

June 2012

FORECLOSURE MITIGATION

Agencies Could Improve Effectiveness of Federal Efforts with Additional Data Collection and Analysis



Why GAO Did This Study

Historically high foreclosure rates remain a major barrier to the current economic recovery. To assist policymakers and housing market participants in evaluating foreclosure mitigation efforts, GAO examined (1) the federal and nonfederal response to the housing crisis, (2) the current condition of the U.S. housing market, and (3) opportunities to enhance federal efforts. To address these objectives, GAO analyzed government and mortgage industry data, including loan-level data purchased from a private vendor; reviewed academic and industry literature; examined federal policies and regulations; and interviewed housing industry participants and observers.

What GAO Recommends

GAO recommends that: Treasury reevaluate the need for its financial support of FHA's refinance program; USDA increase its efforts to monitor servicers' outreach to struggling borrowers; FHA, VA, and USDA collect and analyze information needed to fully assess the effectiveness and costs of their foreclosure mitigation efforts; and FHFA expeditiously finalize analysis on whether to allow the enterprises to offer HAMP principal forgiveness modifications.

Treasury, FHA, VA and FHFA agreed to consider or concurred with the report's recommendations. USDA provided additional information in its comments. In response, we clarified the text and recommendation on USDA's monitoring of servicers' outreach efforts.

View [GAO-12-296](#) or [key components](#). For more information, contact Mathew J. Scire at (202) 512-8678 or sciremj@gao.gov.

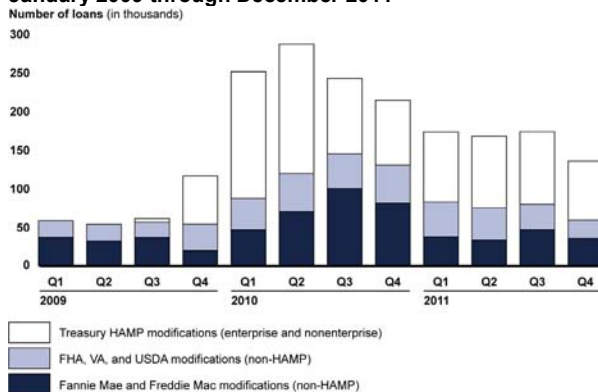
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What GAO Found

In an effort to help the millions of homeowners struggling to keep their homes, a range of federal programs have offered relief in the form of loan modifications and refinancing into loans with lower interest rates, among other things. Under Treasury's Home Affordable Modification Program (HAMP), initiated in early 2009, servicers have modified almost 1 million loans between 2009 and 2011. During the same period, servicers modified nearly 1 million additional loans under programs administered by the Departments of Agriculture (USDA) and Veterans Affairs (VA), Federal Housing Administration (FHA), and Fannie Mae and Freddie Mac (the enterprises). Servicers have also modified about 2.1 million loans under nonfederal loan modification programs resulting in a total of about 4 million modifications between 2009 and 2011. However, a large number of borrowers have sought assistance, but were unable to receive a modification. For example, approximately 2.8 million borrowers had their HAMP loan modification application denied or their trial loan modification canceled. Further, the volume of federal modifications has declined since 2010 (see figure below). Recent efforts have expanded refinancing programs. However, low participation rates in FHA's program raise questions about the need for Treasury's financial support, which could reach a maximum of \$117 million.

Total Permanent Loan Modifications through Federal, Fannie Mae, and Freddie Mac Programs, January 2009 through December 2011



Note: Data used were the most currently available from the agencies and enterprises.

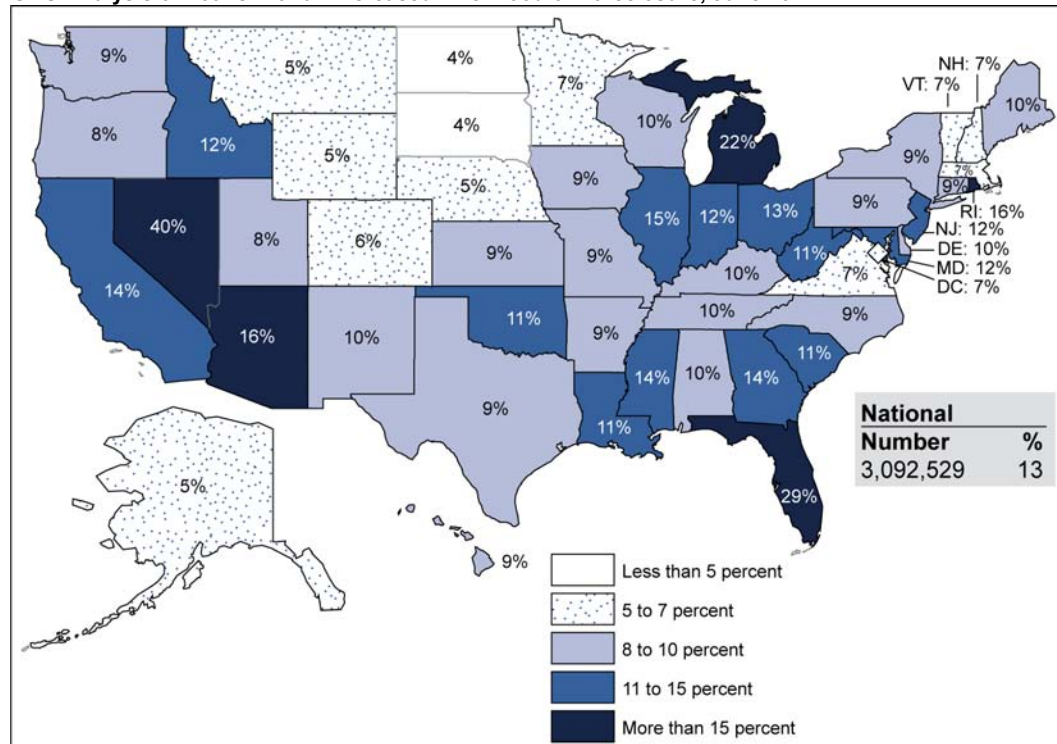
In spite of these efforts, the number of loans in foreclosure remains elevated, and key indicators suggest that the U.S. housing market remains weak. GAO's analysis of mortgage data showed that in June 2011 (most current data available for GAO's use and analysis) between 1.9 and 3 million loans still had characteristics associated with an increased likelihood of foreclosure, such as serious delinquency and significant negative equity (a loan-to-value ratio of

125 percent or greater). These loans were concentrated in certain states, such as Nevada and Florida (see figure below). Further, more recent indicators such as home prices and home equity remain near their postbubble lows. As of December 2011, total household mortgage debt was \$3.7 trillion greater than households' equity in their homes—representing a significant decline in household wealth nationwide.

Despite the scope of the problem, most stakeholders GAO interviewed said that enhancing current foreclosure mitigation efforts would be preferable to new ones. GAO found that agencies could take steps to make their programs more effective. Collectively, FHA and the enterprises had 1.8 million loans in their portfolios that were 90 days or more past due as of December 2011. GAO found that most of the agencies and enterprises, with the exception of USDA, had stepped up their efforts to monitor servicers' outreach to struggling borrowers. However, not all the agencies were conducting analyses to determine the effectiveness of their foreclosure mitigation actions. Experiences of Treasury and the enterprises and GAO's econometric analysis strongly suggest that such analyses can improve outcomes and cut program costs. For example, GAO's analysis showed that the size of payment change,

delinquency status, and current loan to value ratio, can significantly influence the success of the foreclosure mitigation action taken. In contrast, not all federal agencies consider redefault rates and long-term costs when deciding which loan modification action to take. Nor have they assessed the impact of loan and borrower characteristics. In some cases, agencies do not have the data needed to conduct these analyses. GAO found some evidence to suggest that principal forgiveness could help some homeowners—those with significant negative equity—stay in their homes, but federal agencies and the enterprises were not using it consistently and some were not convinced of its merits. In addition, there are other policy issues to consider in how widely this option should be used, such as moral hazard. The Federal Housing Finance Agency (FHFA), for instance, has not allowed the enterprises to offer principal forgiveness. Treasury recently offered to pay incentives to the enterprises to forgive principal, and FHFA is re-evaluating its position. Until agencies and the enterprises analyze data that will help them choose the most effective tools and fully utilize those that have proved effective, foreclosure mitigation programs cannot provide the optimal assistance to struggling homeowners or help curtail the costs of the foreclosure crisis to taxpayers.

GAO Analysis of Loans with an Increased Likelihood of Foreclosure, June 2011



Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey; map (MapInfo).

Note: Loans with an increased likelihood of foreclosure include loans 60 days or more delinquent plus loans less than 60 days delinquent (including current loans) with two or more of the following risk characteristics—current loan-to-value (LTV) ratio of 125 percent or higher; current LTV ratio of 125 percent or higher and local unemployment rate of 10 percent or higher; interest rate 1.5 percentage points or greater above the market rate; and certain origination loan features (credit score of 619 or below or LTV ratio of 100 percent or higher). Data used was the most currently available to GAO.

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Abbreviations

CBO	Congressional Budget Office
CFPB	Consumer Financial Protection Bureau
DIL	deed-in-lieu
EESA	Emergency Economic Stabilization Act
EHLP	Emergency Homeowners' Loan Program
Fannie Mae	Federal National Mortgage Association
Freddie Mac	Federal Home Loan Mortgage Corporation
FDIC	Federal Deposit Insurance Corporation
FHA	Federal Housing Administration
FHFA	Federal Housing Finance Agency
HAFA	Home Affordable Foreclosure Alternatives
HAMP	Home Affordable Modification Program
HARP	Home Affordable Refinance Program
HHF	Hardest Hit Fund
HUD	Department of Housing and Urban Development
LTV	loan-to-value
MBA	Mortgage Bankers Association
MBS	mortgage-backed securities
MHA	Making Home Affordable
NPV	net present value
OCC	Office of the Comptroller of the Currency
PRA	Principal Reduction Alternative
RD-HAMP	Rural Development-Home Affordable Modification Program
RMBS	residential mortgage-backed securities
TARP	Troubled Asset Relief Program
Treasury	Department of the Treasury
UP	Home Affordable Unemployment Program
USDA	Department of Agriculture
VA	Department of Veterans Affairs

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United States Government Accountability Office
Washington, DC 20548

June 28, 2012

Congressional Addressees

Problems in the housing market associated with historically high delinquencies and foreclosures remain a key hurdle to recovery from the current U.S. economic slowdown. The Emergency Economic Stabilization Act of 2008 (EESA) provided the Department of the Treasury (Treasury) with \$700 billion to use under the Troubled Asset Relief Program (TARP) to, among other things, preserve homeownership, prevent avoidable foreclosures, and protect home values.¹ Since EESA's passage, a series of congressional acts and initiatives introduced by the administration have expanded federal efforts to mitigate foreclosures. The centerpiece of these efforts has been the 2009 Home Affordable Modification Program (HAMP), which is being implemented by Treasury's Office of Homeownership Preservation. Foreclosure mitigation programs administered by other federal agencies, such as the U.S. Department of Housing and Urban Development (HUD) as well as Fannie Mae and Freddie Mac (the enterprises), have continued and in many cases have been expanded. In addition, state and local governments, nonprofits, and mortgage lenders and servicers have initiated programs to mitigate foreclosures. Loan modification programs have been a key component of both federal and nonfederal mitigation efforts to moderate the foreclosure crisis. Limited research is available on the effectiveness of these efforts, however, and the probability of loans remaining current after a modification is not well understood. Information on the outcome of these efforts is central to helping ensure that federal foreclosure mitigation programs efficiently and effectively preserve homeownership, prevent avoidable foreclosures, and protect home values.

¹Pub. L. No 110-343, 122 Stat. 3765 (2008), codified at 12 U.S.C §§ 5201 et seq. EESA required the Federal Housing Finance Agency, the Federal Deposit Insurance Corporation (FDIC), and the Board of Governors of the Federal Reserve System and Federal Reserve Banks (Federal Reserve System) to implement a plan to maximize assistance to homeowners—for example, by reducing interest rates and principal on residential mortgages or mortgage-backed securities owned or managed by these institutions. EESA originally authorized Treasury to purchase or guarantee up to \$700 billion in troubled assets. The Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, Pub. L. No. 111-203, 124 Stat. 1376 (2010), (1) reduced Treasury's authority to purchase or insure troubled assets to a maximum of \$475 billion and (2) prohibited Treasury, under EESA, from incurring any additional obligations for a program or initiative unless the program or initiative had already been initiated prior to June 25, 2010.

This report is based upon our continuing analysis and monitoring of Treasury's activities in implementing EESA, which provided us with broad oversight authorities for actions taken under TARP and required that we report at least every 60 days on TARP activities and performance.² To fulfill our statutorily mandated responsibilities, we have been monitoring and providing updates on TARP programs, including HAMP, and this report expands on that work.³ In addition, to assist policymakers and housing market participants in evaluating the impact and effectiveness of current federal foreclosure mitigation efforts, we examined (1) the federal and nonfederal response to the foreclosure crisis, (2) the number of loans potentially at risk of foreclosure and the current condition of the U.S. housing market, and (3) opportunities to enhance the effectiveness of current foreclosure mitigation efforts.

To examine the response to the foreclosure crisis, we looked at programs administered by Treasury; HUD; the U.S. Departments of Agriculture (USDA) and Veterans Affairs (VA); and two housing government-sponsored enterprises (the enterprises)—the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). We identified and reviewed each program's purpose as well as the associated statutes, regulations, requirements, and guidance. We obtained summary data from Treasury, HUD, USDA, VA and the enterprises and reviewed selected reports to identify, among other things, costs associated with these efforts. We also reviewed reports issued by these agencies, the enterprises, and the Federal Housing Finance Agency (FHFA) that describe the volume, characteristics, performance, and costs of foreclosure mitigation efforts and actions that occurred for the period of January 2009 through December 2011.⁴ We did not independently confirm the accuracy of the

²Section 116 of EESA, 122 Stat. at 3783 (codified at 12 U.S.C. § 5226).

³See, for example, GAO, *Troubled Asset Relief Program: As Treasury Continues to Exit Programs, Opportunities to Enhance Communication on Costs Exist*, [GAO-12-229](#) (Washington, D.C.: Jan. 9, 2012); *Troubled Asset Relief Program: Treasury Continues to Face Implementation Challenges and Data Weaknesses in Its Making Home Affordable Program*, [GAO-11-288](#) (Washington, D.C.: Mar. 17, 2011); and *Troubled Asset Relief Program: Status of Programs and Implementation of GAO Recommendations*, [GAO-11-74](#) (Washington, D.C.: Jan. 12, 2011).

⁴The December 2011 cutoff represented the most recent comprehensive data that the agencies and enterprises could collectively provide and for which we could complete our data processing and reliability steps within the time frame of our review.

summary data we obtained. However, we took steps to ensure that the data we used were sufficiently reliable for our purposes, such as interviewing officials familiar with the data and corroborating key information.

To further examine the federal and nonfederal response to the housing foreclosure crisis, we analyzed loan-level servicing data we obtained from CoreLogic, Inc.⁵ These data provide wide coverage of the entire mortgage market—approximately 65 percent to 70 percent of prime loans and about 50 percent of subprime loans, according to CoreLogic officials. Due to the proprietary nature of CoreLogic’s estimates of its market coverage, we could not directly assess the reliability of these estimates. However, we have used CoreLogic data in prior reports in which we concluded that the data we used were sufficiently reliable for our purposes.⁶ Nevertheless, because of limitations in the coverage and completeness of the data, our analysis may not be representative of the mortgage market as a whole. For this engagement, we reviewed documentation on the process CoreLogic used to collect its data. We discussed this process and the interpretation of different data fields with CoreLogic representatives. In addition, we conducted reasonableness checks on data elements to identify any missing, erroneous, or outlying data. We concluded that the data we used were sufficiently reliable for our purposes.

We restricted our analysis to first-lien mortgages for the purchase or the refinancing of one-to-four family houses located in the 50 states and the District of Columbia that were active during the period from January 2007 through June 2011.⁷ Although this data set did not contain direct information about the presence of modifications, we developed a set of algorithms to infer if a loan had been modified. We confirmed the accuracy of our algorithms by using our methodology to analyze data provided by the Office of the Comptroller of the Currency (OCC) that

⁵CoreLogic is a private company that provides data, analytics, technology, and services related to the mortgage industry, among other things.

⁶For example, see GAO, *Mortgage Reform: Potential Impacts of Provisions in the Dodd-Frank Act on Homebuyers and the Mortgage Market*, [GAO-11-656](#) (Washington, D.C.: July 19, 2011).

⁷The June 2011 data were the most recent CoreLogic data for which we could complete our data processing and reliability steps within the time frame of our review.

included known modifications (see app. III for a more detailed discussion of our approach). We conducted analyses on a 15 percent random sample of the CoreLogic data set to examine the volume, characteristics, and performance of loan modifications executed by both federal and nonfederal programs.

To examine the extent to which loans were associated with an increased likelihood of foreclosure, we identified key characteristics associated with an increased likelihood of foreclosure by reviewing our prior work and other studies, and interviewing housing market participants and observers. These included housing market trade associations, such as the Mortgage Bankers Association (MBA), Center for Responsible Lending, National Association of Consumer Advocates, Amherst Securities, NeighborWorks America, HOPE NOW, and the National Community Reinvestment Coalition. Further, we conducted additional analyses on the full CoreLogic data set (not a sample). Again, we took steps to ensure that the data we used were sufficiently reliable for our purposes, such as conducting reasonableness checks on data elements. To examine the current condition of the U.S. housing market, we identified and analyzed key national indicators. To identify the indicators, we reviewed a wide range of publically available information and interviewed housing market participants and observers. To describe the indicators, we reviewed information in several publicly available reports.

To examine opportunities to enhance the effectiveness of current foreclosure mitigation efforts, we identified and reviewed the goals of federal foreclosure mitigation efforts as well as statutes, requirements, and guidance associated with these efforts. To describe the costs associated with federal efforts and specific foreclosure mitigation actions we obtained summary data from Treasury, HUD, USDA, VA and the enterprises. Again, we did not independently confirm the accuracy of the summary data we obtained. However, we took steps to ensure that the data we used were sufficiently reliable for our purposes, such as interviewing officials familiar with the data. We also reviewed relevant principles of federal budgeting that resulted from federal credit reform. We also obtained viewpoints from a wide range of housing market participants and observers. For example, we met with officials from Treasury, HUD, FHFA, Fannie Mae, Freddie Mac, VA, and USDA to understand their foreclosure mitigation efforts. Further, we conducted an econometric analysis of redefault among modified loans by analyzing a sample of loan-level data we obtained from CoreLogic as well as loan-level data we obtained from Treasury on HAMP loans. Again, we took steps to ensure that the data we used were sufficiently reliable for our

purposes, such as conducting reasonableness checks on data elements. Appendix V contains a detailed summary of the methodology for this analysis as well as the results.

We conducted this performance audit from October 2010 through June 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on the audit objectives. For additional information on our scope and methodology, see appendix I.

Background

Current Housing Situation

As we previously reported, factors such as a rapid decline in home prices throughout much of the nation, weak regional labor market conditions in some states where foreclosure rates were already elevated, along with the legacy of eased underwriting standards, wider use of certain loan features associated with poorer loan performance, and growth in the market for private label residential mortgage-backed securities, contributed to the increase in loan defaults and foreclosures beginning in late 2006.⁸ The nation's economy was in recession between December 2007 and June 2009. During this period, the elevated unemployment rate and declining home prices worsened the financial circumstances for many families and, with it, their ability to make their mortgage payments. Analysis by federal agencies, the Federal Reserve System, and housing market observers attribute the continued increase in foreclosures between 2008 and 2011 to several factors, including, continued depreciation in home values, elevated numbers of unemployed

⁸GAO, *Information on Recent Default and Foreclosure Trends for Home Mortgages and Associated Economic and Market Developments*, [GAO-08-78R](#) (Washington, D.C.: Oct. 16, 2007).

nationwide, and weaknesses in the servicing industry's response to the large number of delinquent borrowers.⁹

The Mortgage Market

When individuals purchase residential real property with borrowed funds, they usually enter into a contractual agreement in which they agree, among other things, to make payments to the originating lender for a period of time. To secure their debt, lenders obtain a lien on the underlying property as collateral against borrower default. The lien holder has the right to seize the property should the borrower fail to pay. The residential mortgage market can be divided into several loosely defined segments that are determined, in part, by a borrower's credit quality.

- Prime mortgages are made to borrowers with strong credit histories and provide the most competitive interest rates and mortgage terms.
- Near-prime mortgages (also called Alt-A mortgages) generally serve borrowers whose credit histories are close to prime, but the loans often have one or more high-risk features such as limited documentation of income or assets.
- Subprime mortgages are generally made to borrowers with blemished credit and feature higher interest rates and fees than the prime and near-prime markets.
- Government-insured or government-guaranteed mortgages primarily serve borrowers who may have difficulty qualifying for prime mortgages. These mortgages generally feature interest rates competitive with prime loans, but borrowers must purchase mortgage insurance or pay guarantee fees. HUD's Federal Housing

⁹Board of Governors of the Federal Reserve System, *The U.S. Housing Market: Current Conditions and Policy Considerations* (Washington, D.C.: Jan. 4, 2012.); Janet L. Yellen, "Housing Market Development and Their Effects on Low- and Moderate-Income Neighborhoods" (remarks delivered at 2011 Federal Reserve Bank of Cleveland Policy Summit, Cleveland, Ohio: June 9, 2011); The Joint Center for Housing Studies at Harvard University, *The State of the Nation's Housing: 2010* (Cambridge: M.A.: 2010); Before the U.S. House of Representatives Committee on Financial Services, Subcommittee on Insurance, Housing and Community Opportunity: *Are There Government Barriers to the Housing Market Recovery?* 112th Cong. (2011) (statement of Julia Gordon, Center for Responsible Lending); and The Department of the Treasury and U.S. Department of Housing and Urban Development, *Reforming America's Housing Finance Market: A Report to Congress* (Washington, D.C.: Feb. 2011).

