

Chart 3:
Cumulative Foreclosure Rates Among FHA-Insured HOME/ADDI Homebuyers by Year of Origination

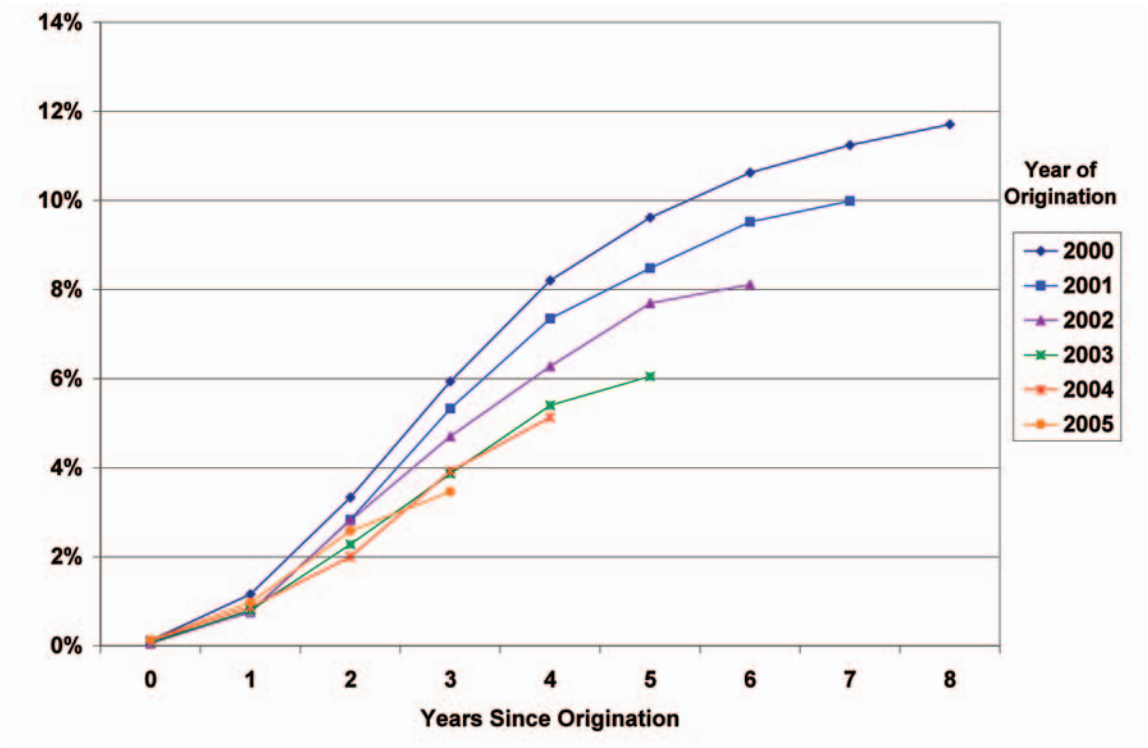
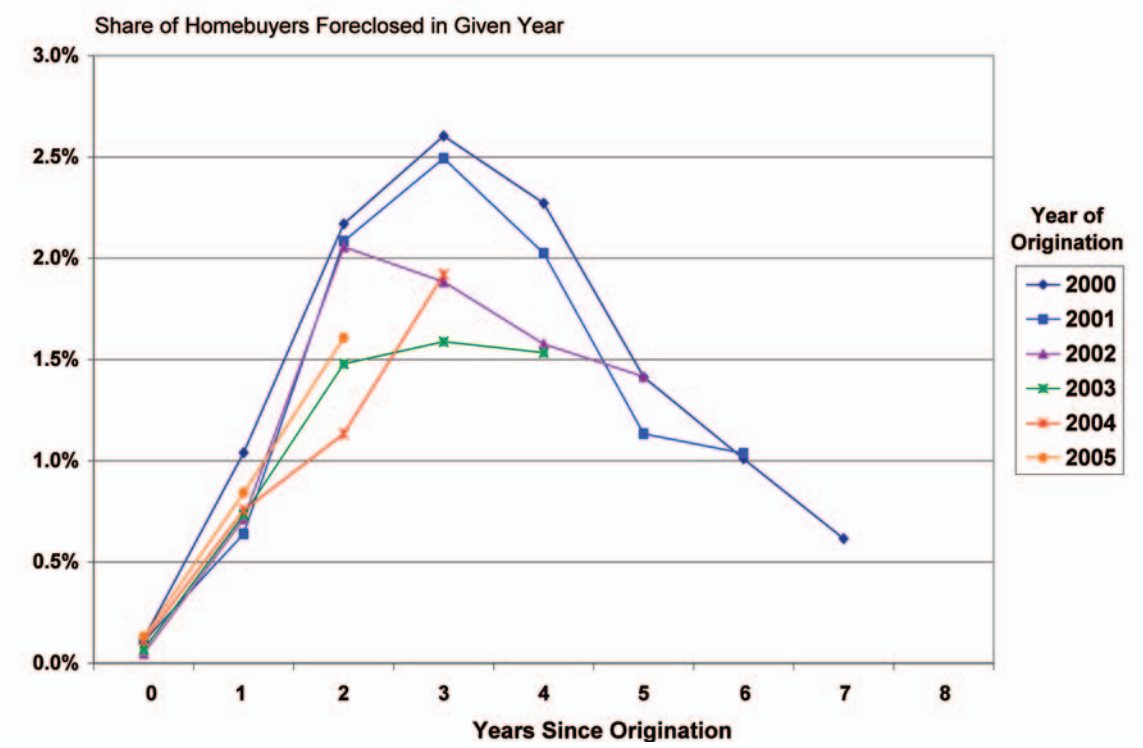