Administration (FHA), VA, and USDA operate the main federal programs that insure or guarantee mortgages, which protect lenders against losses in the event of default.

Originating lenders generally sell or assign their mortgages to other financial institutions that securitize them rather than hold them in their portfolios. The purchasers of these mortgages package them into pools and issue securities (known as mortgage-backed securities, or MBS). The pooled mortgages serve as collateral, and the securities pay interest and principal to their investors, which include other financial institutions, pension funds, and other institutional investors. The secondary market consists of several types of securities. Ginnie Mae securities are backed by government-insured or government-guaranteed mortgages (FHA, USDA, and VA). Securities issued by the enterprises are backed by mortgages that meet the requirements for purchase by Fannie Mae and Freddie Mac.¹⁰ Finally, private label securities—activity levels for which have dropped dramatically since 2007—are backed by mortgages that typically do not conform to Fannie Mae or Freddie Mac purchase requirements because they are too large or do not meet their underwriting criteria. Investment banks bundled most subprime and Alt-A loans into private label residential MBS, or RMBS.

Delinquency, Default, and Foreclosure

Common measures of loan performance are delinquency, default, and foreclosure rates, which show the percentages of loans that fall into each category. A loan becomes delinquent when a borrower does not make one or more scheduled monthly payments. Loans in default are generally delinquent by 90 or more days—the point at which foreclosure proceedings become a strong possibility.

¹⁰Fannie Mae was originally chartered in 1938 under the National Housing Act, as amended. Congress established it as a shareholder-owned corporation in 1968. Congress initially established Freddie Mac in 1970 as an entity within the Federal Home Loan Bank System and reestablished it as a shareholder-owned corporation in 1989. Fannie Mae and Freddie Mac purchase mortgages that meet specified underwriting criteria from approved lenders. Most of the mortgages are made to prime borrowers with strong credit histories. The enterprises bundle most of the mortgages they purchase into securities and guarantee the timely payment of principal and interest to investors in the securities. On September 6, 2008, the enterprises were placed under federal conservatorship out of concern that their deteriorating financial condition threatened the stability of financial markets. Treasury and the Federal Reserve System have provided substantial financial support to the enterprises so that they can continue to support mortgage financing during the foreclosure crisis.

Foreclosure is a legal process that a mortgage lender initiates against a homeowner who has missed a certain number of payments. The foreclosure process, which is usually governed by state law and varies widely by state, generally falls into one of two categories—judicial foreclosure, which proceeds through the courts, or nonjudicial foreclosure, which does not require court proceedings. The foreclosure process has several possible outcomes but generally means that the homeowner loses the property, typically because it is sold to repay the outstanding debt or repossessed by the lender. The legal fees, foregone interest, property taxes, repayment of former homeowners' delinquent obligations, and selling expenses can make foreclosure extremely costly to lenders.

Foreclosures have been associated with a number of adverse effects on homeowners, communities, the housing market, and the overall economy. Homeowners involved in a foreclosure are often forced to move out and may see their credit ratings plummet, making it difficult to purchase another home. A large number of foreclosures can have serious consequences for neighborhoods. For example, research has shown that foreclosures depress the values of nearby properties in the local neighborhood. In addition, our past work showed that vacant properties—often the aftermath of the foreclosure process—can be broken into and vandalized, illegally occupied, or used by people engaging in criminal activities, increasing the risk of fires or other public safety hazards.¹¹ Creditors, investors and servicers can incur a number of costs during the foreclosure process (e.g., maintenance and local taxes) and can incur a net financial loss as a result of the shortfall between the ultimate sales price and the mortgage balance and carrying costs. Large numbers of foreclosures can significantly worsen cities' fiscal circumstances, both by reducing property tax revenues and by raising costs to local government associated with maintaining vacant and abandoned properties. More broadly, avoiding preventable foreclosures has been viewed as a key component of stabilizing home prices and restoring confidence in housing for prospective home buyers and existing homeowners. As noted by the Federal Reserve System, house prices have fallen an average of about 33 percent from their 2006 peak, resulting in a decline of about \$7 trillion

¹¹GAO, *Vacant Properties: Growing Number Increases Communities Costs and Challenges*, [GAO-12-34](#) (Washington, D.C.: Nov. 4, 2011).

in household wealth and an associated ratcheting down of aggregate consumption.

Options to Avoid Foreclosure

Options to avoid foreclosure include repayment plans, forbearance plans, loan modifications, short sales, and deeds-in-lieu of foreclosure (DIL). Eligibility for different options often varies by the borrower's delinquency status. With repayment plans, forbearance plans, and loan modifications, the borrower retains ownership of the property. With short sales and deeds-in-lieu, the borrower does not.

- With a repayment plan, the borrower agrees to pay a certain amount in addition to the regularly scheduled mortgage payment for a specified number of months as a way to catch up on delinquent payments and fees.
- With a forbearance plan, an investor agrees to reduce or suspend payments for a specified period of time, during which a portion of the principal balance does not accrue interest. Forbearance may be used in response to a serious event, such as illness, that has caused the homeowner to miss several loan payments. Usually, the investor will require the borrower to make up the difference at a later time, often through a repayment plan.
- The investor may offer a loan modification when the borrower can no longer afford the monthly payments on the original mortgage but can afford reduced payments. Loan modification involves making temporary or permanent changes to the terms of the existing loan agreement, either by capitalizing the past due amounts, reducing the interest rate, extending the loan term, reducing the total amount of the loan through principal forgiveness or forbearance, or a combination of these actions.¹²
- In a short sale, the investor agrees to accept proceeds from the sale of the home to a third party even though the sale price is less than the

¹²Principal forgiveness involves reducing the amount of principal the borrower owes on their mortgage without requiring repayment. In contrast, principal forbearance involves deferring the amount of the mortgage for the purposes of determining the borrower's monthly mortgage payment. While the borrower does not pay interest on the amount forborne, the borrower will be required to make up the difference at a later time, usually upon the sale or transfer of the home or payoff of the loan.

sum of the principal, accrued interest, and other expenses owed. Short sales are often the first nonhome retention workout option considered, because the investors do not have to take ownership of the property.

- Under DIL, the mortgage holder opts to accept ownership of the property in place of the money owed on the mortgage. The homeowner voluntarily gives the investor the keys to the property and executes a deed to transfer title to the investor. The investor agrees to release the debtor from any liability on the outstanding mortgage balance. Mortgage holders generally will not accept a DIL if there are other liens on the property, as foreclosure may be necessary in order to gain clear title—that is, a title with no other claims on the property. A DIL may be combined with a lease agreement in an arrangement called a deed-for-lease, which allows the borrower to remain in the home as a renter.

Responses to the Foreclosure Crisis Have Focused on Loan Modifications and Other Home Retention Options

Federal and nonfederal responses to the foreclosure crisis have been varied and have included a range of new efforts and expanded use of existing programs. In contrast to the traditional focus of putting borrowers into temporary repayment plans or forbearance agreements, federal and nonfederal foreclosure mitigation efforts have shifted to modifying the terms of existing loans to make the payments more affordable.¹³ With the move toward lowering monthly mortgage payments, the collective performance of modified loans has improved. The key federal effort has been HAMP, which was initiated in early 2009 using TARP and enterprise funds. In addition, the enterprises, federal agencies, and servicers have expanded their existing modification programs in an effort to reach additional borrowers. Although not typically viewed as a foreclosure mitigation effort, federal refinancing programs have been introduced and expanded to help borrowers unable to refinance due to declines in home values take advantage of lower interest rates in order to make their mortgage payments more affordable, such as the Home Affordable Refinancing Program (HARP). In addition, federal and nonfederal efforts also looked to provide temporary relief and expand usage of nonhome

¹³Generally, federal agency and enterprise efforts to mitigate foreclosures have focused on loan modifications. However, a significant portion of FHA's foreclosure mitigation efforts have focused on repayment plans and forbearance. Please see appendix II for a more detailed description about the type and volume of foreclosure mitigation efforts implemented by federal agencies and the enterprises.

retention programs that facilitate short sales and deed-in-lieu of foreclosure, such as Treasury's Home Affordable Foreclosure Alternatives (HAFA) program, to allow borrowers to transition to more affordable housing and avoid foreclosure. Finally, recent federal and state enforcement actions require the five largest U.S. servicers to take actions to assist struggling homeowners. Additional details related to specific federal and nonfederal efforts are available in appendix II.¹⁴

Modification Activity Peaked in Early 2010 as More Borrowers Received Payment Reductions

In total, servicers completed more than 4 million loan modifications under various federal and proprietary programs between January 2009 and December 2011, according to estimates published by HOPE NOW, a mortgage industry association.¹⁵ After completing 1.2 million modifications in 2009, the mortgage industry permanently modified more loans in 2010, nearly 1.8 million. In 2011, however, the volume of modifications subsequently declined to 1 million. Modification activity peaked in the second quarter of 2010 before declining. In fact, loan modification activity during the second quarter of 2010 was more than double the volume of modifications completed in the fourth quarter of 2011, nearly 500,000 modifications compared to about 242,000.

Over time, servicers have also begun providing borrowers with larger reductions in their monthly mortgage payments by using different types of modifications. Using CoreLogic data—CoreLogic provides coverage of approximately 65 percent to 70 percent of prime loans and about 50 percent of subprime loans—we found that in 2007 most modifications of prime loans and a substantial number of subprime modifications resulted in an increase in monthly mortgage payments, corresponding to the time when most modifications involved capitalizing past due amounts—that is, adding past due amounts to the remaining mortgage balance and

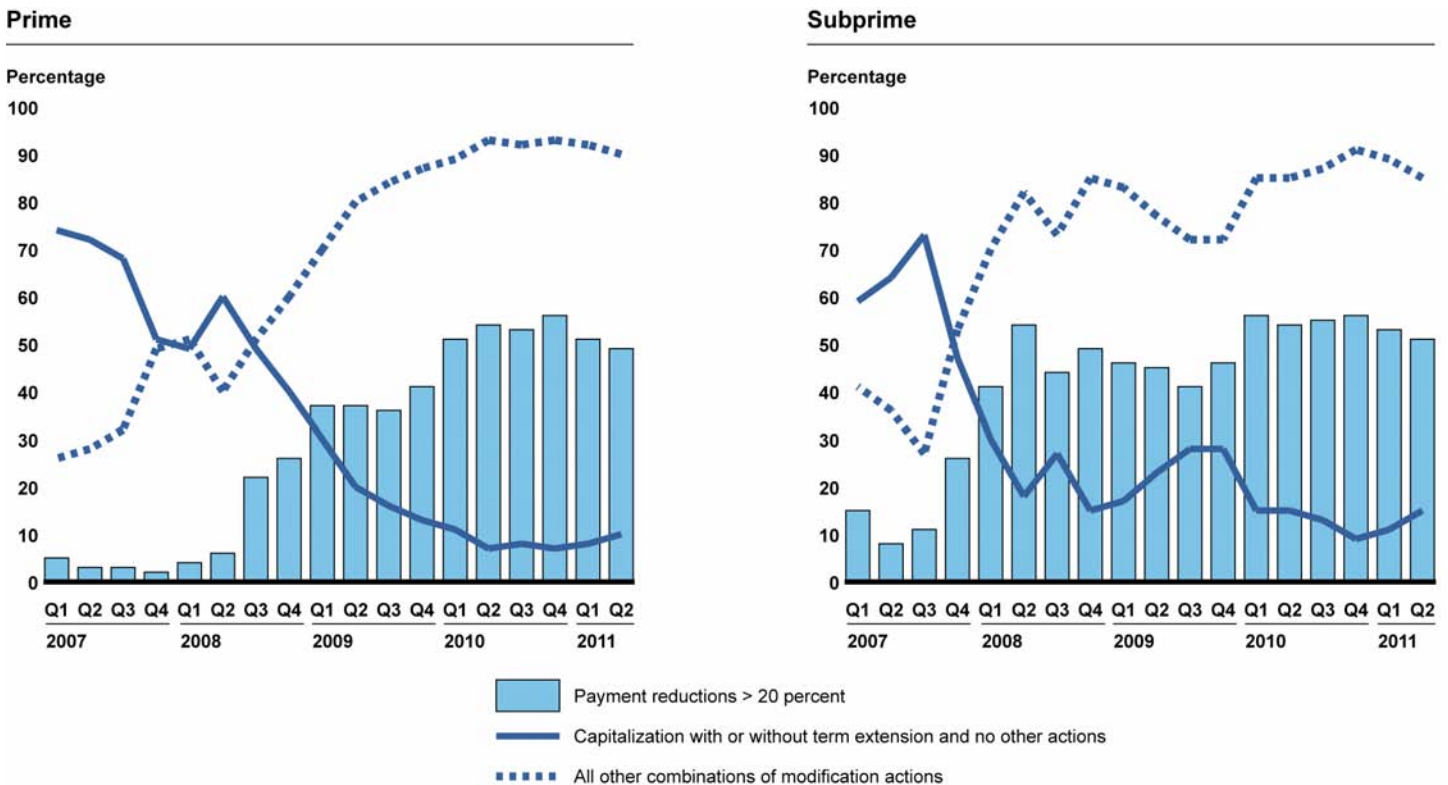
¹⁴In addition to the programs covered by this report, there are a number of additional federal, state, and private efforts to facilitate the loan workout process and provide nonfinancial assistance to borrowers such as foreclosure mitigation counseling, web-based tools to facilitate the submission of borrower documents to servicers, and third-party mediation.

¹⁵These estimates are from a survey of HOPE NOW members, which HOPE NOW extrapolated to the entire first-lien industry. HOPE NOW reports data on HAMP modifications and "proprietary modifications." According to a HOPE NOW official, "proprietary" modifications in their survey include modifications completed under Fannie Mae and Freddie Mac programs, other federal efforts, as well as modifications completed on loans held in lenders' portfolios or in private label securities.

reamortizing (see fig. 1).¹⁶ These added amounts (sometimes over the remaining term and sometimes with a term extension), left borrowers paying more each month. However, by the third quarter of 2008, an increasing proportion of modifications involved other actions that lowered payments to make them more sustainable in the long term. These actions included reducing interest rates, extending loan terms, and reducing principal through principal forgiveness or forbearance. Further, beginning in the first quarter of 2010, more than half of both prime and subprime modifications involved payment reductions of 20 percent or more. In addition, in 2010 and the first half of 2011 about a quarter of all prime and subprime modifications included payment reductions of more than 40 percent, compared to 8 percent of prime modifications and 11 percent of subprime modifications completed between January 2007 and December 2009.

¹⁶We analyzed a sample of loan-level data we obtained from CoreLogic to examine the volume, characteristics, and performance of loan modifications. The data included loans that were active sometime in the period from January 2007 through June 2011. CoreLogic's prime loans include conventional loans as well as loans insured or guaranteed by government entities, such as FHA and VA. Further, prime loans include loans servicers have identified as Alt-A loans. Although this data set did not contain direct information about the presence of modifications, we developed a set of algorithms to infer if the loan had been modified. We confirmed the accuracy of our algorithms by using our methodology to analyze data provided by OCC where the presence of a modification was known. For a detailed description of our approach, please see appendix III.

Figure 1: Prime and Subprime Modifications by Type and Payment Reductions Greater Than 20 Percent, January 2007 through June 2011

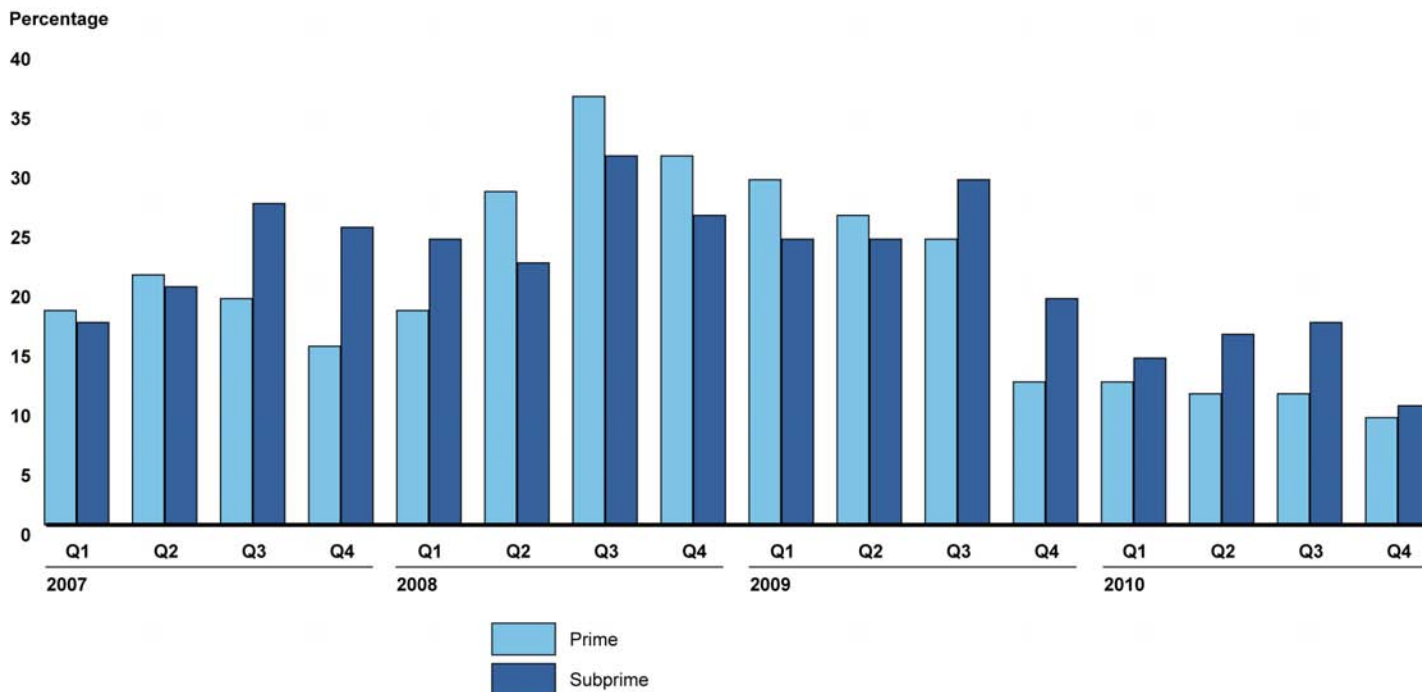


Source: GAO analysis of CoreLogic data.

Note: Prime loans include conventional loans as well as loans insured or guaranteed by government entities, such as FHA and VA. Further, prime loans include loans servicers have identified as Alt-A loans. The category "All other combinations of modifications actions" includes interest rate reductions, term extensions, and balance reductions, with or without capitalization.

Since 2008, the performance of modified loans has steadily improved. According to our analysis of CoreLogic data, loans modified during 2010 had much lower rates of redefault (becoming 90 days or more delinquent) within 6 months of the modification compared to loans modified during 2009 (see fig. 2). For prime loans modified in the fourth quarter of 2010, 9 percent had redefaulted within 6 months, while 10 percent of subprime loans modified at that time redefaulted within 6 months. In contrast, 36 percent of prime loans modified in the third quarter of 2008 redefaulted within 6 months, and 31 percent of subprime loans modified at that time redefaulted within 6 months.

Figure 2: Percentage of Modified Loans That Were at Least 90 Days Delinquent or in Foreclosure 6 Months after Modification by Quarter of Modification, 2007 through 2010



Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Prime loans include conventional loans as well as loans insured or guaranteed by government entities, such as FHA and VA. Further, prime loans include loans servicers have identified as Alt-A loans.

As shown in figure 2, 6-month redefault rates for loans modified in 2007 were generally lower than 6-month redefault rates for loans modified in late 2008. These higher redefault rates would have been observed in mid-2009, corresponding to the period when various economic indicators were showing continued distress. For example, the unemployment rate was rising throughout early 2009 before peaking in October, while home prices remained well below their peak. These factors may have contributed to rising redefaults among loans modified in late 2008.

Loan Modification Initiatives at Federal Agencies and the Enterprises Have Reached Nearly 2 Million Borrowers and Have Been Recently Expanded

According to data maintained by federal agencies and the enterprises, more than 1.9 million permanent loan modifications were completed between January 2009 and December 2011 through several programs (see table 1). Nearly half of these permanent modifications were carried out through Treasury's HAMP program, and another one-quarter were proprietary modifications through the enterprises. The bulk of the other federal loan modifications were FHA standard modifications.

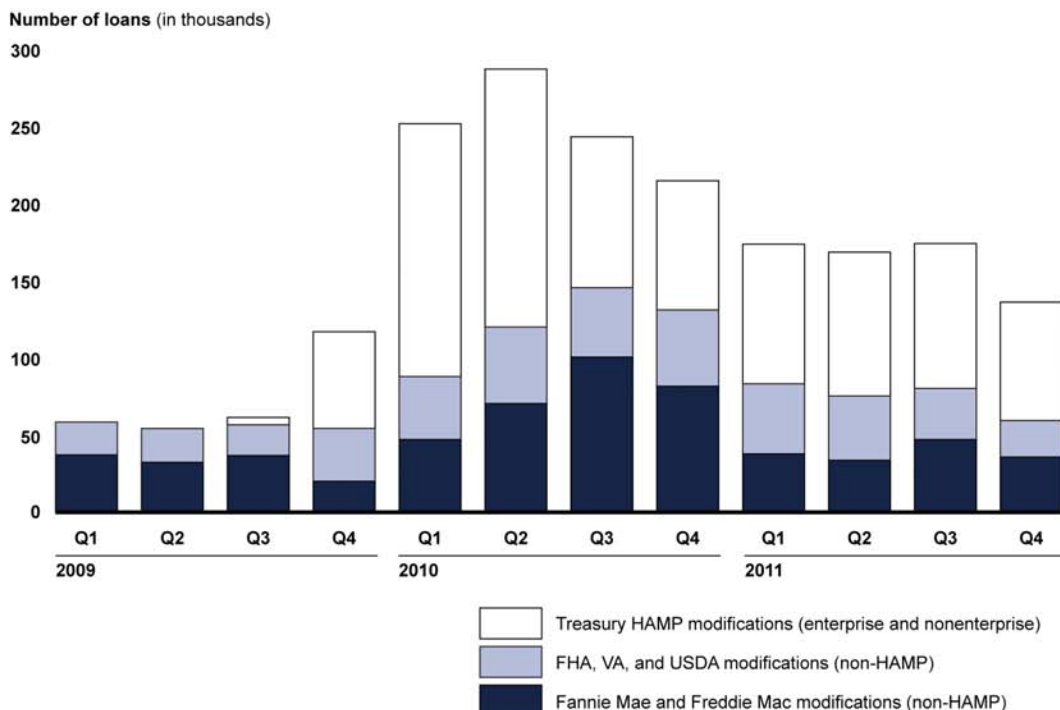
Table 1: Total Permanent Modifications from 2009 through 2011, by Efforts at Federal Agencies and the Enterprises

Loan Modification Efforts	Number of permanent loan modifications
Treasury HAMP permanent modifications (nonenterprise and enterprise)	933,000
Nonenterprise	452,000
Enterprise	481,000
Fannie Mae and Freddie Mac non-HAMP permanent modifications	579,000
FHA standard modifications	371,000
FHA-HAMP modifications	13,000
VA standard and VA-HAMP modifications	30,000
USDA traditional and special loan servicing modifications	13,000
Total	1,939,000

Source: GAO analysis of Treasury, Fannie Mae, Freddie Mac, FHA, VA, and USDA data.

Loan modification activity through federal agencies and the enterprises peaked in early 2010 and has subsequently generally continued to decline through December 2011 (see fig. 3).

Figure 3: Total Permanent Loan Modifications through Programs at Federal Agencies and the Enterprises, January 2009 through December 2011



Source: GAO analysis of Fannie Mae, Freddie Mac, FHA, Treasury, USDA, and VA data.

Home Affordable Modification Program (HAMP)

As shown in table 1, HAMP has been the federal government's largest program for assisting troubled homeowners.¹⁷ While other loan modification programs were already in place and remain in use, the amount of funding allocated to the program—\$29.9 billion in TARP funds for HAMP and other programs under the Making Home Affordable

¹⁷The affordability structure of HAMP follows the post-modification 31 percent debt-to-income standard of a modification program developed by FDIC for dealing with troubled mortgages arising from its receivership of IndyMac Bank, which failed in 2008. See appendix II for additional information about this program.

Program (MHA)—set HAMP apart from other efforts.¹⁸ Until the end of 2013, HAMP will offer modifications on first-lien mortgages to reduce borrowers' monthly mortgage payments to affordable levels and help them avoid foreclosure. The HAMP modifications described here are for (1) loans that are owned and held in banks' portfolios or in private label securitization trusts and serviced by a participating servicer, and (2) loans that are owned or guaranteed by Fannie Mae or Freddie Mac.¹⁹ Generally, HAMP's main features are:

- cost-sharing arrangement between the investor and Treasury for lowering the borrower's monthly mortgage payment;²⁰
- standardized net present value (NPV) test that is applied to each loan to evaluate whether a modification is financially beneficial to the investor;²¹

¹⁸Treasury initially allocated \$50 billion in TARP funds for HAMP, which was subsequently reduced to a total of \$45.6 billion for all programs under MHA (including HAMP) as well as the FHA Refinance for Borrowers in Negative Equity Positions and the Hardest Hit Fund. With the introduction of the additional housing programs, the TARP allocation to MHA was reduced to \$29.9 billion, which covers HAMP (the standard first-lien modification program), the Principal Reduction Alternative, Home Price Decline Protection incentives, the Second Lien Modification Program, the Home Affordable Foreclosure Alternatives program, and other incentive programs.

¹⁹Treasury has issued guidance for nonenterprise HAMP modifications, while Fannie Mae and Freddie Mac have issued their own guidance for their HAMP modifications. In addition, FHA, VA, and USDA each have their own separate HAMP-like modification programs for loans they insure or guarantee, which are described later in this report.

²⁰Costsharing between the investor and Treasury applies only to the nonenterprise HAMP program. Fannie Mae and Freddie Mac do not receive investor incentives from Treasury and bear the full costs of HAMP modifications they complete.

²¹The HAMP net present value (NPV) model compares expected cash flows from a modified loan to the same loan with no modification, using certain assumptions. If the expected investor cash flow with a modification is greater than the expected cash flow without a modification, the loan servicer is required to modify the loan. According to Treasury, the NPV model increases mortgage investors' confidence that modifications under HAMP are in their best financial interests and helps ensure that borrowers are treated consistently under the program by providing an externally derived objective standard for all loan servicers to follow.

-
- required use of a standardized sequence of modification actions (“waterfall”) to arrive at a minimum affordability ratio of 31 percent of the borrower’s monthly income;²² and
 - structured set of incentive payments made by Treasury to servicers, investors, and borrowers.

Borrowers must be delinquent or at risk of imminent default in order to be eligible for HAMP.²³ Servicers participating in HAMP are required to evaluate borrowers for HAMP before considering them for other modification options. Borrowers who are approved for HAMP begin with a trial period that lasts at least 3 months. Upon successful completion of the trial period, servicers are required to offer borrowers a permanent modification.

Treasury reported that between its inception in early 2009 and December 2011, about 933,000 permanent HAMP modifications had been started (see table 1), but almost as many have had their trial or permanent modifications canceled. More than half of these—about 481,000—came through the enterprises’ HAMP efforts. About 763,000 permanent modifications were active as of December 2011. In addition, about 79,000 trial (not permanent) modifications were active as of December 2011. According to Treasury, the median monthly payment reduction for borrowers in an active permanent modification as of December 2011 was about \$531, or 37 percent of the median monthly payment prior to modification. As of December 2011, Treasury had spent about \$1.8 billion on HAMP incentive payments to servicers, investors, and borrowers for first-lien modifications on nonenterprise loans.²⁴ Meanwhile, Fannie Mae

²²The standard modification waterfall for HAMP includes capitalizing past due amounts, reducing the interest rate down to a minimum of 2 percent, extending the mortgage term by up to 40 years from the date of modification, and principal forbearance. Servicers also have the option of providing principal forgiveness to nonenterprise loans.

²³For nonenterprise loans, imminent default under HAMP is defined by each servicer, which must have written standards for determining imminent default. Fannie Mae and Freddie Mac have provided servicers of Fannie Mae and Freddie Mac loans with an imminent default test. A servicer must evaluate the borrower’s hardship as well as the condition of and circumstances affecting the property. In addition, the servicer must consider the borrower’s financial condition, liquid assets, liabilities, monthly income, and monthly obligations.

²⁴The Congressional Budget Office (CBO) estimated that total outlays from TARP for housing programs would be \$16 billion. See CBO, *Report on the Troubled Asset Relief Program—March 2012* (Washington, D.C.: Mar. 28, 2012).

reported paying about \$880 million in servicer and borrowers incentives, and Freddie Mac paid or accrued \$685 million in servicer and borrower incentives for HAMP modifications since program inception through December 2011. Although HAMP has assisted many borrowers, a large number of borrowers have been unable to receive a HAMP permanent modification. According to Treasury, about 1.9 million borrowers had their HAMP loan modification application denied, as of December 2011.²⁵ Further, more than 930,000 homeowners have had their trial or permanent loan modifications canceled.²⁶ Servicers had canceled 761,961 trial modifications, and the vast majority of these (717,390) had trial start dates prior to June 1, 2010, when Treasury implemented a verified income requirement. Since Treasury implemented this requirement, 86 percent of trial modifications have converted to permanent modifications.

In October 2010, the Principal Reduction Alternative (PRA) took effect as a component of HAMP to help borrowers whose homes were worth significantly less than their mortgage balance. Under PRA, Treasury provides investors with incentive payments in the form of a percentage of each dollar of principal forgiven.²⁷ Borrowers are eligible for PRA if they meet the HAMP first-lien modification requirements, owe more than 115 percent of their home's value, and the financial institution servicing their mortgage is participating in the program. Servicers participating in HAMP are required to evaluate these borrowers for PRA by running the NPV test using both the standard HAMP waterfall as well as an alternative waterfall that includes reducing the borrower's unpaid principal balance. However, servicers are not required to offer the borrower a HAMP PRA modification even when the NPV result with PRA principal reduction is both positive

²⁵The most common causes for servicers not offering homeowners a HAMP trial modification include insufficient documentation, borrower ineligibility, or mortgage ineligibility. The 1.9 million figure is based on data reported by the 10 largest servicers.

²⁶Borrowers who do not make current trial period payments are considered to have failed the trial period. In addition, servicers had canceled 170,488 permanent modifications. A permanent modification is canceled when a borrower has missed three consecutive payments (redefaults).

²⁷The enterprises have not received incentive payments from Treasury for PRA or the other components of the Making Home Affordable program, including HAMP. In January 2012, Treasury announced that it would pay PRA incentives to the enterprises for HAMP PRA modifications of enterprise loans; however, as of June 2012, FHFA does not allow Fannie Mae and Freddie Mac to forgive principal as part of a HAMP modification.

and exceeds the NPV result under the standard waterfall. As of December 2011, about 5 percent of active permanent HAMP modifications (a total of about 40,000 loans) and 19 percent of permanent first-lien modifications started that month received reductions in their principal balances under PRA.²⁸ Treasury had paid \$8.8 million in PRA incentives to participating servicers as of December 2011.

Treasury announced a series of changes to its HAMP program in January 2012 intended to help reach additional borrowers at risk of foreclosure. Effective June 1, 2012, these modifications, referred to as HAMP Tier 2 modifications, will be made available to borrowers who do not meet the eligibility or underwriting requirements under the original HAMP guidelines (now referred to as HAMP Tier 1). These HAMP Tier 2 modifications will capitalize past due amounts, adjust the interest rate to the market rate plus a risk adjustment, and extend the loan term to 480 months from the date of the modification. In cases where the mark-to-market loan-to-value (LTV) ratio exceeds 115 percent, the servicer must forbear principal equal to the lesser of (a) an amount that would create a post-modification mark-to-market LTV ratio of 115 percent using the interest bearing principal balance or (b) an amount equal to 30 percent of the gross post-modified unpaid principal balance of the mortgage loan (inclusive of capitalized past due amounts). If these changes reduce the borrower's monthly principal and interest payment by at least 10 percent and result in monthly payments that are between 25 percent and 42 percent of the borrower's monthly gross income, the modification may be offered.²⁹

Fannie Mae and Freddie Mac

Both Fannie Mae and Freddie Mac have provided loan modifications outside of the HAMP program for mortgages they hold or guarantee. Servicers of Fannie Mae and Freddie Mac loans may use enterprise programs for borrowers who have been evaluated for HAMP but do not qualify or who received a HAMP modification but have redefaulted. Both of the enterprises delegated authority to their largest servicers to offer modifications according to a standard set of waterfall steps. This

²⁸These figures include nonenterprise and enterprise loans. As noted earlier, enterprise loans are not eligible to receive principal reduction. When excluding enterprise loans, as of December 2011, about 11 percent of nonenterprise active permanent HAMP modifications had received reductions in their principal balances under PRA.

²⁹See appendix II for a more detailed description of the various foreclosure mitigation efforts offered by Treasury.

modification structure was aimed at making monthly payments more affordable. According to Fannie Mae and Freddie Mac data, non-HAMP modifications resulted in median monthly payment reductions of about 26 percent (\$279) and 11 percent (\$132), respectively, in fiscal year 2011.³⁰ In addition, the enterprises offered incentives of \$800 per completed modification. Fannie Mae and Freddie Mac modified nearly 580,000 loans between January 2009 and December 2011 through their non-HAMP programs.

In April 2011, FHFA directed the enterprises to align their requirements for certain servicing practices.³¹ Subsequently, Fannie Mae and Freddie Mac announced a standard loan modification program that requires servicers to capitalize past due amounts, adjust interest rates to a fixed rate, and extend the amortization term to 480 months from the modification effective date.³² In addition, if the current LTV ratio is greater than 115 percent, the servicer must forbear principal in the amount necessary to reduce the interest-bearing principal balance to 115 percent LTV or up to 30 percent of the unpaid principal balance, whichever is less. Further, these standard modifications must reduce the borrower's monthly principal and interest payment by at least 10 percentage points, and the borrower's housing expense-to-income ratio after the modification must be between 10 percent and 55 percent. Fannie Mae and Freddie Mac servicers are eligible to receive incentives of up to \$1,600 for each modification, depending on how early in the delinquency the modification takes effect. According to FHFA officials, this standard program was based on Fannie Mae's proprietary modification program, which was determined to be more effective, in terms of borrower uptake, reduction in monthly payments, and ultimate borrower reperformance. Fannie Mae

³⁰Prior to June 2011, Fannie Mae and Freddie Mac offered different modification solutions. For example, Fannie Mae's program employed principal forbearance at a higher rate than Freddie Mac's program. According to FHFA officials, these differences resulted in the variation in average payment reductions.

³¹FHFA, which is the regulator and conservator, has direct supervisory authority over Fannie Mae's and Freddie Mac's activities.

³²Initially, the enterprises required the interest rate to be reduced to 5 percent. However, this rate is recalculated periodically based on market conditions.

and Freddie Mac made these requirements and servicing practices effective for all loans on October 1, 2011.³³

Other Federal Programs

FHA, VA, and USDA offer their own loan modification options for troubled mortgages.³⁴ In addition to their established modification programs—which typically involve capitalizing past due amounts and limited interest rate reductions and term extensions—each agency has implemented an expanded modification program with features similar to HAMP.³⁵ Each of these agencies requires servicers to evaluate borrowers for the established loss mitigation options first before considering them for the newer expanded modification programs. None of these programs use the Treasury NPV model to evaluate whether the loan should be modified, instead relying on servicers to make that determination. In addition, Treasury does not share the cost to investors of modifying loans under these programs, although FHA and USDA servicers and borrowers may be eligible for incentive payments from Treasury.³⁶

- In May 2009, FHA received statutory authorization to offer expanded modifications as a permanent part of its loss mitigation program, establishing the framework for FHA-HAMP, which was put in place in August 2009. Although FHA uses “HAMP” in the name of its program, there are important differences compared to Treasury’s HAMP. Similar to Treasury’s HAMP, these modifications focus on bringing the borrower’s monthly payment down to 31 percent of income by reducing the interest rate, extending the term of the loan, and (if necessary) deferring principal. However, these modifications do not capitalize past due amounts. Instead, the servicer provides an advance of the past due amount in order to bring the loan current, which the borrower must repay when the property is sold or the first

³³See appendix II for a more detailed description of the various foreclosure mitigation efforts offered by the enterprises.

³⁴See appendix II for a more detailed description of the various foreclosure mitigation efforts offered by FHA, VA, and USDA.

³⁵USDA’s traditional loan modification program does not offer term extensions.

³⁶As discussed later in this report, servicers can receive certain incentive payments from Treasury for loans modified under FHA and USDA programs that meet additional requirements outlined by Treasury.

lien is paid in full.³⁷ According to FHA data, FHA-HAMP modifications resulted in average monthly payment reductions of about 19 percent in fiscal year 2011, compared to reductions of about 11 percent under its standard modification program. FHA completed more than 370,000 standard modifications and 13,000 FHA-HAMP modifications between January 2009 and December 2011. The claims payments to servicers for these modifications totaled \$446 million, and the servicer incentives' totaled \$294 million.

- In January 2010, VA issued guidelines for VA-HAMP, which will be available until Treasury's HAMP expires.³⁸ This program follows Treasury's HAMP procedures for calculating the target monthly payment and uses the same waterfall (capitalization, interest rate reduction down to 2 percent, term extension, and principal forbearance) to achieve the necessary payment reduction to reach the targeted monthly payment (31 percent of income). Servicers completed about 30,000 modifications of VA loans between January 2009 and December 2011.³⁹ The incentives for servicers associated with these modifications totaled about \$15 million in costs to VA.⁴⁰
- In August 2010, USDA published a final rule outlining procedures for special loan servicing (SLS). SLS procedures are a permanent part of USDA's loss mitigation efforts. These procedures expand its modification efforts by allowing for term extensions of up to 40 years from the date of modification (compared to the remaining term under the traditional modification program), further interest rate reductions,

³⁷FHA refers to the process of reimbursing a servicer for advancing funds to bring the mortgage current as a partial claim. As we describe later, servicers may use a partial claim by itself as another foreclosure mitigation action. Under FHA guidelines, servicers are to consider borrowers for a partial claim after considering them for a standard loan modification but before an FHA-HAMP modification.

³⁸VA issued revisions to the VA-HAMP guidelines in May 2010, which specified that servicers are not required to use Treasury's NPV model. Although VA uses "HAMP" in its program name, VA-HAMP is administratively independent of Treasury's HAMP and Treasury does not provide servicer incentives.

³⁹According to VA officials, servicers do not distinguish between standard modifications and VA-HAMP modifications in reporting to VA. As discussed later in this report, collecting data on specific types of foreclosure mitigation actions could help VA better manage its foreclosure mitigation efforts.

⁴⁰Loans that are reportable defaults at the time the modification is completed (VA HAMP modifications and normal modifications) are eligible for VA incentive payments.

and if necessary, a mortgage recovery advance to cover past due amounts and other costs, such as canceled foreclosure fees. In addition, forbore principal may be included in this advance. USDA reimburses the servicer for advancing the funds for the mortgage recovery advance, which is payable when the borrower sells the property or pays off the loan (similar to FHA-HAMP). USDA approved servicing plans for nearly 13,000 traditional modifications and 143 SLS modifications between January 2009 and December 2011. USDA does not offer servicers incentives for modifying loans. According to USDA's guidance, servicers are required to use the following waterfall in considering a loss mitigation action: repayment agreement, special forbearance, loan modification, SLS loan modification, preforeclosure sale (short sale) or deed-in-lieu of foreclosure.

Although Treasury does not share the cost of modifying loans with investors under FHA-HAMP and USDA's SLS, it has put in place performance incentives that reward participating servicers and borrowers for certain modifications that remain current under these programs.⁴¹ Servicers must have entered into agreements with Treasury to participate in these incentive programs. According to Treasury, it offered VA the opportunity for its servicers and borrowers to receive incentive payments under MHA. However, VA officials told us that implementing this feature increased the complexity of its loan modification program and VA was concerned that veterans may be denied modifications. As a result, VA decided to issue its guidelines for VA-HAMP without the additional incentives. As of December 2011, Treasury had paid \$5 million in servicer and borrower incentives using TARP funds for FHA-HAMP modifications that remained current, but had not made any incentive payments for USDA SLS modifications.

⁴¹Treasury's incentive program for FHA-HAMP modifications is called Treasury FHA-HAMP, while its incentive program for SLS modifications performed on mortgages guaranteed by the USDA Office of Rural Development (RD) is called RD-HAMP. Servicers receive the lesser of \$1,000 or half of the reduction in the borrower's annualized monthly payment each year for 3 years for modifications that resulted in a monthly payment reduction of 6 percent or more, so long as the loan remains in good standing and has not been paid in full. Borrowers receive a similar pay-for-performance incentive, accruing the lesser of \$83.33 or half of the reduction in monthly payments for each month a timely payment is made. Borrower incentives are applied to the outstanding principal balance at the end of each year, so long as the loan remains in good standing at that time and has not been paid in full.

Treasury's Housing Finance Agency Innovation Fund for the Hardest Hit Housing Markets (known as the Hardest Hit Fund or HHF program) has committed \$7.6 billion of TARP funding to 18 states and the District of Columbia for programs such as loan modification programs, among other things, to meet the distinct challenges struggling homeowners in their state are facing. For example, California devoted more than \$770 million for reducing principal balances for low-to-moderate income borrowers with current LTV ratios greater than 115 percent. Arizona, Michigan, Nevada, North Carolina, Ohio, and Rhode Island are among the states with modification programs that include principal reduction.⁴²

Servicers Have Also Focused on Loan Modification Programs to Help Address the Foreclosure Crisis

Apart from responses from federal agencies and the enterprises, servicers have responded to the foreclosure crisis by implementing new or adapting existing modification efforts. Comprehensive data on the number of proprietary permanent modifications completed by servicers are not readily available. However, the number of these modifications could be over 2 million, based on our analysis of estimates reported by HOPE NOW and data from the enterprises, FHA, VA, and USDA.⁴³ Servicers have their own proprietary modification programs that they may use for loans held in portfolio or in private label securitization trusts. According to mortgage industry participants and observers, prior to HAMP there was no industrywide standard for structuring loan modifications or determining whether they were appropriate in a given set of circumstances. HAMP provided a common structure—the NPV test and the waterfall of modification actions—that servicers could adapt to provide modifications to borrowers who did not meet HAMP's eligibility requirements but who met the servicers' internal eligibility requirements for a modification. For example, while HAMP Tier 1 requires borrowers'

⁴²GAO is currently examining Treasury's oversight of the Hardest Hit Fund, among other things, as part of its ongoing oversight of Treasury's implementation of TARP-funded programs.

⁴³To estimate the total number of permanent loan modifications through servicers' proprietary efforts, we subtracted the modifications completed under federal agencies and the enterprises (as reported by the federal agencies and the enterprises) from the total modifications estimated by HOPE NOW. Between January 2009 and December 2011, HOPE NOW estimated there were about 4 million permanent modifications. The HOPE NOW estimates are from a survey of HOPE NOW members, which include approximately 37 million loans and which have been extrapolated to the entire first-lien industry. HOPE NOW reports data on HAMP modifications and "proprietary modifications." According to a HOPE NOW official, proprietary modifications in their survey include modifications completed through the enterprises, other federal efforts, as well as modifications completed on loans held in lenders' portfolios or in private label securities.

monthly mortgage payments to be at least 31 percent of their income prior to modification, some servicers have a lower threshold for their proprietary programs.⁴⁴ As a result, proprietary loan modification programs may reach homeowners who are ineligible for HAMP and other federal programs.