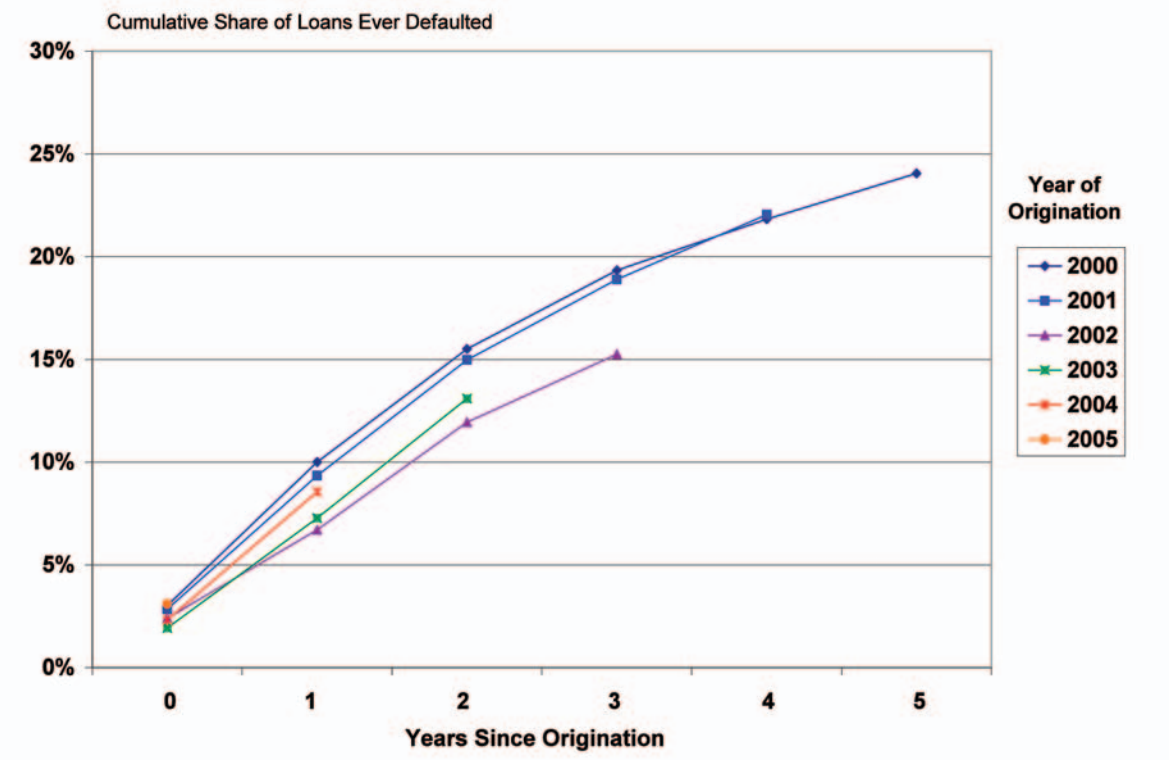
Chart 4:
Annual Foreclosure Rates Among FHA-Insured HOME/ADDI Homebuyers by Year of Origination