Refinancing Programs Have Shifted to Reach Borrowers with Little or Negative Equity, but Associated Costs Relative to Participation Raise Questions

Refinancing a mortgage is not typically viewed as an action to mitigate a foreclosure, although it can reduce borrowers' monthly mortgage payments and thereby result in more sustainable mortgage loans. A number of federal and nonfederal programs are in place to help homeowners who are current on their mortgages but cannot refinance because of declining home values. Generally, these programs offer refinancing options that include accepting higher LTV ratios than have typically been allowed and lowering refinancing costs.

The primary federal refinance effort has been the Home Affordable Refinance Program (HARP). It was announced alongside HAMP in February 2009 as a way to provide for borrowers who were current on their mortgage payments but unable to refinance because the declines in home values had left them with little or no equity in their homes. HARP was intended to allow these borrowers to benefit from reduced interest rates in order to make their mortgage payments more affordable. Only mortgages owned or guaranteed by Fannie Mae and Freddie Mac are eligible. Initially, HARP targeted borrowers with current LTV ratios between 80 percent and 105 percent, but FHFA revised those requirements to include borrowers with current LTV ratios up to 125 percent in July 2009. The standard mortgage insurance requirements for these refinance loans were relaxed so that borrowers who did not have mortgage insurance on their existing loan did not have to purchase it for their refinanced loan, something that would typically be required for a loan with an LTV ratio of more than 80 percent. HARP has resulted in approximately 1 million refinances as of December 31, 2011.⁴⁵ Approximately 91 percent of HARP refinances have gone to borrowers with current LTV ratios between 80 percent and 105 percent. According to

⁴⁴As noted previously, Treasury recently announced HAMP Tier 2, which does not require mortgage payments to exceed 31 percent of monthly income.

⁴⁵Fannie Mae and Freddie Mac completed more than 9 million additional refinances through other refinance programs.

Fannie Mae, borrowers who refinanced in 2011 under its HARP effort saved an average of \$151 on their monthly mortgage payments.⁴⁶ Both Fannie Mae and Freddie Mac expected that the program would have minimal net costs to them.

To respond to continued weakness in the housing market, including the large number of borrowers with negative equity, FHFA announced changes to HARP in October 2011. These changes included removing the LTV cap to reach more underwater borrowers—those with current LTVs of more than 125 percent. Delivery fees the enterprises charged to lenders and that may be passed on to the borrower were also reduced. In addition, the enterprises eliminated representations and warranties tied to the original loan. FHFA also extended the program's expiration date to December 31, 2013.⁴⁷

While HARP is available only to borrowers with loans owned or guaranteed by Fannie Mae or Freddie Mac, several other refinance efforts were put in place to reach other borrowers. For example, Treasury worked in conjunction with FHA to establish the FHA Refinance for Borrowers in Negative Equity Positions (FHA Short Refinance), which is partially supported using TARP funds.⁴⁸ This program took effect in September 2010 and provides an opportunity to borrowers who are current on their mortgage payments and have loans not insured by FHA with current LTV ratios greater than 100 percent to refinance into an FHA-insured mortgage. In order to qualify, investors must write down at least 10 percent of the outstanding principal and achieve an LTV ratio of no more than 97.75 percent.⁴⁹ Through December 2011, FHA Short

⁴⁶This figure includes borrowers who refinanced into a mortgage with a shorter term and therefore increased their monthly payments. Freddie Mac did not report comparable data.

⁴⁷Lenders make representations and warranties as to certain facts and circumstances concerning themselves and the mortgage loans they are selling or delivering to Fannie Mae or Freddie Mac. Representations and warranties are not limited to matters of which the lender had knowledge, and therefore the action or inaction (including misrepresentation or fraud) of the borrower or a third party, as well as of the lender, will constitute the lender's breach of a selling warranty.

⁴⁸For loans refinanced under the FHA Short Refinance program, Treasury will pay a portion of claims on those loans in the event of a default after FHA has paid its portion of the claim.

⁴⁹In addition, Treasury pays incentives to holders of second liens to reduce principal or extinguish second liens entirely in order to facilitate refinancing into an FHA mortgage.

Refinance has had limited success, reaching 646 borrowers. During the subsequent 5 months, however, program volume doubled to 1,303 loans. Although no borrowers who have refinanced under the program had defaulted as of December 31, 2011, Treasury had paid approximately \$5.5 million in administrative fees to maintain an \$8 billion letter of credit facility that will be used to pay Treasury's portion of claims on losses associated with loans refinanced under the program. The letter of credit is expected to be in force through September 2020—approximately 8 more years—and the administrative fees associated with this letter of credit could reach a maximum of \$117 million. However, participation in the program was initially estimated at 1 million borrowers, and even with FHA's recently announced changes to the program, whether participation will reach the levels initially projected is not clear.⁵⁰ With participation to date much lower than expected and future participation unknown, the costs to Treasury of maintaining the letter of credit facility may not be justified. As noted in our Standards for Internal Control in the Federal Government, program managers are responsible for achieving objectives of the agency while making effective and efficient use of the entity's resources.⁵¹

Federal agencies and the enterprises have other existing refinance programs, and although the aim of these programs is not necessarily to provide relief to struggling borrowers, some have features that lend themselves to being used by such borrowers. For example, an FHA streamlined refinance without an appraisal may help existing borrowers with negative equity that are current on their mortgage but struggling to make their mortgage payments because it allows lenders to refinance the entire outstanding principal balance.⁵² VA's Interest Rate Reduction Refinancing Loan requires no appraisal or credit underwriting, and borrowers may qualify with VA approval even if they are delinquent.

⁵⁰In March 2012, FHA announced that borrowers who were not current on their mortgages but who completed a 3-month trial period would be eligible for a refinance under the program. In addition, FHA extended the program through December 2014.

⁵¹GAO, Standards for Internal Control in the Federal Government, GAO/AIMD-00-21.3.1 (Washington, D.C.: Nov. 1999).

⁵²However, FHA has additional restrictions when there is a second lien on the property. The maximum combined LTV cannot exceed 125 percent of the property value at the time the existing first lien was originated.

Under the HHF program, several states are using funding for refinance programs that help borrowers with negative equity or second mortgages. For example, Ohio set aside \$50 million to help borrowers refinance into mortgages with a reduced principal balance and lower monthly payments. Servicers receive up to \$25,000 per borrower for each refinance. North Carolina has a program that would provide interest-free loans of up to \$30,000 to refinance certain second mortgages.

Other Home Retention Efforts Provide Temporary Relief to Borrowers

Not all borrowers in financial distress need the terms of their mortgages changed (loan modification) or a new mortgage (refinance). Short-term relief may be sufficient for some borrowers to relieve a temporary shortfall in funds. Treasury's Home Affordable Unemployment Program (UP) provides assistance to borrowers whose hardship is related to unemployment. A borrower who is unemployed and requests assistance under HAMP (nonenterprise program only) must be evaluated for and, if qualified, must receive an UP forbearance plan before being considered for HAMP unless the servicer determines that a HAMP modification is the better alternative for the borrower. No TARP funds are used to support the UP program.⁵³ Under UP, servicers must provide qualified borrowers with a forbearance period during which their mortgage payments are temporarily reduced or suspended for a minimum of 12 months. Upon completion of the forbearance period, borrowers must be evaluated for other loan workout programs. UP has resulted in nearly 18,000 forbearance agreements.

Other federal agencies and the enterprises also have existing programs to provide temporary relief to borrowers. These programs may be formal or informal and typically take the form of forbearance agreements and repayment plans. FHA and USDA encourage servicers to use these options informally early in the delinquency to prevent borrowers from ever becoming 90 days delinquent. Fannie Mae and Freddie Mac reported that about 257,000 repayment plans and forbearance agreements had been

⁵³As previously discussed, forbearance involves the investor agreeing to reduce or suspend payments for a specified period of time, during which a portion of the principal balance does not accrue interest.

completed under their existing programs since January 2009.⁵⁴ FHA servicers provided repayment plans to about 440,000 borrowers and special forbearance agreements to about 67,000 borrowers. In addition, servicers may advance funds to bring loans current, and FHA paid partial claims totaling \$415 million to servicers to reimburse them for almost 47,000 such advances.⁵⁵ Servicers reported that successful repayment plans and special forbearance agreements reached about 28,000 VA borrowers, while USDA approved special forbearance servicing plans for more than 5,000 borrowers. FHA extended the minimum term of its special forbearance program for unemployed borrowers from 4 months to 12 months, effective August 2011. In January 2012, Freddie Mac and Fannie Mae announced changes to the forbearance options servicers can offer to unemployed borrowers, which increase the minimum forbearance period to 6 months, extendable for up to an additional 6 months if the borrower is still unemployed.⁵⁶

Two recently established programs use federal funds to provide temporary relief to borrowers but are administered at the state level. Under HHF, several states have established programs to provide ongoing mortgage payment assistance to qualified borrowers who are unemployed or underemployed. Other programs provide one-time loans to qualified borrowers to resolve their delinquencies, which may be

⁵⁴During 2009 and 2010, Fannie Mae also reached 44,000 borrowers through the HomeSaver Advance program, which provided borrowers with a loan of up to \$20,000 or 15 percent of the original loan to cover the amount past due. The loan term was 15 years and the interest rate 5 percent, with the first 6 months requiring no payments and accruing no interest. Fannie Mae phased out the program in 2010.

⁵⁵As described earlier, a servicer may advance the amount that the borrower is past due to bring the loan current and then file a partial claim with FHA for the amount advanced. The servicer executes a subordinate lien payable to HUD with the borrower in the amount of the partial claim that is nonamortizing and does not bear interest. This amount is due upon repayment of the first lien or the sale of the property. While partial claims do not reduce borrowers' monthly payments, they do provide relief to borrowers by allowing them to resume monthly payments without having to immediately make up the past due amount.

⁵⁶Prior to establishing this new unemployment forbearance option, Fannie Mae instructed its servicers to generally limit forbearance periods to no more than 6 months (with no minimum duration) and required servicers to obtain permission to extend forbearance periods longer than 12 months. Freddie Mac offered short-term forbearance of 3 months with suspended payments or 6 months with reduced payments and long-term forbearance of 4 to 12 months if certain conditions were met but could submit a recommendation to Freddie Mac for additional forbearance.

forgiven after a period of time (e.g., 3 years for California's program). The Emergency Homeowners Loan Program (EHLF) was authorized under the Dodd-Frank Wall Street Reform and Consumer Protection Act, allowing HUD to provide short-term loans to unemployed borrowers to help meet their mortgage obligations in the 32 states and Puerto Rico that did not receive Hardest Hit Fund dollars.⁵⁷ The program was designed to provide mortgage payment relief (up to \$50,000 total) to eligible homeowners experiencing a drop in income of at least 15 percent to cover past-due mortgage payments as well as a portion of the homeowner's mortgage payment for up to 24 months. HUD permitted five states with similar programs already in place—Connecticut, Delaware, Idaho, Maryland, and Pennsylvania—to direct their EHLF allocations to these programs. NeighborWorks America, a federally chartered nonprofit organization, administers EHLF for the remaining 27 states and Puerto Rico. Applications for funds under EHLF were due in September 2011. HUD reported that, as of September 30, 2011, slightly more than half of the \$1 billion allocated to the program had been obligated. As of December 27, 2011, more than 5,500 EHLF loans had been closed and nearly 6,000 EHLF loans were in the process of being closed.

Programs that Facilitate Short Sales and Deeds-in-Lieu of Foreclosure Have Been Implemented or Expanded

When borrowers cannot afford to keep a property even with the assistance that a modification or temporary relief program would provide, they may seek alternatives that will allow them to transition to more affordable housing and avoid foreclosure. These alternatives are generally less expensive than going through the foreclosure process and often take less time. Treasury implemented the Home Affordable Foreclosure Alternatives (HAFA) program, which provides incentives for short sales and deeds-in-lieu of foreclosure as alternatives to foreclosure for borrowers who are unable or unwilling to complete the HAMP first-lien modification process. Borrowers, tenants, and certain other non-borrower occupants are eligible for relocation assistance of \$3,000 and nonenterprise servicers receive a \$1,500 incentive for completing a short sale or deed-in-lieu of foreclosure. In addition, investors are paid up to \$2,000 for allowing short-sale proceeds to be distributed to holders of subordinate mortgages on the property. Servicers who participate in the HAMP first-lien modification program are required to evaluate certain borrowers for HAFA, including those who do not pass the NPV test or

⁵⁷P.L. 111-203.

who default on a HAMP modification. Deed-for-lease agreements, where the borrower is allowed to rent the property after giving up ownership of the property, are permitted but not required under HAFA. Treasury has provided about \$100 million in HAFA incentive payments for approximately 26,000 short sales and deeds-in-lieu as of December 2011.

Existing programs at the enterprises, FHA, VA, and USDA provide opportunities beyond HAFA for short sales and deeds-in-lieu. These programs are typically the final options for avoiding foreclosure. Fannie Mae and Freddie Mac reported completing almost 300,000 short sales and deeds-in-lieu since January 2009, of which only about 1,600 were HAFA transactions.⁵⁸ FHA paid claims on more than 55,000 short sales and 3,000 deeds-in-lieu between January 2009 and December 2011. During the same period, servicers completed about 13,000 short sales and about 2,000 deeds-in-lieu on VA loans, while USDA approved almost 3,400 short sales and about 230 deeds-in-lieu.

In some cases, state programs funded under Treasury's HHF program include foreclosure alternatives and transition assistance for borrowers who cannot afford to keep their homes. For example, California and Rhode Island have programs to provide borrowers who are losing their homes through short sales or deeds-in-lieu with funds to secure new housing.

Recent Federal and State Enforcement Actions Require Servicers to Assist Struggling Homeowners

In April 2011, OCC, the Federal Reserve, and the Office of Thrift Supervision (now part of OCC) sent consent orders to 14 servicers outlining changes they needed to make to their servicing processes to provide better service to borrowers.⁵⁹ These changes included establishing compliance programs for their loss mitigation and loan modification activities and dedicating resources to communicating with

⁵⁸A subset of Fannie Mae's deeds-in-lieu are deeds-for-lease, part of a program that has been in place since November 2009. Under this program, the borrower can receive a lease agreement for up to 12 months. Fannie Mae officials told us that most borrowers are looking to move out of the home at a time that is convenient for them rather than looking to stay for an extended period of time.

⁵⁹Among other things, the consent orders directed servicers to undergo an independent review to identify and remediate borrowers harmed by error and deficiencies in the foreclosure process.

borrowers in ways that avoid confusion and provide continuity (e.g., through providing a single point of contact).⁶⁰

A recent joint federal government and state attorneys general agreement with the five largest servicers in the United States requires these servicers to provide financial relief to homeowners struggling to make their mortgage payments and implement new mortgage loan servicing standards.⁶¹ The settlement was the result of a federal and state investigation looking at alleged misconduct related to the origination and servicing of single family residential mortgages. The settlement requires the servicers to collectively dedicate \$20 billion toward various forms of financial relief to homeowners, including: reducing the principal on loans for borrowers who are delinquent or at imminent risk of default and owe more on their mortgages than their homes are worth; refinancing loans for borrowers who are current on their mortgages but who owe more on their mortgage than their homes are worth; forbearance of principal for unemployed borrowers; antiblight provisions; short sales; transitional assistance; and benefits for service members. These servicers are required to pay an additional \$5 billion in cash to the federal and state governments, which will be used to repay public funds lost as a result of servicer misconduct and to fund housing counseling, among other things. In addition to the financial commitment, servicers must implement new standards for servicing mortgages and handling foreclosures, and take

⁶⁰Federal Reserve System, Office of the Comptroller of the Currency, and the Office of Thrift Supervision *Interagency Review of Foreclosure Policies and Practices* (Washington, D.C.: April 2011).

⁶¹These servicers include Bank of America Corporation, JPMorgan Chase & Co., Wells Fargo & Company, Citigroup Inc., and Ally Financial Inc. (previously known as GMAC and the parent company to GMAC Mortgage).

steps to better ensure information provided in federal bankruptcy court is accurate.⁶²

Millions of Loans Face Elevated Risk of Foreclosure and Indicators Show Housing Market Remains Weak

Based on our analysis of CoreLogic data that cover approximately 65 percent to 70 percent of the prime and approximately 50 percent of the subprime mortgage market, we found that as of June 2011, 1.9-3.0 million loans had characteristics associated with an increased likelihood of foreclosure, including delinquency and significant negative equity (current LTV ratios of 125 percent or higher).⁶³ As our data do not cover the whole mortgage market, the actual number of loans with an increased likelihood of foreclosure is probably larger.⁶⁴ For example, according to Mortgage Banker Association (MBA) data, as of June 2011, approximately 4 million

⁶²For more information about this settlement, see <http://www.nationalmortgagesettlement.com/>. These servicers are also subject to enforcement orders issued by the banking regulators for unsafe and unsound foreclosure practices that require them to hire third-party consultants to review 2009 and 2010 foreclosure actions and remediate borrowers who suffered financial injury as a result of errors, misrepresentation, or other deficiencies in the servicers' foreclosure practices. We are currently examining the process servicers and regulators used to reach out to eligible borrowers to inform them of the opportunity to request a third-party consultant review of their foreclosure case. If consultants find that borrowers have suffered financial injury, they could be eligible for remediation such as lump-sum payments, rescinded foreclosures, repayment of out-of-pocket expenses, or corrected credit reports.

⁶³To examine the extent to which loans were associated with an increased likelihood of foreclosure, we conducted analyses on the full CoreLogic data set (not a sample), which included loans that were active in June 2009, 2010, and 2011. We identified the characteristics associated with an increased likelihood of foreclosure through a review of our prior work, interviews with and analyses conducted by other federal agencies, as well as Federal Reserve System and academic econometric modeling. In some cases, the CoreLogic data set did not contain information associated with these characteristics—specifically, negative equity, unemployment, and high interest rate. In these cases, we linked additional data to the CoreLogic data. For a detailed description of our analysis, please see appendix I.

⁶⁴CoreLogic estimated that their data covered approximately 65 percent to 70 percent of prime loans and approximately 50 percent of subprime loans. Due to the proprietary nature of these data, we could not assess the reliability of these estimates. Due to limited understanding of the loan and borrower characteristics of those loans not included in the CoreLogic data set, we are unable to reliably estimate the total number of loans with an increased likelihood of foreclosure for the full universe of loans.

loans had been delinquent for 60 days or more.⁶⁵ In addition, indicators of housing market conditions—including default and foreclosures—show that the housing market remained weak through 2011. Approximately 8 percent of loans were in default 90 days or more or in foreclosure as of the end of 2011, according to MBA data. Other key housing market indicators, such as home prices and home equity, remained near their recent lows.

Foreclosure May Remain High Primarily Due to the Large Number of Delinquent Loans

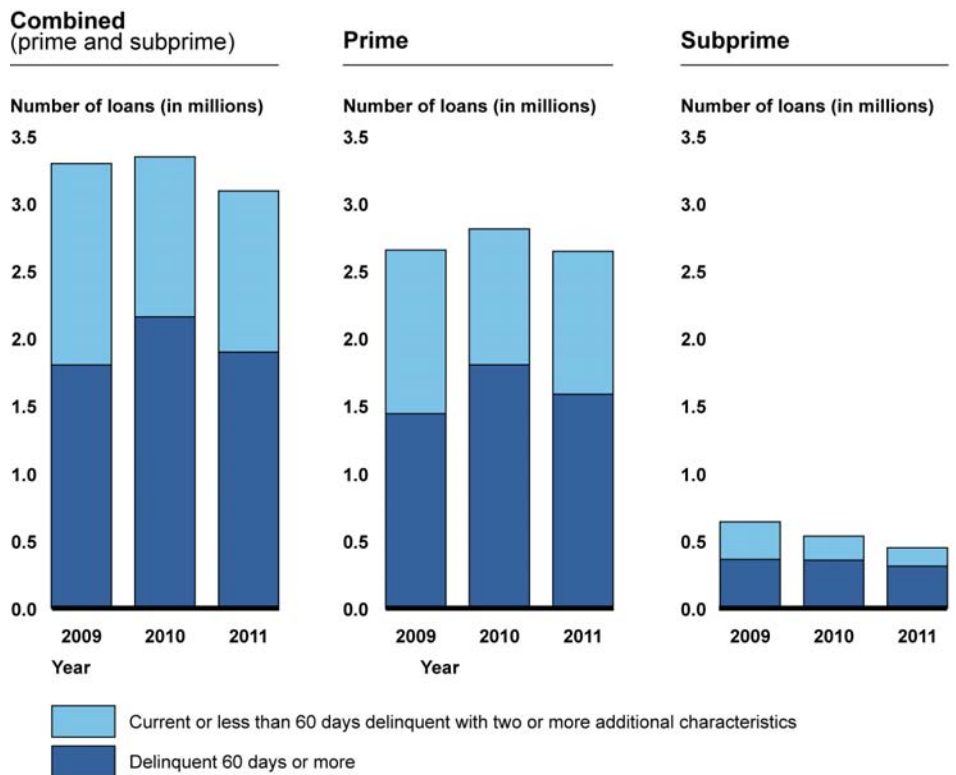
Based on our analysis of CoreLogic data, we found that 1.9-3.0 million loans—1.6-2.6 million prime (7 to 11 percent) and between 312,000-449,000 subprime loans (38 to 55 percent)—had characteristics that were associated with an increased likelihood of foreclosure, as of June 2011.⁶⁶ For example, we considered loans where the borrower had missed two or more payments—that is, had been delinquent 60 days or more—to be at an increased risk of foreclosure. As of June 2011, approximately 1.6 million prime loans (7 percent) and 312,000 subprime loans (38 percent) were 60 days or more delinquent (see fig. 4). In addition to those loans that were 60 days or more delinquent, we identified other characteristics

⁶⁵MBA reports quarterly data on the performance of first-lien single family residential mortgage loans in the National Delinquency Survey, which it estimates represents about 88 percent of the first-lien residential mortgage market during the fourth quarter of 2011. We took steps to ensure that the data we used were sufficiently reliable for our purposes, such as interviewing officials familiar with the data.

⁶⁶CoreLogic's prime loans include conventional loans as well as loans insured or guaranteed by government entities, such as FHA and VA. Further, prime loans include loans servicers have identified as Alt-A loans. Our results do not represent the entire universe of mortgage loans and as such may understate the number of loans with an increased likelihood of foreclosure. (See appendix I for a description of our methodology.) Other housing market stakeholders have published recent estimates of the number of borrowers with an increased likelihood of foreclosure. Amherst Securities Group LP, a private sector company providing analysis of the mortgage market, estimated in June 2011 that between about 9 million and 11 million borrowers were in danger of foreclosure. The estimate is based on the number of borrowers who were: (1) 60 days or more delinquent (estimate between 80 percent and 90 percent will end in foreclosure), (2) current or behind one payment, but had been 60 days or more delinquent in the past (estimate between 50 and 65 percent will end in foreclosure), and (3) never delinquent 60 days or more but had a current LTV of 100 percent or greater—negative equity—(likelihood loan will end in foreclosure varies depending on extent of negative equity with higher negative equity associated with increased likelihood). In November 2011, the Center for Responsible Lending, a research and policy organization, estimated that 3.6 million borrowers were at immediate risk of losing their homes to foreclosure. This estimate is based on the number of loans originated between 2004 and 2008 that were 60 days or more delinquent, including loans in foreclosure, as of February 2011.

that were associated with an increased likelihood of foreclosure, such as certain levels of negative equity (owing more on a mortgage loan than the property is worth), high mortgage interest rate, or certain loan origination features. As of June 2011, approximately 1 million additional prime (5 percent) and 136,000 additional subprime loans (17 percent) were current or less than 60 days delinquent but had two or more of these additional characteristics.

Figure 4: Number of All Loans and Prime and Subprime Loans Delinquent 60 Days or More Plus Loans Less Than 60 Days Delinquent with Two or More Additional Risk Characteristics, June 2009 through June 2011



Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Notes: For loans that were current or less than 60 days delinquent, additional risk characteristics associated with an increased likelihood of foreclosure are: (1) current LTV of 125 percent or higher, (2) current LTV of 125 percent or higher and local area unemployment of 10 percent or higher, (3) interest rate 1.5 percentage points or higher above the market rate, and (4) origination loan features (credit score of 619 or less or LTV of 100 percent or higher). CoreLogic data cover approximately 70 percent of the prime and 50 percent of the subprime mortgage market. As our data do not cover the whole mortgage market, the actual number of loans with an increased likelihood of foreclosure is probably larger.

CoreLogic's prime loans include conventional loans as well as loans insured or guaranteed by government entities, such as FHA and VA. Further, prime loans include loans servicers have identified as Alt-A loans.

The number of borrowers with characteristics associated with an increased likelihood of foreclosure remained largely unchanged between June 2009 and 2011 for prime loans while the number of subprime loans declined (see fig. 4). Among prime loans, the total number of loans with delinquency or two or more other characteristics associated with an increased likelihood of foreclosure decreased by less than 1 percent between June 2009 and 2011. In contrast, during the same period the total number of subprime loans with characteristics associated with an increased likelihood of foreclosure decreased by approximately 30 percent. However, this decline is in part a result of the decreasing overall number of surviving subprime loans between June 2009 and 2011.

Not all borrowers with characteristics associated with an increased likelihood of foreclosure will require foreclosure mitigation assistance or respond to offers of assistance. Our analysis of CoreLogic data and officials with the enterprises and a federal agency revealed that some borrowers with characteristics associated with an increased likelihood of foreclosure continue to pay on time or, if they are delinquent, become current without intervention. Also, according to FHA and Treasury officials, some borrowers do not answer servicers' outreach efforts to provide foreclosure mitigation assistance.⁶⁷

In total we analyzed the CoreLogic data for five characteristics associated with an increased likelihood of foreclosure.⁶⁸ We identified these characteristics based on our prior work, interviews with and analyses conducted by other federal agencies, as well as Federal Reserve System and academic econometric modeling.

- **Delinquency:** Agency officials and other housing market participants we contacted cited delinquency as a characteristic that could result in foreclosure, especially when borrowers fell two or more payments behind. Prime loans that were 60 days or more delinquent were less

⁶⁷For example, according to data provided by servicers to FHA, approximately 13 percent of delinquent borrowers do not respond to servicer outreach efforts.

⁶⁸Appendix IV provides additional data on the results of our analysis for each of the characteristics.

likely to be Fannie Mae or Freddie Mac loans and more likely to be held in portfolio or private label securities than the overall population of prime loans.⁶⁹ We were unable to analyze the investors associated with subprime loans because the loan-level data for this segment of the market do not contain reliable information about the loan's investor.

- **Negative Equity:** Negative equity is also associated with an increased likelihood of foreclosure, particularly when the loan is delinquent or has other characteristics associated with an increased likelihood of foreclosure.⁷⁰ Within the data we analyzed, a total of 1.2 million prime (5 percent) and 157,000 subprime loans (19 percent) in June 2011 had significant negative equity (a current LTV ratio of 125 percent or greater) and additional characteristics associated with an increased likelihood of foreclosure, including delinquency.⁷¹ Among loans with significant negative equity, more than one-third of prime loans (420,000) and more than half of subprime loans (93,000) were 60 days or more delinquent in June 2011. For those borrowers with

⁶⁹Approximately 45 percent of prime loans with delinquency of 60 days or greater were Fannie Mae or Freddie Mac loans and 33 percent were held in portfolio or private label securities. In contrast, 65 percent of the population of prime loans were Fannie Mae or Freddie Mac loans and 11 percent were held in portfolio or private label securities.

⁷⁰The amount of equity a homeowner has in a mortgaged property may influence how well the mortgage performs. In general, higher levels of home equity are associated with lower probabilities of default and foreclosure. Equity is a homeowner's financial interest in a property, or the difference between the value of a property and the amount still owed on the mortgage. Typically, home equity increases over time as the mortgage balance is paid down and home values appreciate. However, if the home value falls below the amount owed on the mortgage, the borrower will be in a position of negative equity. Borrowers with nonprime loans may be especially vulnerable to negative equity, because they typically make small down payments and, as previously discussed, may have loans with payment options that defer payment of accrued interest, thereby increasing the outstanding loan balance. Yuliya Demyanyk, Ralph S.J. Koijen, and Otto A.C. Van Hemert, "Determinants and Consequences of Mortgage Default," *Federal Reserve Bank of Cleveland Working Paper*, no. 1019R (2011) and Laurie S. Goodman, Roger Ashworth, Brian Landy, and Ke Yin, "Negative Equity Trumps Unemployment in Predicting Defaults," *The Journal of Fixed Income*, vol. 19, no. 4 (2010). Due to limitations of our data our analysis does not take into account additional liens. As a result, we may overstate the amount of equity a borrower has in their home.

⁷¹LTV is the amount of the loan divided by the value of the home. Additional characteristics are delinquency of 60 days or more, local area unemployment of 10 percent or greater, mortgage interest rate of 1.5 percent above current market rate, and loan origination features associated with an increased likelihood of foreclosure (origination credit score of 619 or below, origination LTV of 100 percent or higher).

limited ability to sell or refinance a home for a price that will cover the full mortgage, missed payments increase the likelihood of foreclosure.

- **Negative Equity and Unemployment:** As we have previously reported, housing market stakeholders have suggested a relationship between unemployment and negative equity and the increased likelihood of foreclosure.⁷² Borrowers who are unemployed and have significant negative equity in their homes are unlikely to be able to sell them at a price high enough to cover the mortgage and move elsewhere to seek work. In June 2011, approximately 67 percent of prime and subprime loans we analyzed with negative equity were located in areas with high local unemployment (10 percent or greater).
- **Mortgage Interest Rate:** Borrowers with a high mortgage interest rate—150 basis points or 1.5 percentage points or higher above the market rate—have an increased likelihood of foreclosure as the high interest rate results in relatively higher monthly payments and may indicate other problems that have limited a borrower's ability to refinance.⁷³ As of June 2011, of the loans we analyzed approximately 1 million prime (5 percent) and 230,000 subprime loans (83 percent) had a high mortgage interest rate and additional characteristics that are associated with an increased likelihood of foreclosure, such as delinquency. Of loans with a high mortgage interest rate and additional characteristics, 40 percent of prime and 29 percent of subprime loans had significant negative equity (LTV of 125 percent or greater). Researchers have found that borrowers with significant negative equity have a limited ability to refinance to lower interest rates and lower monthly payments as a result of tightened underwriting standards that require low LTV ratios.⁷⁴

⁷²GAO, *Loan Performance and Negative Equity in the Nonprime Mortgage Market*, [GAO-10-146R](#) (Washington, D.C.: Dec. 16, 2009).

⁷³GAO, *Nonprime Mortgages: Analysis of Loan Performance, Factors Associated with Defaults, and Data Sources*, [GAO-10-805](#) (Washington, D.C.: Aug. 24, 2010). See also Demyanyk, Koijen, and Van Hemert, "Determinants and Consequences of Mortgage Default" pg. 16 and Shane M. Sherlund, "The Past, Present, and Future of Subprime Mortgages," Federal Reserve Board Finance and Economics Discussion Series, no. 2008-63 (Washington, DC.: Nov. 2008)

⁷⁴David M. Brickman and Patric H. Hendershott, "Mortgage Refinancing, Adverse Selection, and FHA's Streamline Program," *Journal of Real Estate Finance and Economics*, vol. 21, no. 2 (2000)

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- **Origination Loan Features:** We have previously reported on the strong association between certain loan origination features—including low credit score and high LTV at the time of origination—and an increased likelihood of foreclosure.⁷⁵ As of June 2011, of the loans we analyzed, approximately 899,000 prime (4 percent) and 314,000 subprime loans (65 percent) had a combination of certain loan origination features (credit score of 619 or below or LTV of 100 percent or higher) and other characteristics associated with an increased likelihood of foreclosure, including delinquency. Of loans with these certain origination features, approximately 16 percent of prime (407,000 loans) and almost half of subprime loans (201,000) were delinquent 60 days or more.

Florida and Nevada were among the states with the largest percentage of loans (prime and subprime loans combined) with an increased likelihood of foreclosure (see fig. 5). Of the loans we analyzed in June 2011, as many as 40 percent of loans in Nevada and 29 percent of loans in Florida had characteristics associated with an increased likelihood of foreclosure. California had a lower proportion of loans with characteristics associated with an increased likelihood of foreclosure compared to six other states—Arizona, Florida, Illinois, Michigan, Nevada, and Rhode Island. But California had the largest number of loans with these characteristics. In addition, several states—Arizona, California, Florida, Michigan, and Nevada—had relatively large proportions of loans within the CoreLogic data set with significant negative equity and additional characteristics, including delinquency, associated with an increased likelihood of foreclosure. In particular, over 10 percent of loans in Nevada and approximately 10 percent of loans in Florida had significant negative equity and were delinquent 60 days or more.

⁷⁵See [GAO-10-805](#). Our prior work and analyses by Federal Reserve System officials and other housing market stakeholders identified additional origination features such as low or no documentation of income or assets that may be associated with an increased likelihood of foreclosure. Due to limitations of our data, we did not include these additional origination features in our analysis.

Figure 5: Percentage of CoreLogic Loans with Delinquency and Those with Multiple Characteristics Associated with an Increased Likelihood of Foreclosure, June 2011

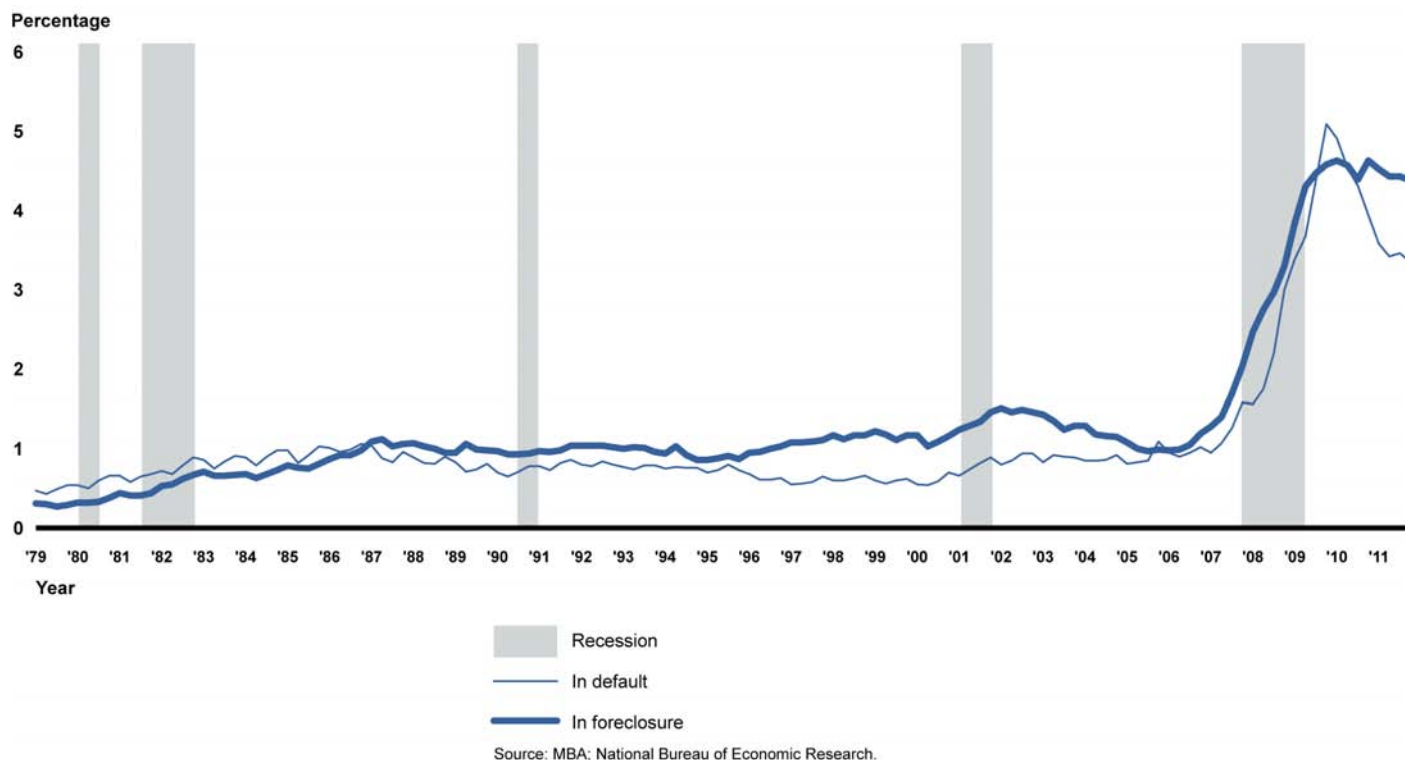
The Volume of Seriously Delinquent Loans Remains High

The number of seriously delinquent loans—those in default 90 days or more or in foreclosure—remained high in December 2011. According to MBA data, approximately 8 percent of loans were seriously delinquent nationwide, a fourfold increase compared with the number of such loans in June 2006, near the beginning of the current housing crisis. In comparison, during the prior 5 years from 2000 through 2005, approximately 2 percent of loans were seriously delinquent—substantially fewer than the current number. Continued high levels of serious delinquencies suggest that the volume of future foreclosures will likely remain high as these troubled mortgages are resolved.

Serious delinquency data covers both loans that have entered but not completed foreclosure and loans in default for 90 days or more.⁷⁶ We found that the number of loans in foreclosure in December 2011 was slightly below the peak levels in March and December 2010 but remained elevated with approximately 4 percent of loans in foreclosure (see fig. 6). Similarly, the volume of loans in default in December 2011 experienced a drop below their peak levels, with less than 4 percent of loans in default in comparison to about 5 percent in December 2009. Further, the volume of loans in default and in foreclosure during the most recent recessionary period have been extraordinarily high compared to the previous two recessions.

⁷⁶The foreclosure process can be lengthy, and prior to completing the foreclosure process, some loans become current or are paid off, either from foreclosure mitigation actions or other means. According to RealtyTrac, which collects national data on troubled mortgages, the average period to complete a foreclosure was approximately 11 months (348 days) during the fourth quarter of 2011. As we previously reported, servicers halted or delayed the processing of foreclosures near the end of 2010 due to problems with mortgage foreclosure documents. See GAO, *Mortgage Foreclosures: Documentation Problems Reveal Need for Ongoing Regulatory Oversight*, [GAO-11-433](#) (Washington, D.C.: May 2, 2011). This may have resulted in longer time periods to complete foreclosures.

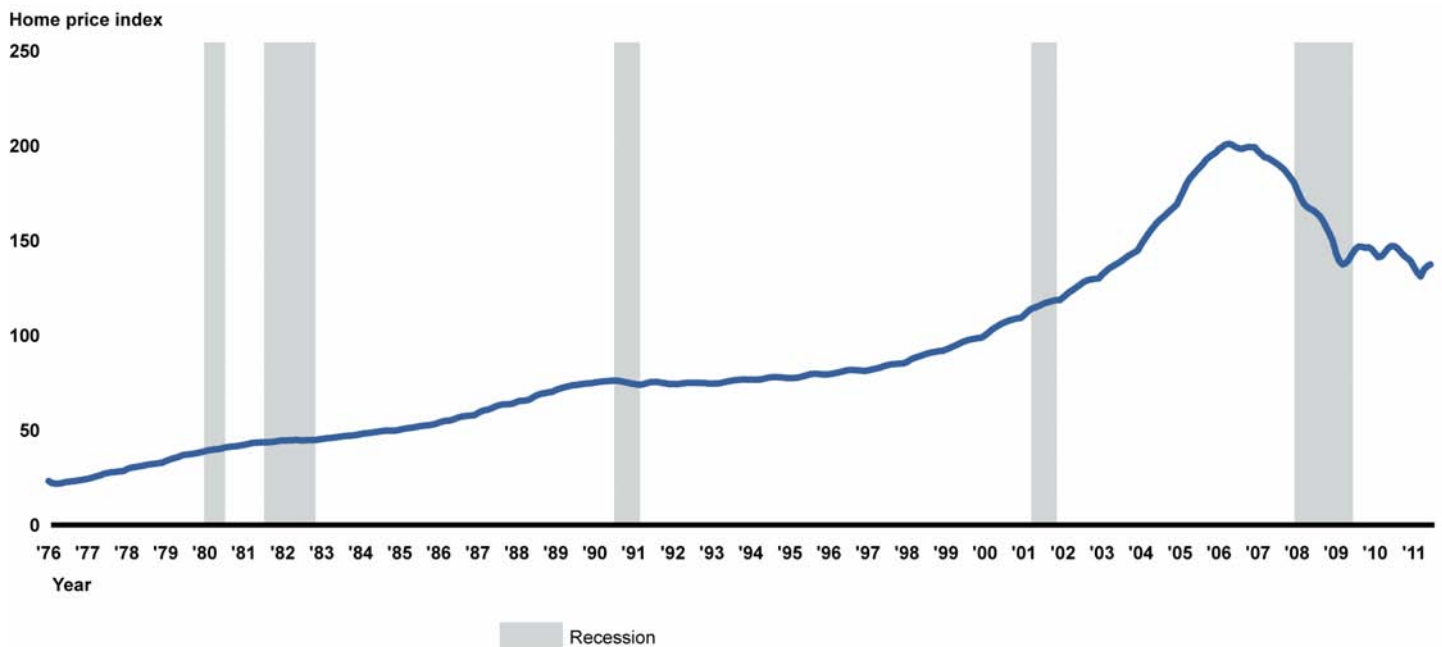
Figure 6: Percentage of Loans in Default 90 Days or More or in Foreclosure and Recession Periods, March 1979 through December 2011



Other Key Indicators Suggest the Housing Market Remains Weak

In addition to the high volume of loans in foreclosure and default in December 2011, other key national indicators of the housing market, such as home prices, home equity, and unemployment, suggest that the housing market has not yet begun to recover. Decreases in home prices have played a central role in the current crisis and continue to be well below their peak nationwide. According to CoreLogic's Home Price Index, as of June 2011 home prices across the country had fallen 32 percent from their peak in April 2006 (see fig. 7). The decrease follows a 10-year period of significant home price growth, with the index more than doubling between April 1996 and 2006. During periods in 2009 and 2010, home prices showed some slight improvement, but in early 2011 home prices fell again and reached their lowest level since 2002. Home prices rose slightly in June 2011 but remained well below the 2006 levels.