foreclosure rates were not yet elevated. Chart 5 presents trends in the time from origination until first default, which is defined as being 90-days delinquent. Until 2006 FHA servicers were required to report to FHA whenever a borrower became 90-days delinquent and thus had defaulted on their mortgage obligation. Beginning in 2006 FHA required servicers to report on all 30-day delinquencies to have better information on when borrowers first faced difficulties in meeting their mortgage obligations. As a result of this change, reported "defaults" rates spiked beginning in 2006 as these rates included 30-day delinquencies. In order to have a suitable comparison for time to first default for all loan cohorts, Chart 5 only reports on defaults through 2005.[37]

The trends shown in Chart 3 suggest that more recent cohorts of HOME/ADDI assisted homebuyers may actually be faring better in terms of cumulative foreclosure rates than those assisted prior to 2003. Chart 5 shows similar trends in the time to first default for these same homebuyers through 2005. The 2000 and 2001 homebuyer cohorts have experienced higher levels of first default over the life of these loans. However, while the 2002 cohort has had fairly high levels of foreclosure, it has experienced the lowest levels of first default. The other loan cohorts are in the middle. Thus, taken together, the trends in foreclosure and first

Chart 5:
Time From Origination Until First Default Among FHA-Insured HOME/ADDI Homebuyers by Year of Origination



[37] In 2006 FHA modified requirements for reporting by loan servicers on mortgage default. Previously, servicers were required to report to FHA when borrowers were 90-days delinquent and thus had defaulted on their mortgage. Beginning in 2006 FHA required servicers to report on all 30-day delinquencies to have better information on when borrowers first faced difficulties in meeting their mortgage obligations. As a result of this change, reported "default" rates spiked beginning in 2006 as these rates included 30-day delinquencies. In order to have a suitable comparison for time to first default for all loan cohorts, Chart 4 only reports on defaults through 2005.

default rates over time for these cohorts of homebuyers suggests that the risk of foreclosure was lower in more recent years than earlier in this decade.

Multivariate Analysis of the Hazard of Foreclosure

For each foreclosure case, the FHA database includes a field indicating the date when foreclosure proceedings are completed. This information allows us to model not only the incidence of foreclosure but also the timing of foreclosure.[38] The study of time (from loan origination) to foreclosure is important because it is a measure of the duration of homeownership for the assisted borrowers. This form of econometric model also takes into account differences in the period of time available to observe whether a foreclosure has occurred when estimating coefficients. For example, the model allows us to account for loans originated in 2005 where we have less than three full years over which a foreclosure could occur.

In the econometric literature, the appropriate analytic tool for this purpose is a type of regression model called a hazard or duration model.[39] The dependent variable in such a model measures the length of time (in days) from loan origination to foreclosure. The estimated coefficients reveal the independent effect of each explanatory variable on the dependent variable, in hazard ratio format.[40] For a binary indicator variable (such as gender), a hazard ratio greater than one suggests that, compared to the reference category, the presence of the borrower or loan characteristic is associated with a higher hazard or risk of foreclosure. On the other hand, if the estimated hazard ratio is less than one, it implies that the presence of the characteristic is associated with a lower hazard of foreclosure. Appendix D provides great details regarding the interpretation of the model coefficients.

In reviewing the results of the hazard model it should be noted that there are several reasons why the findings may differ from those presented earlier. First, the results are likely to differ from univariate analysis since the hazard model shows the association between a specific borrower or PJ characteristic and the risk of foreclosure while simultaneously accounting for all other variables. Second, the hazard analysis is only conducted for HOME-assisted homebuyers that received FHA insured mortgage, so the results only relate to this subset of HOME assisted buyers.

Appendix Table C-6 presents the results of the estimated proportional hazard model of foreclosure. Given the large sample size, it is not surprising that the many of the independent variables are found to have a statistically significant relationship with the probability of foreclosure. Specifically, the statistically significant variables include the following:

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[38] While we would have liked to model the time to first default, the change in FHA reporting requirements described above meant we had very limited information on the default incidence among recent cohorts of loans, so modeling time to first default would not shed much light on difference in default rates between different origination year cohorts.

[39] Specifically, we estimated a Cox proportion hazards model, which is often used in the housing finance literature to study factors associated with the onset of mortgage default and foreclosure.

[40] The hazard of foreclosure is a measure of the risk of foreclosure over a fixed time interval.

HAZARD LEVEL	VARIABLE EXPLANATION
	**Origination cohort:** Compared to the older cohorts, the **more recent cohorts** of borrowers had a lower hazard of foreclosure and therefore a longer duration of homeownership, after controlling for the fact that the more recent cohorts had a shorter observation period. In other words, the recent cohorts appeared to include less risky loans even after controlling for all of the other explanatory variables listed. This finding is consistent with the results presented in Chart 2. For example, the model indicates that the hazard rate of foreclosure for borrowers in the 2005 cohort was 72.8 percent of the hazard rate of borrowers in the 2000 cohort.
	**Region:** Borrowers located in the **Northeast and the West** had a lower hazard of foreclosure, with the Midwest being the reference in this comparison.
	**Mortgage-payment-to-income ratio:** Consistent with our expectation, borrower's payment-to-income burden was positively correlated with the hazard of foreclosure. The **higher the ratio**, the greater chance of foreclosure. A 1 percentage point increase in the ratio was associated with a 1 percentage point increase in foreclosure risk.
	**Borrower age:** All else being equal, **older borrowers** had a lower risk of foreclosure. Each additional year increase in the borrower's age was associated with a 2 percent decrease in the hazard of foreclosure.
	**Gender: Female** borrowers had a lower hazard of foreclosure.
	**Marital status:** Compared to the never-married borrowers with similar characteristics, **married couples** had a lower hazard of foreclosure.
	**Race:** Compared to Non-Hispanic White borrowers, **Hispanics and borrowers of "Other" race** had a lower hazard of foreclosure and thus a longer homeownership duration.[41, 42]

[41] "Other" race includes Native American, Asian, and Alaska Native.

[42] The finding that Hispanics had a lower risk of foreclosure than whites is somewhat unexpected. A possible explanation is that the lower foreclosure risk for this group of borrowers reflects other characteristics (in particular, credit scores and location in specific states) that are not captured in our model.

HAZARD LEVEL	VARIABLE EXPLANATION
	**Property type:** Assisted borrowers who purchased **newly constructed homes** with the HOME/ADDI funds experienced a lower risk of foreclosure (27 percent smaller in terms of hazard rate for borrowers who acquired existing homes).
	**Borrower income relative to area median income:** All else being equal, homeowners whose **incomes were high relative to the area median** had a lower hazard of foreclosure.
	**PJ type:** Controlling for other characteristics, borrowers assisted by **city PJs** on average had a higher hazard of foreclosure and therefore a shorter duration of homeownership.
	**PJ program size:** The foreclosure hazard rate was higher for **large PJs** (defined as those with on average 400+ borrowers over the study period). [43] On the other hand, small PJs (defined as those with fewer than 50 borrowers) had a lower hazard of foreclosure, although this difference was not statistically significant.
	**Declines in house prices: Declines in house prices** relative to peak price since 2000 were associated with an increased hazard of foreclosure for the borrowers.
	**Share of high cost loans in Census tract:** A 1-percent **increase in the share of high cost loans in the neighborhood** was associated with a 2 percent increase in hazard of foreclosure.
	**Household income in Census tract relative to area median income:** Neighborhood income level was negatively correlated with hazard of foreclosure. The **lower the income**, the higher the risk of foreclosure.
	**Percent racial minorities in Census tract:** Every 1-percent **increase in the share of racial minorities** in a neighborhood was associated with a 1 percent reduction in the hazard rate of foreclosure.
	**Number of dependents in the borrower's household:** Holding other factors constant, **borrowers with more dependents** in household had elevated risk of foreclosure. Each additional dependent increased the hazard of foreclosure by 14 percent.

[43] This result is different from the finding in Table 9 where PJs with 51-400 borrowers had the highest foreclosure rate. This discrepancy is due to different analysis methods used. Results in table 9 are based on univariate analysis, while the finding above is based on multivariate analysis which controls for a greater number of variables.