Figure 7: Home Prices and Recession Periods, January 1976 through June 2011

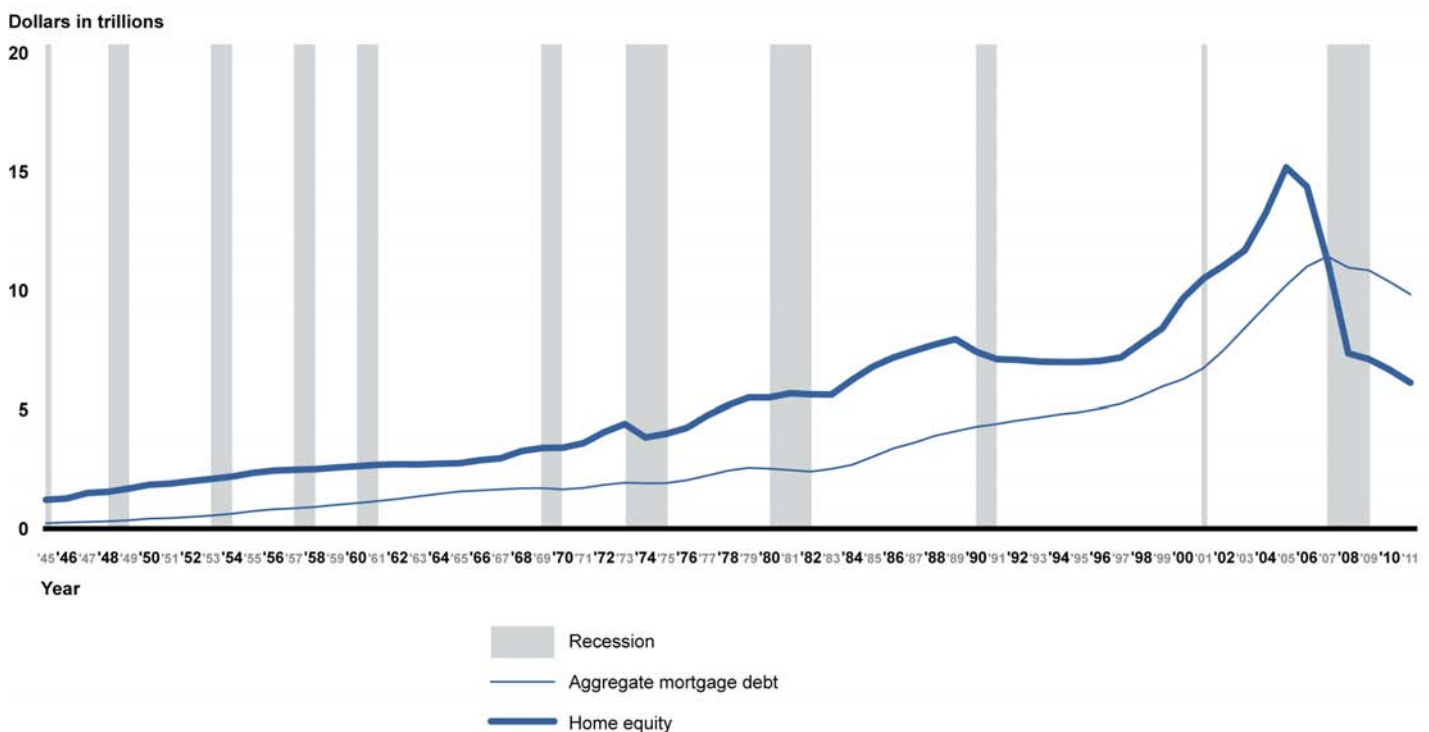


Source: CoreLogic Home Price Index, National Bureau of Economic Research.

Home values have declined faster than home mortgage debt. As a result, homeowners have lost substantial equity in their homes. As of December 2011, national home equity (the difference between aggregate home value and mortgage debt owned by homeowners) was approximately \$3.7 trillion less than total home mortgage debt (see fig. 8). In part because of the decline in home prices, households collectively lost approximately \$9.1 trillion (in 2011 constant dollars) in home equity between 2005 and 2011. In contrast, aggregate home mortgage debt—a measure of the value of household-owned real estate debt—continued to increase by an additional \$1.2 trillion between 2005 and 2007, reflecting the continued looseness of the credit markets early in the crisis as mortgage originations to low-credit quality borrowers continued to expand. Home mortgage debt has fallen slightly from its highest point in 2007 to approximately \$10 trillion in 2011—a development that a study by the Federal Reserve Bank of New York attributed to consumers paying

down debt and lenders' tightened lending standards.⁷⁷ Between 2006 and 2007, steep declines in house values left the nation's homeowners, for the first time since the data were kept in 1945, holding home mortgage debt that surpassed the equity in their homes.

Figure 8: Value of Home Equity and Aggregate Mortgage Debt and Recession Periods, 1945 through 2011



Source: Federal Reserve, Flow of Funds Accounts of the United States; Bureau of Labor Statistics; and National Bureau of Economic Research.

Note: In 2011 constant dollars.

Studies of housing market conditions we reviewed and some agency officials with whom we spoke identified the current sustained high unemployment rate as a key factor in the housing market's continued

⁷⁷ Meta Brown, Andrew Haughwout, Donghoon Lee, and Wilbert van der Klaauw, "The Financial Crisis at the Kitchen Table: Trends in Household Debt and Credit," Federal Reserve Bank of New York Staff Report, no. 480 (New York, NY: 2010).

poor performance.⁷⁸ The unemployment rate more than doubled between April 2006—the peak period of home price increases when it stood at 4.7 percent—and October 2009, when it reached its highest level since 1984 of 10.1 percent. Although the rate had declined to less than 9 percent at the end of 2011, it has remained above 8 percent since February 2009—the longest sustained period at this level since 1948. In addition, the gap between the standard unemployment measure and a more comprehensive measure that includes underemployed and discouraged workers grew significantly between April 2006 and December 2011.⁷⁹ This increase suggests that a growing number of workers have been employed below their capacity, a development that may result in their being unable to meet future mortgage obligations and will further contribute to reduced housing demand, additional foreclosures, and falling home prices.

In contrast to other indicators of the housing market we analyzed, home affordability was at record-high levels at the end of 2011, reflecting the decline in home prices and historically low interest rates. Based on our review of economic data, home affordability appeared to have increased 72 percent between March 2006 and December 2011. Improved home affordability may encourage new buyers to purchase homes and thus increase demand for housing and provide support for home values. However, according to the Federal Reserve and Joint Center for Housing Studies at Harvard University, many potential homebuyers have been reluctant or unable to purchase a home due to fear of further home price declines, uncertain income prospects, and difficulties obtaining mortgage

⁷⁸Ben S. Bernanke, *The U.S. Housing Market: Current Conditions and Policy Considerations*, Board of Governors of the Federal Reserve System (2012) and *The State of the Nation's Housing 2010*. The Joint Center for Housing Studies of Harvard University, 2010, (Cambridge, Mass. 2010).

⁷⁹The Bureau of Labor Statistics compiles an alternative indicator—known as the U-6 measure—to the official unemployment rate that represents the number of unemployed people; plus people who want a job, are explicitly available for work, and have looked for work sometime in the prior year, but are not currently looking; and all people working part time for economic reasons.

credit.⁸⁰ Further according to Census data on household growth, average annual household growth from 2008 through 2011 was less than half that of 2000 through 2007; although the most recent data indicate an increase in household formation in 2011 compared to growth in 2008 through 2010.⁸¹

Enhancing Current Federal Foreclosure Mitigation Efforts Could Improve Their Effectiveness

Most stakeholders we contacted said that enhancing existing federal foreclosure mitigation efforts was the most appropriate action to take to facilitate the recovery of the housing market, and we found that opportunities existed for federal agencies to improve the effectiveness of their efforts. Our analysis of available data indicated that a large number of struggling homeowners could be eligible for federal foreclosure mitigation programs and a large number with FHA insured or enterprise-backed loans are at an increased risk for foreclosure because of their delinquency status. As the following examples illustrate.

- Treasury estimated that as of December 31, 2011, about 900,000 borrowers could be eligible for its HAMP modification program. This number included loans that were 60 days or more delinquent and were serviced by participating HAMP servicers that appeared to meet the program's eligibility requirements.⁸²
- Fannie Mae and Freddie Mac collectively had about 1.1 million loans that were seriously delinquent as of the quarter ending on December 31, 2011.⁸³

⁸⁰Monetary Policy and the State of the Economy, 112th Cong. 2nd session (2012) (statement of Ben S. Bernanke, Chairman Board of Governors of the Federal Reserve System); Janet L. Yellen, "Housing Market Developments and Their Effects on Low- and Moderate-Income Neighborhoods" (statement read at Federal Reserve Bank of Cleveland Policy Summit, Cleveland, Ohio: June, 9, 2011); and *The State of the Nation's Housing: 2011*, The Joint Center for Housing Studies of Harvard University (Cambridge, Mass.: 2011).

⁸¹All differences are statistically significant at the 95 percent confidence level.

⁸²Treasury estimate includes Fannie Mae and Freddie Mac loans serviced by participating HAMP servicers but excludes FHA and VA loans and loans that are current or less than 60 days delinquent, which may be eligible for HAMP if a borrower is in imminent default.

⁸³The enterprises define seriously delinquent loans as those that are 3 or more months past due or loans in the process of foreclosure.

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- FHA reported that about 711,000 of its loans were seriously delinquent for the month of December 2011.⁸⁴ Furthermore, between March 2010 and June 2011 FHA's serious delinquency rate ranged between 8.2 and 8.8 percent but between June and December 2011, it climbed about 1.4 percentage points to 9.5 percent.⁸⁵

Although federal agencies and the enterprises have taken steps to help ensure that servicers reached struggling borrowers, not all agencies were conducting the necessary analyses to determine which of their foreclosure mitigation actions were most effective. Specifically, we found that not all federal agencies consider current data on redefault rates and evaluate the total costs of various loan modification actions to weigh the tradeoffs between assisting borrowers to retain their homes and protecting taxpayers' financial interests. As a result, agencies may not be making the best use of foreclosure mitigation funds. Additionally, not all federal agencies analyze loan and borrower characteristics that could influence the success of these actions. Doing so would help in determining which actions would be most successful both in aiding homeowners and in containing costs. We also found some evidence to suggest that principal forgiveness as a mitigation tool could help some borrowers—those with significant negative equity—but that federal agencies and the enterprises were not using it consistently and some were not convinced of its overall merits. Moreover, there are other policy issues to be considered when determining how widely this option should be used, including moral hazard (borrowers strategically defaulting to become eligible for assistance).

Stakeholders provided us with a variety of reasons for not introducing new federal programs at this time. Specifically, most stakeholders said that introducing entirely new initiatives at this stage could be counterproductive. Such initiatives, they said, would create additional

⁸⁴FHA defines seriously delinquent loans as those 90 days or more past due or loans in the process of foreclosure or bankruptcy.

⁸⁵USDA reported that there were about 83,000 loans that were 30 days or more delinquent as of December 2011 but did not breakout those loans that were 60 or 90 days or more delinquent. Further, the number of USDA loans delinquent by 30 days or more as of December 2011 was more than double the volume compared to June 2009. VA does not publically report delinquency information about loans it guarantees. Using delinquency data reported by MBA and the volume of loan guarantees reported in VA's 2011 Annual Benefits report, we estimated that there were about 16,000 VA guaranteed loans that were 90 days or more delinquent or in the process of foreclosure during fiscal year 2011.

uncertainty in the market and could further delay a recovery because of the time and costs that would be involved in implementing them. Further, some stakeholders noted that support for new initiatives that required additional federal funding would be difficult to implement in the current budgetary environment. Stakeholders also said that not all borrowers who were at risk of foreclosure would be able to avoid foreclosure through any action and that some borrowers might not be interested in doing so. For example, Treasury officials said that some underwater borrowers could have already decided that foreclosure was in their best economic interest and may not want or seek assistance. Finally, some industry observers have argued that foreclosure mitigation efforts hinder the housing market's recovery by simply delaying unavoidable foreclosures.

Most but Not All Federal Agencies and the Enterprises Have Increased Efforts to Reach Struggling Borrowers Early in a Delinquency

All of the federal agencies—Treasury, FHA, VA, and USDA—as well as the enterprises have policies in place for servicers to follow once a borrower becomes delinquent. These policies are consistent with the results of our econometric analysis of CoreLogic and HAMP data that found that reaching borrowers early on, when they had missed fewer payments, resulted in more successful loan modifications.⁸⁶ For instance, the redefault rate for loans that were delinquent less than 60 days at the time of modification was 9 percent, but the redefault rates for loans that were delinquent 90 days or more was 17 percent. The rate was even higher for those already in foreclosure—19 percent. In general, the agencies and the enterprises require servicers to make contact with delinquent borrowers, identify the reason for the delinquency, and provide borrowers information on available options to help them resolve the delinquency. However, Treasury and FHA officials said that servicers were unable to reach many borrowers, which may hinder efforts to provide foreclosure mitigation actions. For example, servicers have

⁸⁶We analyzed a sample of loan-level data we obtained from CoreLogic which included loans that were modified sometime in the period from January 2009 through December 2010. For a detailed description of our approach, see appendix I. Results are based on those loans that received a modification that reduced the borrower's monthly payment and their performance 6 and 12 months after modification. Approximately, 88 percent of the loans used in this analysis had a monthly payment reduction and the results for this group of loans are representative of the complete data set. We developed algorithms to identify mortgages that received a modification action because direct information on loan modifications is not generally available (see app III for a detailed description). For the HAMP analysis, we analyzed the performance of loans 12 months after modification because of limitations using loan performance 6 months after modification. See appendix V for additional information on our analysis of the CoreLogic and HAMP data sets.

reported to FHA that about 13 percent of the delinquent borrowers they attempt to contact do not respond. As a result, with the exception of USDA, these agencies and the enterprises have taken a number of steps to reach more borrowers and monitor servicers' ability to reach struggling borrowers.

- In 2010, Treasury began airing nationwide public service announcements and conducting homeowner events across the country in order to raise the profile of its foreclosure mitigation programs and help struggling homeowners contact their servicers. Based upon the results from on-site and remote compliance reviews, Treasury began to rate the largest servicers' procedures and controls for reaching out to delinquent borrowers as part of its MHA Servicer Assessments.⁸⁷ Issues related to identifying and contacting potentially eligible borrowers were contributing factors to Treasury's decision to withhold servicer incentive payments from certain servicers.
- FHA requires servicers to report monthly on delinquent borrowers, including the extent of the delinquency and the most recent action the servicer has taken. In 2011, FHA piloted a scorecard designed to comprehensively evaluate servicers' loss mitigation activity, including their compliance with servicing guidelines and regulations. Further, FHA has been identifying best practices for reaching borrowers. For example, one servicer reported having increased success contacting borrowers earlier in a delinquency using text messages and email instead of telephone calls and letters, and FHA has shared this practice with other servicers.
- In 2011, Fannie Mae and Freddie Mac revised the procedures servicers must follow when contacting borrowers to help ensure that all those eligible know about the options that may be available to them. The enterprises have also developed a performance metric to track servicers' compliance with these requirements. Further, they recently implemented changes to HARP program requirements by eliminating the maximum LTV ratio and allowing servicers to solicit borrowers who may be eligible for the program. In addition, the enterprises have required servicers to report monthly on delinquent

⁸⁷Treasury's compliance activities relate only to servicers' nonenterprise MHA programs.

borrowers, including on the extent of the delinquency and the most recent action the servicer has taken.

- VA assigns a staff member to each case after a borrower becomes 60 days delinquent to monitor the servicer's efforts and provide assistance to the borrower. The VA staff member performs an "adequacy of servicing" review if the delinquency is not resolved before the borrower becomes 120 days past due on the loan. If servicing is found to be adequate at that point, VA will continue to perform these reviews every 90 days until the delinquency is resolved. If the VA staff member determines that the servicer has not taken adequate steps to reach and assist the borrower, the VA staff member will try to contact the borrower directly and then may work with the servicer to identify the best foreclosure mitigation action.

In contrast, USDA does not require servicers to report information about their efforts to reach borrowers, and its systems are not set up to determine whether servicers are complying with USDA's requirements. For example, servicers report monthly on loans that are at least 30 days delinquent, but USDA does not require servicers to report on efforts to contact the borrower early in the delinquency or on the extent to which they have offered informal foreclosure mitigation options. Once a loan is 90 days delinquent, servicers must submit servicing plans to USDA that outline recommended foreclosure mitigation actions, which USDA has to approve. But if a servicer determines that no foreclosure mitigation actions are appropriate, it does not need to submit a servicing plan. According to USDA officials, they would not have information on the servicer's efforts to reach the borrower or offers of informal actions and may not become aware of the servicer's decision not to offer a formal foreclosure mitigation action until after the loan goes into foreclosure and the servicer files a claim. USDA officials said that they review each loss claim to determine whether the servicer followed requirements for evaluating the borrower for foreclosure mitigation options. However, the absence of comprehensive and timely information limits USDA's ability to assess and identify opportunities to improve servicers' efforts to reach struggling borrowers and prevent foreclosures.

The enterprises and Treasury have adopted additional changes to policies and procedures with the goal of expanding the reach of existing programs to additional borrowers. The enterprises' standard modification programs, which were announced in mid-2011 under FHFA's Servicer Alignment Initiative, are intended to help ensure that borrowers who do not qualify for HAMP Tier 1 modifications are treated consistently at the

next step in the evaluation process. Before these programs were put in place, terms of non-HAMP modifications varied among the enterprises and were set independently by Fannie Mae or Freddie Mac. Treasury's recently announced HAMP Tier 2 modification largely aligns with the enterprises' standard loan modification and is intended to expand HAMP to a larger pool of potentially eligible borrowers. This change provides servicers and borrowers with consistency across programs, regardless of the investor (i.e., Fannie Mae or Freddie Mac, private-label security owner, private lender). Further, this change could simplify servicers' operations, improve their efficiency, and enhance their capacity, all of which have been long-standing concerns.

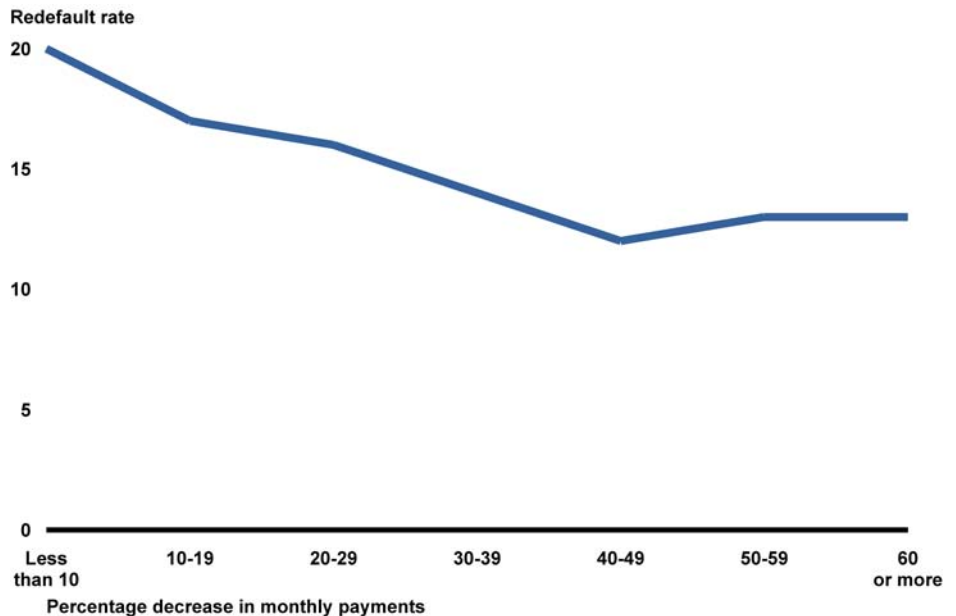
FHA, VA, and USDA Have Not Done the Analyses Needed to Minimize Costs and Assess the Effectiveness of their Actions

Treasury and the enterprises incorporate analysis of long-term costs into their loss mitigation program design and management through redefault models and analysis, but the other agencies do not. The models that Treasury and the enterprises use incorporate data on the likelihood of redefault for different loan and borrower characteristics and are tailored to their particular pools of borrowers and costs. Specifically, the models incorporate data on redefault rates that are associated with loan and borrower characteristics, such as borrower income and expenses, delinquency status, current LTV, borrower credit score, and size of monthly payment reduction. Treasury and the enterprises use the results from these analyses to determine the eligibility requirements and loan modification terms for their loan modification programs. As part of this analysis, Treasury and the enterprises analyze redefault rates—one of the most common measures of the effectiveness of foreclosure mitigation efforts—for various types of foreclosure mitigation actions. According to Fannie Mae and Freddie Mac officials, recent changes to their non-HAMP loan modification programs—particularly the introduction of a trial period plan—resulted from analysis of differences in redefault rates and the size of monthly payment reduction between their various loan modification actions.

Our own analysis of the performance of loans identified certain loan and borrower characteristics that reduce the likelihood of redefault. When controlling for observable borrower and loan characteristics, our analysis of CoreLogic data found that greater reductions in monthly mortgage

payments reduced the 6-month redefault rate (see fig. 9).⁸⁸ We also found that reducing monthly mortgage payments by 40 to 49 percent resulted in the lowest 6-month redefault rates. Specifically, loans with monthly payment reductions of 40 to 49 percent had redefault rates of 12 percent—as compared to a redefault rate of 20 percent for loans that received a payment reduction of less than 10 percent. Larger reductions in the monthly payment—that is, 50 percent or more—did not result in further improvement in the 6-month redefault rate.

Figure 9: Percentage Decrease in Monthly Payments and 6-month Redefault Rates of Loans Modified, January 2009 through December 2010



Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

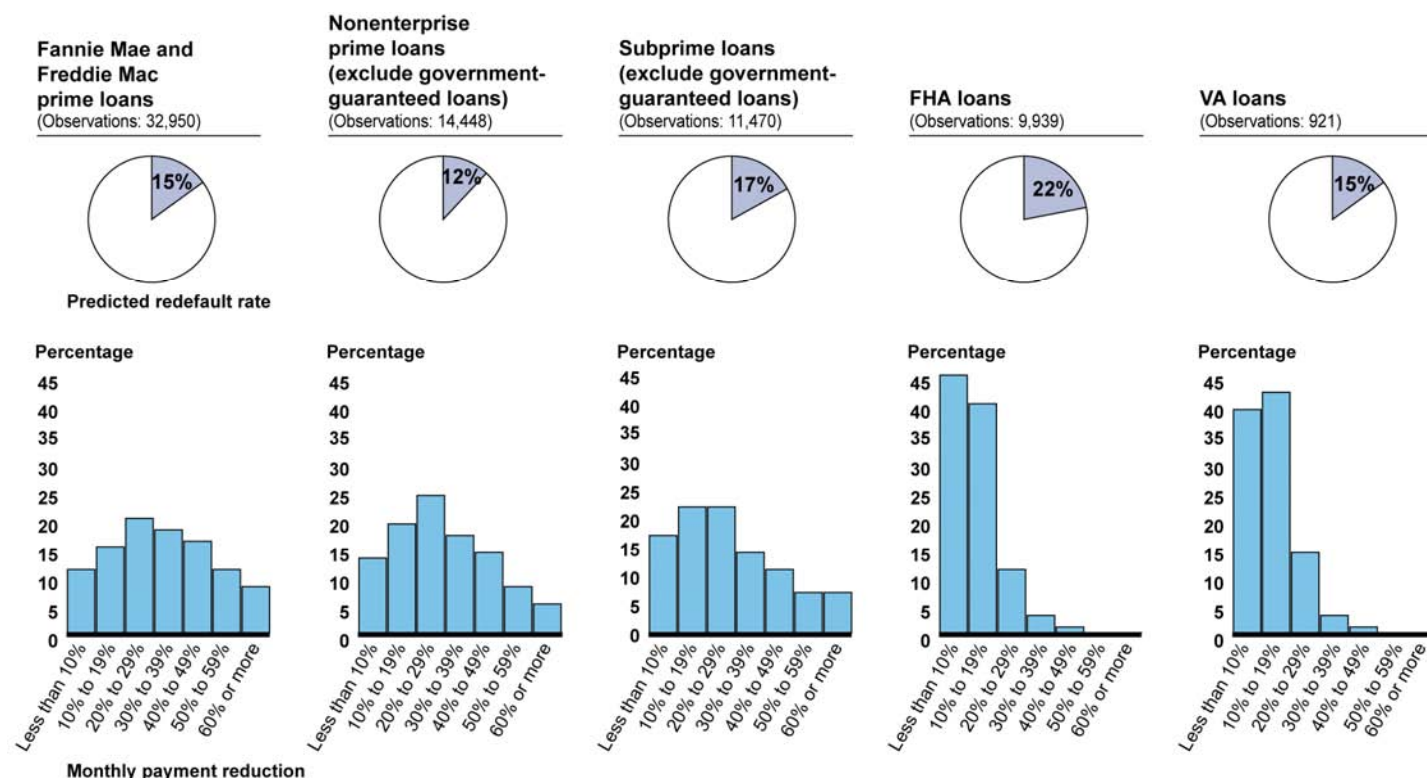
Note: The results were similar for the performance of the loans 12 and 18 months after modification. Appendix V includes additional discussion of the methodology and results of our econometric analysis.

⁸⁸The results were similar for the performance of the loans 12 and 18 months after modification. Appendix V includes additional discussion of the methodology and results of our econometric analysis.

According to our analysis, payment reductions for the majority of FHA and VA loan modifications were smaller than payment reductions for other types of modified loans.⁸⁹ As figure 10 illustrates, 45 percent of FHA-modified loans and about 40 percent of VA-modified loans had payment reductions of less than 10 percent of the original mortgage payment. In contrast, the majority of modifications for enterprise-prime loans, nonenterprise-prime loans, and subprime loans had resulted in payment reductions greater than 20 percent, and in some cases were much larger. For example, more than half of enterprise-prime modified loans and 39 percent of subprime loans had payment reductions of 30 percent or more of the original monthly mortgage payment. Furthermore, our analysis found that the predicted 6-month redefault rate for FHA-modified loans was several percentage points higher than for the other loan types—for example, FHA’s rate was 22 percent, while the rate for subprime loans was 17 percent. However, the predicted 6-month redefault rate for VA-modified loans was 15 percent, which was similar to other loan types.

⁸⁹The CoreLogic data does not identify USDA loans, as a result, we were not able to analyze USDA loans separately.

Figure 10: Predicted 6-Month Redefault Rates and Distribution of Payment Reductions of Loans Modified by Loan Type and Size of Payment Reduction, January 2009 through December 2010

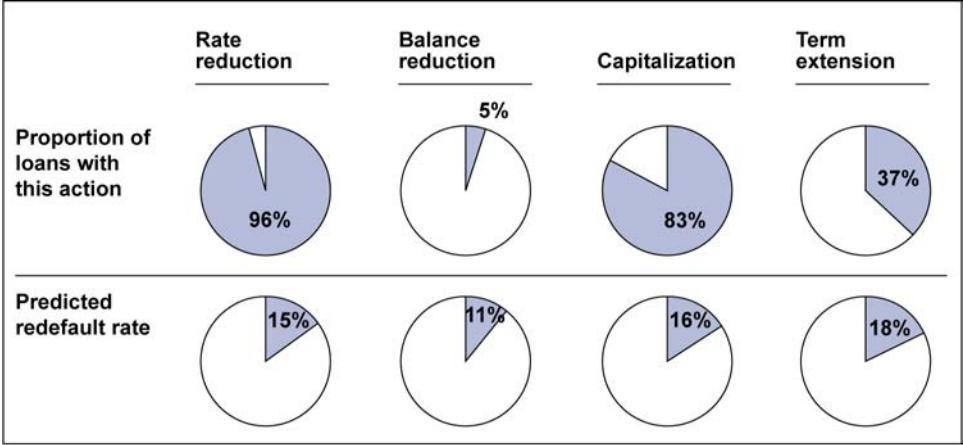


Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

According to our analysis of CoreLogic data, modifications resulting in payment reductions can involve one action or a combination of actions, such as lowering the interest rate, reducing the loan balance (through forgiving or forbearing principal), capitalizing past due amounts, and extending the term of the loan. Some of these actions were much more commonly used than others—for example, interest rate reductions and capitalization were used far more frequently than reducing the loan balance (see fig. 11). Further, our analysis indicated that the predicted 6-month redefault rates could differ depending on the action used. Modifications that included balance reductions had a redefault rate of 11 percent, while modifications that included a rate reduction, capitalization, or term extension had redefault rates of 15, 16, and 18 percent, respectively. Our analysis of HAMP data indicated that the baseline 12-month redefault rate for all modified loans was 15 percent. Among HAMP loans that received principal forbearance, the rate was slightly lower—12 percent. However, the rate for HAMP loans that received principal

forgiveness was even lower—8 percent. See appendix V for a detailed description of the relationship between the modification action type and loan performance.

Figure 11: Volume of Modification Actions and Predicted 6-Month Redefault Rates of Loans Modified by Modification Type, January 2009 through December 2010

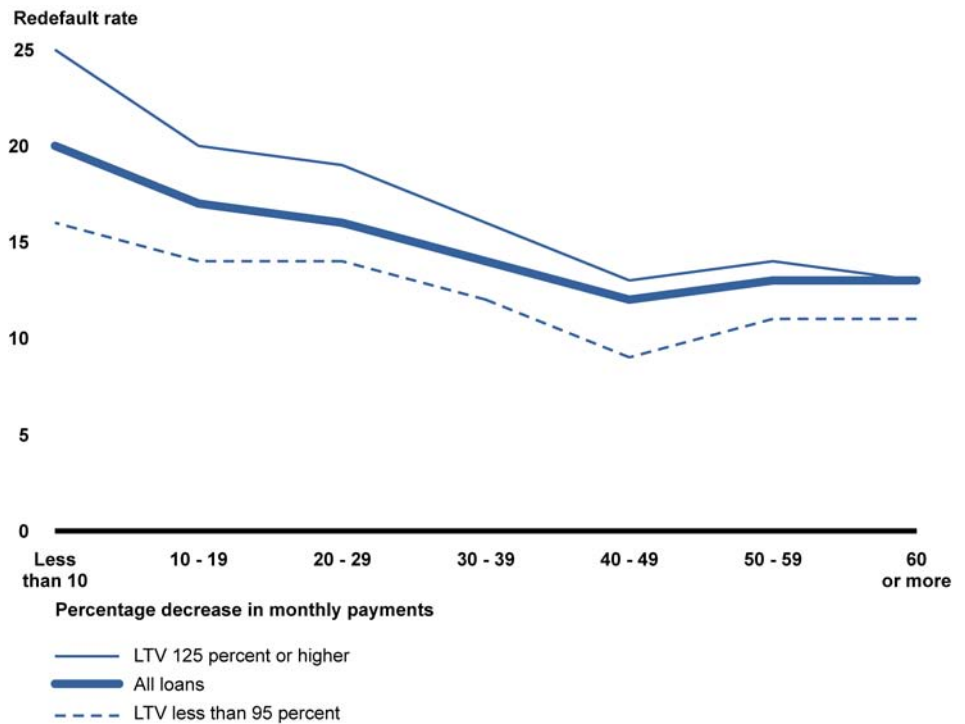


Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Note: Modifications can involve one action or a combination of actions.

Further, loan modifications for borrowers with significant negative equity (LTV of 125 percent or higher) can be as effective as modifications for borrowers with equity in their home. For example, the lowest redefault rates for both borrowers with significant negative equity and borrowers with LTV less than 95 percent are achieved with payment reductions of 40 to 49 percent (see fig 12).

Figure 12: Redefault Rate by Percentage of Monthly Payment Reduction for Loans Modified by Selected LTV Categories, January 2009 through December 2010



Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

We also found that certain borrower and loan characteristics affected redefault rates. For instance, borrowers who were the most delinquent at the time of modification had higher redefault rates than less delinquent or current borrowers. Borrowers who were delinquent 90 days or more had a redefault rate of 17 percent, and those already in foreclosure had a redefault rate of 19 percent. But the rate for borrowers who had been delinquent for less than 60 days was 9 percent. Furthermore, modified loans with certain characteristics were more likely to redefault: loans in areas where the unemployment rate had increased since modification, loans receiving higher interest rates at modification, or loans that were originated with adjustable rather than fixed rates.⁹⁰

⁹⁰See appendix V for the methodology and results of our econometric analysis.

Generally, federal agencies are responsible for helping ensure that loss mitigation programs reduce taxpayers' costs. For example, FHA requires and USDA encourages servicers to use foreclosure mitigation actions to minimize losses from loans going to foreclosure. Similarly, one of the core values of VA is to be a good steward of financial resources that taxpayers provide to the agency. In addition, in estimating costs of loan guarantee programs, agencies are required to consider the long-term costs of the loan guarantee on a net present value basis. Long-term costs include payments by the government to cover defaults and delinquencies, among other things. Further, according to the Office of Management and Budget loss mitigation actions should be used only if they are likely to be less expensive than the cost of default or foreclosure. And, as noted earlier, both the Treasury and the enterprises analyze the performance of modified loans and consider loan and borrower characteristics to better understand the long-term costs of various loan modification actions. Finally, as we previously reported, agencies could use performance information to identify problems, take corrective action, and improve programs.⁹¹ Evaluating the costs of various loan modification actions enables agencies to more effectively weigh the tradeoffs between helping borrowers keep their homes and protecting taxpayers' interests.

FHA officials stated that they considered loan performance and long-term costs in the initial design of the program in 1996. However, FHA has not updated its analysis of loan performance and long-term costs since this time to reflect changes to its loss and foreclosure mitigation activities—including the introduction of FHA-HAMP—or the housing market. In addition, FHA officials told us that they had not assessed the extent to which individual servicers considered long-term costs in making decisions about offering loss and foreclosure mitigation options to borrowers.⁹² Recently, FHA began to require trial modification payment periods for certain foreclosure mitigation actions. FHA expects this will reduce redefault rates.

FHA has recently begun to calculate redefault rates for specific home retention actions and plans to examine these data in the future. FHA officials stated that they regularly monitor redefault rates of delinquent

⁹¹See GAO, *Managing for Results: Enhancing Agency Use of Performance Information for Management Decision Making*, [GAO-05-927](#) (Washington, D.C.: Sept. 9, 2005).

⁹²FHA regularly evaluates servicer performance against a standard set of indicators.

loans as part of their oversight of servicer activities. For example, FHA set an annual performance goal beginning in fiscal year 2010 for its combined home retention actions and has used the results of this monitoring to provide oversight and training to servicers to reduce redefault rates. However, this goal is for the actions in the aggregate and does not take into account individual actions, such as FHA's standard loan modification and the FHA-HAMP modification. Further, FHA has not used this information to analyze the effectiveness of its programs. Recently, FHA began to calculate redefault rates for specific home retention actions and plans to continue to calculate and examine these data in the future.

FHA currently collects limited data on loan and borrower characteristics at the time of a foreclosure mitigation action. FHA collects information such as delinquency status and the amount of the new principal and interest payment for some modified loans.⁹³ However, it does not currently collect other key information on borrowers—such as borrower income and expenses at the time of foreclosure mitigation action. Analyses of the characteristics of modified loans and their borrowers could help in adjusting loss mitigation policies. Further, this information could be used to help identify which foreclosure mitigation action would be most appropriate for a borrower. According to FHA officials, servicers are required to provide only minimal data on loan and borrower characteristics at the time of a foreclosure mitigation action, as the responsibility for determining eligibility for loss mitigation activities rests with the servicer and not FHA.⁹⁴ In October 2011, a contractor began work to assess FHA's oversight of servicers' loss mitigation activities. The assessment identified loan and borrower characteristics commonly collected within the industry, which include current LTV as well as information needed to calculate the change in monthly payment, among other things. The assessment concluded that FHA should collect additional loan-level data from servicers to enable FHA to analyze the performance of modified loans.

⁹³FHA collects the majority of these data through its loss claim system. The system is used by servicers to file for incentive payments along with other payments due to the servicer for the loss mitigation action for FHA's special forbearance, standard loan modification, partial claim, and FHA-HAMP home retention loss mitigation actions.

⁹⁴FHA sets broad guidelines that govern servicers' determination of borrower eligibility for loss mitigation activities.

FHA is considering changes to its current approach that may facilitate the analysis of long-term costs. In December 2010, a team of consultants assisting the agency to establish the Office of Risk Management advised FHA to use an NPV model to help identify appropriate loss mitigation options and maximize the economics of modifications. In March 2012, FHA indicated that it planned to develop a loss model to inform its loss mitigation approach. The use of a loss model would help the agency better understand its programs' long-term costs. FHA officials told us that they planned to reassess the sequence of their foreclosure mitigation actions, including the point at which borrowers would be evaluated for an FHA-HAMP loan modification.⁹⁵ However, as of April 2012, FHA had not decided to use an NPV model. FHA officials raised concerns about using an NPV approach. Specifically, they noted that FHA policy requires servicers to work with all delinquent borrowers to find long-term solutions that, if possible, permit the borrower to retain homeownership. Further, FHA does not use results from analyses to provide the basis for not offering assistance to struggling homeowners. Incorporating an NPV model into FHA's foreclosure mitigation toolkit would not preclude servicers from working with all delinquent borrowers or offering assistance. Instead, it would likely provide greater clarity about the predicted economic outcome of specific foreclosure mitigation actions and would help servicers better prevent avoidable foreclosures. Further, incorporating an NPV model would help balance the tradeoffs between assisting borrowers to keep their homes and helping ensure the lowest cost to the taxpayer.

VA also has not incorporated analyses of long-term costs into its loss mitigation programs. Although VA collects some information about the performance of modified loans and modified loan characteristics, it does not currently analyze its portfolio to understand differences in performance based on type of loss mitigation actions or for loan and borrower characteristics.⁹⁶ The agency also does not currently evaluate data servicers provide on loan performance and other loss mitigation actions to determine redefault rates and has not used the information

⁹⁵As of March 2012, FHA required servicers to consider foreclosure mitigation actions in the following order: special forbearance, standard loan modification, partial claim, and then FHA-HAMP.

⁹⁶This Early Payment Default performance measure is currently used by VA to determine whether a new reason cause the default and to monitor servicer compliance with underwriting requirements.

servicers report on loan and borrower characteristics to determine the optimal change in monthly payment amounts for future modifications. Finally, VA requires servicers to collect data on borrowers' income and expenses but not to report the data to the agency. According to VA officials, VA monitors the effectiveness of its loss mitigation activities on a case-by-case basis by assigning a VA loan technician to oversee situations that cannot be resolved and work directly with the borrower, if required.

Finally, USDA has not incorporated analyses of long-term costs into its foreclosure mitigation program, which is designed to have the least upfront cost to the government. As a result, USDA does not require servicers to consider long-term costs in determining which mitigation options to offer borrowers. It collects loan-level data from servicers on loan performance and type of action taken. Further, when servicers submit a request to provide a loss mitigation action to a borrower, they provide data on certain loan and borrower characteristics, including the monthly payment amount after the action, verified income and expenses, and the property value (which could be used to calculate LTV). However, USDA has not analyzed these data, in part because the data are provided through two different reporting systems and would have to be matched in order to be useful.⁹⁷ Although the agency had not previously tried to match data, USDA officials said that it would be possible to match data on individual borrowers. Further, USDA officials stated that their loss mitigation data collection systems were outdated and noted that the agency had plans to update them to allow the agency to more systematically capture data on their loss mitigation activities. However, USDA officials were uncertain of the timetable or availability of funding to implement these changes.

Because FHA does not analyze the performance of loss mitigation activities by loan and borrower characteristics and VA and USDA do not analyze the performance of these activities by type of home retention action or loan and borrower characteristics, these agencies have a limited understanding of the ultimate costs of their loss mitigation programs. As a result, their loss mitigation activities may not be effectively balancing the

⁹⁷Servicers report to USDA on loan performance through USDA's Electronic Data Interchange (EDI) system. USDA collects data from servicers on the type of formal loss mitigation action offered to borrowers and certain loan and borrower characteristics through its loss mitigation servicing plans.

tradeoffs between assisting borrowers to keep their homes and helping ensure the lowest cost to the taxpayer. If these agencies better understood the performance and ultimate costs of each home retention action, they could, for example, decide that it was in their best financial interest, as well as the borrowers, to change the order in which their loss mitigation options were offered or to adjust their eligibility requirements. And by collecting additional data and conducting more comprehensive analyses, they could better inform decision makers, helping them to ensure that federal foreclosure mitigation programs are as effective as possible and, at the same time, limiting long-term costs. Such efforts would be key to helping address the ongoing problems of the housing market, including the high volume of seriously delinquent loans that face an elevated risk of foreclosure.

Some Evidence Suggests That Principal Forgiveness Could Be an Effective Foreclosure Mitigation Action in Certain Circumstances, but Experience with This Tool Is Limited

To date, principal forgiveness as a method of addressing defaults and foreclosures among borrowers that have significant negative equity has played a limited role in foreclosure mitigation efforts. Principal forgiveness involves reducing the amount the borrower owes on a mortgage without requiring that the amount of the reduction be repaid. As a result, this action not only lowers the borrower's monthly mortgage payment but allows underwater borrowers the opportunity to rebuild equity in their homes more quickly. Our analysis found that, although the redefault rate for the loans that received principal forgiveness was lower than the overall pools of modified loans, the effects of changing the amount of principal forgiven on loan performance were inconclusive. However, private investors and lenders that hold loans in their portfolio have used principal forgiveness, suggesting that this foreclosure mitigation tool may be effective in certain circumstances.

Between 2009 and 2011, the prevalence of principal forgiveness among modified loans ranged from about 3 to 13 percent, and averaged about 6 percent (see fig 13). During the fourth quarter of 2011, about 9 percent (9,867) of modifications included principal forgiveness—up from about 3 percent during the first quarter of 2011, according to OCC.⁹⁸ In contrast, more than three-quarters of all modifications during the fourth quarter of

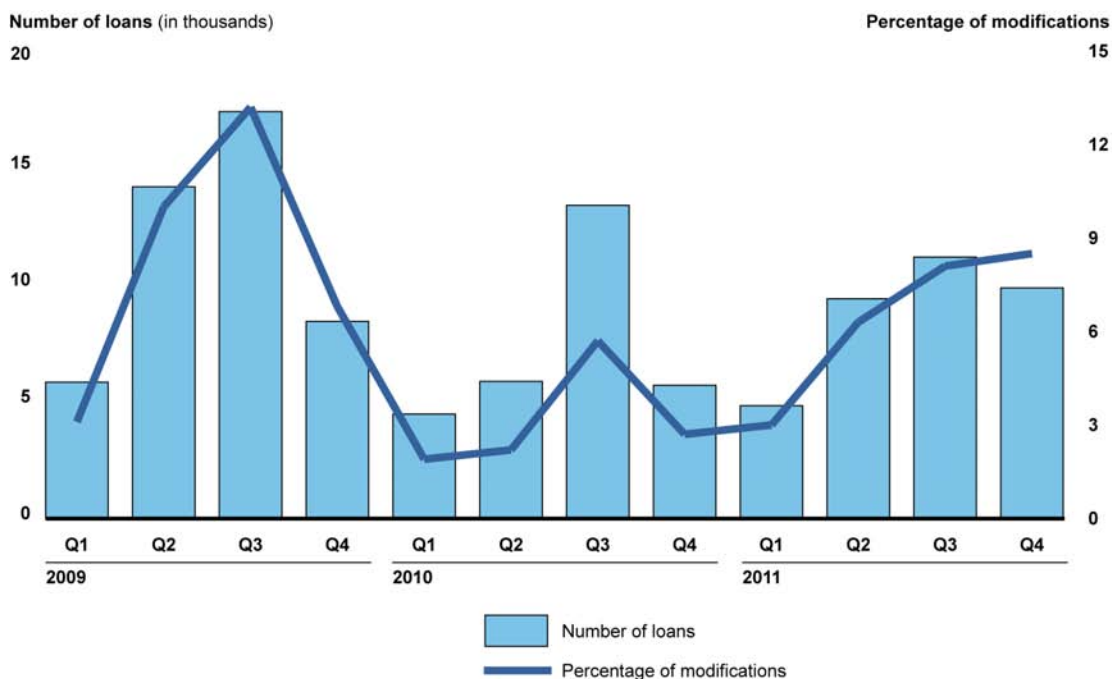
⁹⁸OCC Mortgage Metrics Report (Treasury). OCC's data on foreclosure mitigation efforts are based on loan-level data submitted by nine large servicers. OCC estimated that these nine servicers represented about 60 percent of all first lien residential mortgages outstanding.