HAZARD LEVEL	VARIABLE EXPLANATION
	**Gift funds from nonprofit organizations:** The hazard of foreclosure was higher (by 24 percent) for **borrowers who received gift funds from nonprofit agencies.**
	**Borrower's Equity:** Homebuyers with none of their own funds invested in the home had a 20 percent higher foreclosure hazard.
	**Level of HOME/ADDI Assistance:** Buyers with HOME/ADDI assistance of more than 20 percent of the purchase price had a 22 percent lower foreclosure hazard.
	**Form of HOME Assistance:** Buyers who only received HOME assistance in the form of an amortizing loan compared to a grant or a deferred payment loan had a 20 percent higher foreclosure hazard.

Among the variables that were not statistically significant included those related to the Loan to Value (LTV) ratio, the size of the mortgage, the unemployment rate, and whether the borrower received counseling (as indicated in the IDIS data). In general, the results are quite consistent with the multivariate analysis of the PJ survey data. The primary additional insight that comes from this analysis is that since 2000 the risk of foreclosure has been declining for successive cohorts of homebuyers through the HOME/ADDI program.

IV. SUMMARY AND CONCLUSIONS

The principal finding of this study is that, in comparison to relevant market benchmarks, foreclosure rates among homebuyers assisted through the HOME/ADDI programs are not excessive. In comparison to FHA-insured homebuyers overall, who comprise a similar population of lower-income first-time homebuyers, foreclosure rates in the HOME/ADDI program are consistently lower for all those assisted between 2001 and 2005. Over this period, the HOME/ADDI foreclosure rate is estimated to be 1.2 percentage points less (or 25 percent lower) than the rate among FHA-insured borrowers overall. Considering homebuyers assisted in 2001—those with the longest period of observation — the HOME/ADDI foreclosure rate as of early 2008 is estimated to be 5.3 percent. In comparison, the rate for FHA-insured loans overall was 6.5 percent. Based on information gathered by the Mortgage Banker's Association Mortgage Delinquency Survey, both of these rates appear to be substantially below the foreclosure rates experienced in the sub-prime market. The conclusion of this study is that the HOME/ADDI program has been successful at helping low-income families to achieve *and sustain* homeownership.

As a test of the accuracy of the foreclosure rates reported by PJs, the subset of FHA-insured borrowers among the study sample were identified in FHA's own administrative data to see how FHA's foreclosure rate compared to the rate reported by PJs. This comparison found that for each year between 2001 and 2005 the foreclosure rate found in FHA's administrative data was contained within the 95-percent confidence interval surrounding the PJ reported foreclosure rate, meaning that the variations between these two measures were likely due to normal sampling variation. Of the five estimated foreclosure rates for borrowers assisted in 2001 through 2005, 3 were lower than the rate in FHA's data and 2 were higher. On average across all five years, the PJ reported foreclosure rates were 9 percent lower than the FHA reported rate. Even if the PJ estimates of the overall foreclosure rate among HOME/ADDI-assisted borrowers were increased by 9 percent, these rates would still be lower than the rate among all FHA-insured borrowers.

Using the matched FHA-IDIS data, foreclosure rates experienced among FHA-insured homebuyers benefiting from HOME/ADDI assistance were also compared with the rates among FHA-insured borrowers relying on other sources of downpayment assistance. HOME/ADDI-assisted buyers did have higher foreclosure rates than buyers who relied on their own funds or family members for their downpayment, likely reflecting the stronger financial position of these buyers. But HOME/ADDI-assisted buyers had lower foreclosure rates than buyers receiving downpayment assistance from government agencies generally as well as those getting their downpayments through nonprofit agencies, which consist largely of so-called seller-funded downpayment programs. Seller-funded downpayment assistance has been associated with very high foreclosure rates. In comparison, the foreclosure rates among HOME/ADDI-assisted buyers are on average 40 percent lower.

This study also examined programmatic circumstances that contributed to higher or lower foreclosure rates. The PJ survey gathered a variety of information on the use of counseling to prepare homebuyers for the responsibilities of homeownership, the use of eligibility criteria beyond those required by HOME program regulations, and program features that were designed to protect program participants from making poor homebuying decisions. For

the most part, we found little statistically significant variation in foreclosure rates with homebuyer program characteristics. This may well reflect the fact that, as foreclosure rates were low for the HOME/ADDI program, there was little variation to explain. To the extent that some PJs experienced higher foreclosure rates than others, these differences may be largely attributable to differences in market conditions rather than how PJs operate their homebuyer programs. Nonetheless, both univariate and multivariate analysis did find some reduction in foreclosure rates when PJs imposed eligibility requirements related to credit scores and did not rely on lenders to monitor for excessive interest rates. The analysis also found that homebuyers who had greater equity in their homes through downpayment assistance and borrower cash experienced lower foreclosure rates. Thus, programs that are able to provide deeper levels of subsidy for homebuyers may also reduce the risk of foreclosure.

Housing counseling is one of the key approaches employed in the HOME/ADDI program to help participants prepare for homeownership. However, our analysis was unable to find any statistically significant association between the receipt of counseling and lower risk of foreclosure. In part, this may reflect the limitations of the two measures of counseling available — one reported in HUD's IDIS data at the time buyers are assisted and the other gathered through the PJ survey. The IDIS variable was largely not used prior to 2004 and so is only available for a limited period of time. It is also not known how accurate the field is even in 2004 and 2005 as this information is not central to the purpose of the IDIS system, which is to track expenditures through HUD grant programs. There was a weak association found between this indicator of counseling and lower foreclosure risk, but the result was not statistically significant. The PJ survey information is also likely to be prone to error as the survey sought retrospective information about homebuyers assisted up to eight years earlier. Current PJ staff had limited ability to share historic information on program administration nuances due to inevitable staff turnover and loss of institutional knowledge. The information gathered through the PJ survey showed that homebuyers reported to have been counseled were *more* likely to experience a foreclosure, but this association was not statistically significant in the multivariate analysis. In short, the study did not provide any evidence that counseling reduces the risk of foreclosure, but this conclusion is by no means definitive, given data limitations.

One of the factors most strongly associated with higher foreclosure rates among HOME/ADDI-assisted homebuyers was the use of FHA-insured mortgages. There were few important differences between the characteristics of homebuyers who had FHA-insured mortgages and those who did not. There were some significant differences in the geographic locations of FHA-insured homebuyers, who were more concentrated in the Midwest and South (where foreclosures were generally higher), in census tracts that experienced declines in home prices in recent years, and in census tracts with high shares of high cost mortgages. But even when controlling for these differences, FHA-insured homebuyers were still found to have higher foreclosure rates. Our hypothesis is that HOME/ADDI-assisted homebuyers who had poorer credit histories were more likely to have to rely on FHA-insured mortgages rather than prime mortgages. In this case, the higher foreclosure rates among FHA-insured homebuyers would simply reflect the fact that these were riskier buyers than other HOME/ADDI-assisted buyers. One result that is consistent with this hypothesis is the finding that FHA-insured homebuyers were less likely to have been assisted by PJs that used credit scores to determine program eligibility. Notably, even though FHA-insured HOME/ADDI-assisted homebuyers had higher foreclosure rates than other HOME/ADDI-assisted homebuyers,

their foreclosure rate was still much lower than the rates experienced by buyers using seller-provided downpayment assistance and only slightly higher than the foreclosure rates of the overall FHA-insured portfolio.

The study also analyzed data on all FHA-insured homebuyers who could be matched to HUD's IDIS data to explore trends over time in foreclosure and delinquency rates for different cohorts of assisted-homebuyers by year of home purchase. This analysis found that, controlling for the time exposed to default risk, homebuyers assisted in 2003 through 2005 were experiencing lower foreclosure rates than those assisted in 2000 through 2002. This finding suggests that the HOME/ADDI program was not experiencing an increase in foreclosure risk, in the first part of this decade, unlike the rest of the mortgage market. Information on delinquency rates also suggests that there has not been any increase in financial distress among these homebuyers in more recent years. The multivariate analysis of the matched IDIS-FHA data confirmed a number of findings from the analysis of PJ survey data, with the primary additional insight being that since 2000 each successive cohort of HOME/ADDI-assisted homebuyers has experienced a lower risk of foreclosure.

Overall, the findings from this study suggest that the HOME/ADDI program has been fairly successful at fostering sustainable homeownership for low-income families and individuals. Unfortunately, the results do not shed much light on the specific approaches taken by PJs to reduce foreclosure risk—although this may primarily reflect the fact that overall the risk of foreclosure throughout the program is quite low and that most PJs that are operating homebuyer programs are doing a good job of fostering sustainable homeownership. Further research focused specifically on programmatic approaches to reduce foreclosure risk would allow for a more in-depth look at the effect of those processes on delinquency and default rates.