2011 included capitalization or rate reduction, more than half received a term extension, and almost a quarter of modifications included principal forbearance.⁹⁹ Principal forgiveness was more prevalent among HAMP modifications (about 16 percent) than among all modifications (about 9 percent). At the same time, OCC data indicated that the prevalence of principal forgiveness varied by market segment and investor. Specifically, principal forgiveness was more prevalent among subprime loans (about 13 percent) than prime loans (7 percent). Further, principal forgiveness was used primarily for loans held in portfolio or serviced for private investors. FHFA does not permit the enterprises to use principal forgiveness as a loan modification action. HUD, USDA, and VA are not authorized to support principal forgiveness.¹⁰⁰

⁹⁹Under principal forbearance, the outstanding balance on the borrower's mortgage is also reduced; however, the borrower is required to repay the amount of the principal reduced when the property is sold, transferred, or the first lien is paid in full.

¹⁰⁰HUD stated that its statutory authority is for principal deferment (forbearance) and not principal reduction. According to USDA officials, there is no principal forgiveness in the USDA guaranteed loan program because it is neither authorized nor permitted. Similarly, VA officials stated that VA does not have the authority to pay a claim before a loan is terminated, thereby, precluding the use of VA funds to provide financial incentives to servicers for forgiving principal as part of a loan modification.

Figure 13: Volume of Modifications with Principal Forgiveness Actions, 2009 through 2011



Our analysis of Treasury data for the HAMP program (including Fannie Mae and Freddie Mac loans) found that the 12-month redefault rate for loans that received principal forgiveness was 8 percent, while the rate for loans receiving principal forbearance was 12 percent.¹⁰¹ Both of these figures are lower than the overall redefault rate for all HAMP loans, which was 15 percent. Our analysis of HAMP data, when controlling for observable borrower and loan characteristics, found that the effect of principal forgiveness on the redefault rate was inconclusive.¹⁰² However, larger balance reductions through principal forbearance were found to lower the redefault rate. The inconclusive results are likely attributable to the fact that principal forgiveness has been used sparingly. While principal forgiveness has always been allowed under HAMP, Treasury did not start offering incentives to investors to forgive principal until October

¹⁰¹Fannie Mae and Freddie Mac loan modifications do not include principal forgiveness as a component.

¹⁰²The results were not statistically significant at the 10 percent level.

2010. Since few HAMP modifications have incorporated principal forgiveness, our ability to fully examine the impact of this action on redefault rates was limited. For the CoreLogic data, we analyzed the performance of loans that received a balance reduction, either through principal forgiveness or principal forbearance, and found that loans that received a balance reduction were less likely to redefault.¹⁰³ Specifically, the overall 12-month redefault rate of modified loans (loans comparable to HAMP loans) was 26 percent. In contrast, the redefault rate of loans that received a balance reduction was 15 percent.¹⁰⁴

Treasury has taken recent action to further encourage servicers to use principal forgiveness. As discussed earlier, since October 2010 Treasury has required servicers to evaluate severely underwater HAMP applicants for its Principal Reduction Alternative, which provides investors in nonenterprise loans with incentive payments when forgiving principal as part of a HAMP modification. In January 2012, Treasury announced that HAMP would be modified to further encourage investors to offer principal reductions by increasing the incentives payments. In the past, investors received between 10 and 21 cents on the dollar to write down principal on loans. As of March 2012, Treasury began paying 30 to 63 cents on the dollar.¹⁰⁵

FHFA, the conservator and regulator of Fannie Mae and Freddie Mac, has not allowed them to use their own funds to offer principal forgiveness. FHFA has argued that it has a statutory responsibility to preserve and conserve the assets and property of the regulated entities. At the same time, FHFA noted that it has a statutory responsibility to maximize assistance for homeowners to minimize foreclosures while taking into consideration the cost to taxpayers of any action undertaken. FHFA performed an initial analysis comparing the effectiveness of principal forbearance to principal forgiveness as a loan modification tool in December 2010 and updated it in June and December 2011 using Treasury's HAMP Net Present Value (NPV) model. The agency

¹⁰³We were not able to assess the impact of principal forgiveness using CoreLogic data—which include loans modified through federal and nonfederal programs—because we were not able to distinguish between principal forbearance and principal forgiveness.

¹⁰⁴See appendix V for additional information.

¹⁰⁵For loans that have missed more than six payments in the preceding 12 months, the incentive payment is 18 cents on the dollar.

concluded that although both forgiveness and forbearance reduce the borrower's payment to the same affordable level, forbearance achieves marginally lower losses for the taxpayer than forgiveness.¹⁰⁶ These analyses have provided the basis for FHFA's current policy decision to not permit the enterprises' use of principal forgiveness. However, some housing market observers have been critical of FHFA's approach to evaluating the utility of principal forgiveness. For example, one industry observer noted that FHFA's analysis assessed the costs of writing down all loans in the enterprises' portfolios with negative equity instead of the possibility of using principal forgiveness for some borrowers and a forbearance strategy for others based on the borrowers' and loans' characteristics. For example, one Treasury official has been quoted as stating that principal forgiveness may have the best result for borrowers above 120 LTV ratios that can prove some type of hardship. Other concerns raised by industry observers included FHFA's use of information obtained at loan origination rather than current data (i.e., Fair Isaac Corporation (FICO) credit scores, income, etc.) and not following HAMP modification rules for the extent of the monthly payment reduction, which require a 31 percent debt-to-income target rather than a prescribed LTV reduction.

In January 2012, Treasury announced that it would pay incentives to the enterprises if FHFA allowed servicers to forgive principal as part of Fannie Mae and Freddie Mac HAMP modifications, a change that could significantly alter FHFA's position. Shortly after Treasury's announcement, FHFA began to conduct analyses to reevaluate the use of principal forgiveness as a foreclosure mitigation tool. FHFA updated its earlier analyses by incorporating the impact of receiving incentive payments from Treasury and altered its analyses to address some of the critiques made of its previous approach. Specifically, FHFA indicated that it made adjustments to the loan origination data to better reflect likely changes in borrowers' FICO scores and housing payment debt-to-income ratios, and used zip code as opposed to state-level indices to more

¹⁰⁶Using the HAMP NPV model for borrowers with current LTV ratios greater than 115 percent, FHFA compared projected losses to Fannie Mae and Freddie Mac from borrowers receiving principal forbearance modifications to borrowers receiving principal forgiveness modifications as allowed in the HAMP program. The model, and hence the analysis, takes into account the sustainability of the modifications and assumes that principal forgiveness reduces the rates of redefault on the loans to a greater extent than would forbearance. However, in the event of a successful modification, forbearance offers greater cash flows to the investor than forgiveness.

accurately identify high LTV borrowers. In addition, FHFA officials told us that they used a 31 percent debt-to-income target in their updated analyses. According to FHFA officials, they also modified their current analysis to fully consider HAMP and HAMP PRA modification rules. FHFA officials told us that they believed that this change addressed the critique about using a mutually exclusive approach of using principal forgiveness versus forbearance for all loans with negative equity.

As of June 2012, FHFA had not made a final decision on allowing the enterprises to engage in HAMP principal forgiveness modifications. According to FHFA, its preliminary analysis, as of April 2012, showed a positive benefit of \$1.7 billion to the enterprises of accepting \$3.8 billion in Treasury incentive payments for performing loan modifications involving principal forgiveness. Further, FHFA noted any savings, from the perspective of the federal government, would be negligible due to the draw on the Treasury. However, all TARP-funded housing programs are expenditures, including incentives paid to the nonenterprise investors, servicers, and borrowers. Further, the payment of incentives to the enterprises for principal forgiveness modifications would be paid out of the \$45.6 billion that Treasury has already obligated to be used for preventing avoidable foreclosures and preserving homeownership. FHFA's estimate was based on the nearly 700,000 loans in Fannie Mae's and Freddie Mac's portfolios considered to be eligible for a HAMP loan modification that were severely underwater (current LTV greater than 115) as of June 30, 2011, and were either already in delinquency status or loans that could become delinquent within 6 months.¹⁰⁷ According to FHFA, the actual number of borrowers who would receive principal forgiveness would likely be lower due to other eligibility requirements and because eligible borrowers may choose not to participate. Additionally, FHFA noted that HAMP principal forgiveness modifications would not expand the number of borrowers who are eligible to obtain modifications under HAMP because the eligibility requirements are the same.

Separately, the enterprises assessed the feasibility of principal forgiveness, but their analyses focused on different issues and produced different results. Before Treasury announced that it would pay incentives to the enterprises, Fannie Mae assessed the affect of principal

¹⁰⁷ FHFA estimated that about 5 percent of the enterprise's loan portfolios that had a current LTV greater than 115 percent but were current on their payments as of June 30, 2011, would likely become delinquent during the next 6 months based on historical data.

forgiveness on loan modifications through two small pilot programs, but found that the pilots did not provide any indication that performance varied between modifications with and without principal forgiveness. However, Fannie Mae analysis did not address the financial impact to the enterprise of receiving Treasury HAMP PRA incentive payments. Freddie Mac prepared estimates of the savings that principal forgiveness might provide using the HAMP NPV model by assuming principal forgiveness to a 105 percent LTV. Given the underlying assumptions, it found that for 100,000 borrowers, the inclusion of the recently proposed Treasury incentive payments could offset losses to the enterprises by approximately \$480 million as opposed to performing a loan modification without subsidies from Treasury.

Aside from the direct financial impact to the enterprises of receiving incentive payments for participating in HAMP's PRA, FHFA and the enterprises have raised concerns about borrowers strategically defaulting to become eligible for principal forgiveness—moral hazard—as well as the additional costs and time this approach would require. Nonetheless, there remain techniques for mitigating its impact on borrower behavior, most notably requiring that the borrower already be in default and prove a financial hardship. All three entities also pointed to the costs for developing information systems and the time it would take the enterprises and its servicers to implement principal forgiveness. For example, according to Fannie Mae officials, these costs could be as high as tens of millions of dollars and could require up to 22 to 24 months. FHFA noted that it was still evaluating the direct operational costs associated with adopting principal forgiveness under HAMP and that those costs were not trivial. However, FHFA has not indicated whether those direct costs are likely to be greater than the \$1.7 billion in financial benefits that it determined would likely accrue to the enterprises from receiving Treasury HAMP PRA incentive payments. Moreover, as noted by FHFA, the anticipated benefit of principal forgiveness is that, by reducing foreclosures relative to other modification types, losses to the enterprises would be lowered and house prices would stabilize faster, thereby producing broader benefits to all market participants.

Conclusions

Despite the unprecedented scale of federal and nonfederal efforts to help borrowers facing potential foreclosure, key indicators suggest that the U.S. housing market remains weak and that high foreclosure levels will likely persist in the foreseeable future. While these efforts resulted in more than 4 million loan modifications between January 2009 and December 2011, the volume of modifications has declined since 2010

and millions of borrowers have sought but have been unable to receive a permanent modification. Specifically, our analysis of mortgage data showed that 1.9-3 million loans still had characteristics associated with an increased likelihood of foreclosure, such as serious delinquency and significant negative equity (LTV ratio of 125 or higher), as of June 2011. Further, Treasury estimated that there were 900,000 borrowers who were seriously delinquent and potentially eligible for its HAMP modification program as of December 31, 2011. Another almost 2 million FHA, Fannie Mae, and Freddie Mac loans also were seriously delinquent. In addition, indicators such as home prices and home equity remain near their postbubble lows. And finally, as of December 2011, total U.S. household mortgage debt was \$3.7 trillion greater than households' equity in their homes.

Despite their efforts, neither federal agencies nor nonfederal entities have been able to come up with a clear path for resolving the foreclosure crisis. A number of factors have hindered foreclosure mitigation efforts, including competing priorities (e.g., balancing short-term versus long-term costs, mitigating moral hazard) and ongoing developments, such as declining house values, and a high unemployment rate. Ultimately, what will likely be required will be a variety of approaches aimed at removing various obstacles to existing foreclosure mitigation strategies. Comprehensive data-gathering and analysis will also be needed to help ensure that federal foreclosure mitigation programs are effective and also limit fiscal costs and the potential for negative long-term consequences from government intervention.

Our analysis found that several agencies and the enterprises could do more to better manage the costs associated with foreclosure mitigation efforts and step up their efforts to reach and help borrowers, specifically the following,

- Treasury has not reassessed its need for the letter of credit on FHA's Short Refinance program, which will not likely reach the number of borrowers that it initially estimated it would help. For this reason, Treasury may not need to maintain an \$8 billion letter of credit for the program and thus may be able to cut costs by reducing or eliminating the fees associated with the letter.
- One of the key findings of our econometric analysis of the CoreLogic and HAMP loan-level data was that loan modifications should be made before borrowers become seriously delinquent on their mortgage payments in order to obtain the best results. Although

USDA requires servicers to attempt to work with borrowers before they become seriously delinquent, USDA does not collect information from servicers about these efforts. Moreover, its monitoring and data collection to ensure that servicers are complying with its requirements to reach distressed borrowers before they become seriously delinquent are limited. Collecting and analyzing data would provide USDA with a more complete picture of how well servicers are reaching distressed borrowers and preventing avoidable foreclosures.

- FHA, VA, and USDA have not fully analyzed the costs and benefits of their foreclosure mitigation actions to help ensure that both borrowers and taxpayers benefit from efforts to keep homeowners in their homes. Although FHA has begun to calculate redefault rates for specific home retention actions, it has not used this information to assess the effectiveness of its foreclosure mitigation efforts. Doing so is particularly important since FHA loan modifications typically do not reduce borrower's monthly payments to the levels that our analysis indicated result in more sustainable modifications. Further, VA and USDA do not routinely calculate redefault rates for specific types of home retention actions—such as their various loan modification programs—although additional efforts to calculate this performance data would provide these agencies with better information to manage their foreclosure mitigation efforts. In addition, our analysis of the performance of loans identified key loan and borrower characteristics that reduced the likelihood of redefault. Specifically, we found that the size of payment change as well as the current LTV and delinquency status at the time of modification greatly influenced the success of a loan modification. However, FHA, VA, and USDA have not assessed the impact of loan and borrower characteristics on the performance of their foreclosure mitigation efforts. In some cases, these agencies do not have the data needed to conduct these analyses. In contrast, Treasury and the enterprises routinely calculate and evaluate this performance information. For example, the enterprises based recent changes to their non-HAMP loan modification programs on their analysis of the size of monthly payment reductions on redefault rates. Without these types of analysis and data, FHA, VA and USDA cannot, on a regular basis, evaluate the merits of the different home retention actions and use the information to identify opportunities to improve program performance.

Finally, several federal agencies and the enterprises continue to make changes and enhancements to their foreclosure mitigation efforts to assist borrowers struggling to avoid foreclosure. For example, Treasury recently announced a number of changes to HAMP to increase the number of

borrowers helped by the program, including targeting efforts to help underwater borrowers by tripling the incentives paid to investors for principal forgiveness and offering incentive payments to the enterprises for loan modifications that include principal forgiveness. In response, FHFA is currently reevaluating its prohibition against the use of Fannie Mae and Freddie Mac funds for principal forgiveness. Although permitting the enterprises to offer principal forgiveness would not expand the numbers of borrowers eligible for a HAMP modification, FHFA's preliminary analysis indicated that the Treasury incentive payments would result in a positive benefit to the enterprises of \$1.7 billion as opposed to performing traditional HAMP modifications for severely underwater borrowers. FHFA and the enterprises have noted that there would be various costs associated with adopting a principal forgiveness program that have not yet been fully determined, thus, delaying a decision on whether the enterprises will engage in principal forgiveness. Given the December 31, 2013, deadline for entry into a HAMP permanent loan modification and the lead time required for the enterprises to implement a principal forgiveness program, it is critical that FHFA take the steps needed to expeditiously make a decision about allowing the enterprises to engage in HAMP principal forgiveness modifications. As estimated by FHFA, nearly 700,000 severely underwater borrowers could potentially be eligible if the enterprises were to offer HAMP modifications with principal forgiveness.

As the enhanced efforts pick up speed, it may be possible to identify further enhancements that would help both struggling homeowners and the overall economy. However, the ability of federal agencies and the enterprises to make such determinations is unclear, unless they collect and analyze the data needed to demonstrate the success and cost-effectiveness of individual actions. This information can help program managers and policymakers decide what further steps, if any, to take in their efforts to mitigate the foreclosure crisis.

Recommendations

To help ensure Treasury is making effective and efficient use of its resources, Treasury and FHA should update their estimates of participation in the FHA Short Refinance program given current participation rates and recent changes to the program. Treasury should then use these updated estimates to reassess the terms of the letter of credit facility and consider seeking modifications in order to help ensure that it meets Treasury's needs cost-effectively.

In order to better ensure that servicers are effectively implementing the agency's loss mitigation programs and that distressed borrowers are receiving the assistance they need as early as possible before they become seriously delinquent, we recommend that the Secretary of the Department of Agriculture require servicers to report information about their efforts to reach distressed borrowers. For example, servicers could report on their efforts to reach borrowers and whether borrowers have responded to outreach from the servicer regarding early delinquency interventions and are receiving informal foreclosure mitigation actions. Further, the Secretary of USDA should determine the extent to which distressed borrowers have not been reached and assess whether changes are needed to help ensure servicers are complying with USDA's loss mitigation requirements.

To more fully understand the strengths and risks posed by foreclosure mitigation actions and protect taxpayers from absorbing avoidable losses to the maximum extent possible, we recommend that FHA, VA, and USDA conduct periodic analyses of the effectiveness and the long-term costs and benefits of their loss mitigation strategies and actions. These analyses should consider (1) the redefault rates associated with each type of home retention action and (2) the impact that loan and borrower characteristics have on the performance of different home retention actions. The agencies should use the results from these analyses to reevaluate their loss mitigation approach and provide additional guidance to servicers to effectively target foreclosure mitigation actions. If FHA, VA, and USDA do not maintain data needed to consider this information, they should require services to provide them.

We recommend that FHFA expeditiously finalize its analysis as to whether Fannie Mae and Freddie Mac will be allowed to offer HAMP principal forgiveness modifications.

Agency Comments and Our Evaluation

We requested comments on a draft of this report from Treasury, HUD, USDA, VA, FHFA, Fannie Mae, Freddie Mac, OCC, Federal Reserve, FDIC, and the Consumer Financial Protection Bureau (CFPB). We received formal written comment letters from Treasury's Assistant Secretary for Financial Stability, HUD's Acting Assistant Secretary for Housing (Federal Housing Commissioner), VA's Chief of Staff, and FHFA's Senior Associate Director of the Office of Housing and Regulatory Policy; these are presented in appendixes VI through IX. We also received e-mail comments from USDA that are discussed below. Lastly, we received technical comments from Treasury, HUD, FHFA, Fannie

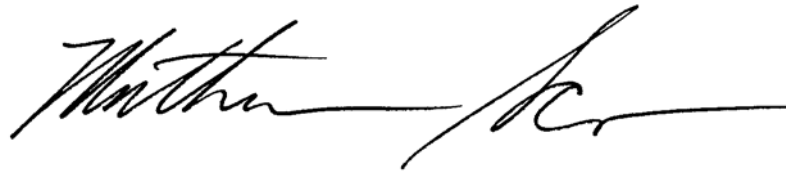
Mae, Freddie Mac and FDIC that are incorporated as appropriate in the report. OCC, the Federal Reserve, and CFPB did not provide any comments on the draft report.

Treasury, HUD, VA, and FHFA each agreed to consider or concurred with the recommendations and indicated that action was either under way or planned in response to our recommendations. In its written comments, FHFA noted that savings to the federal government would likely be negligible if the enterprises offered modifications under the HAMP Principal Reduction Alternative because of the incentive payments Treasury would have to provide. In response, we added additional information to the report noting, as we have in prior reports, that all TARP-funded housing programs are expenditures, including incentives paid to investors other than the enterprises, servicers, and borrowers. Further, incentives to the enterprises for principal forgiveness modifications would be paid out of the \$45.6 billion that Treasury has already obligated for preventing avoidable foreclosures and preserving homeownership. FHFA also noted that the draft report did not discuss the issue of principal forgiveness modifications with respect to FHA, USDA, and VA. We included additional text in the report to note that FHA, USDA, and VA each cited limitations related to their authority to forgive loan principal as part of a foreclosure mitigation action. Moreover, as the draft report notes, FHA, VA, and USDA have not fully analyzed the costs and benefits of their foreclosure mitigation actions to help ensure that both borrowers and taxpayers benefit from efforts to keep homeowners in their homes. Therefore, we recommended that these agencies analyze the effectiveness and the long-term costs and benefits of their loss mitigation strategies and actions.

Although USDA did not provide a formal written comment letter, e-mail comments from Rural Development noted that USDA generally concurred with the information applicable to USDA in the report. Further, USDA provided additional data on the types of information that servicers were required to report on their foreclosure mitigation efforts. In response, we clarified the text of the report and the associated recommendation to provide additional examples of data that would enhance USDA's ability to monitor servicers' borrower outreach and foreclosure mitigation efforts.

We are sending copies of this report to interested congressional committees, Treasury, HUD, USDA, VA, FHFA, Fannie Mae, Freddie Mac, OCC, Federal Reserve, FDIC, CFPB, Special Inspector General for TARP, and members of the Financial Stability Oversight Board. We also will make this report available at no charge on the GAO website at <http://www.gao.gov>.

If you or your office have any questions about this report, please contact me at (202) 512-8678 or sciremj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. Key contributors to this report are listed in appendix VII.

A handwritten signature in black ink, appearing to read "Mathew J. Scire", followed by a long horizontal flourish.

Mathew J. Scire
Director
Financial Markets and
Community Investment

List of Addressees

The Honorable Daniel K. Inouye
Chairman

The Honorable Thad Cochran
Vice Chairman
Committee on Appropriations
United States Senate

The Honorable Tim Johnson
Chairman

The Honorable Richard C. Shelby
Ranking Member
Committee on Banking, Housing, and Urban Affairs
United States Senate

The Honorable Kent Conrad
Chairman

The Honorable Jeff Sessions
Ranking Member
Committee on the Budget
United States Senate

The Honorable Max Baucus
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The Honorable Orrin G. Hatch
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The Honorable Hal Rogers
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The Honorable Norm Dicks
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The Honorable Paul Ryan
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The Honorable Chris Van Hollen
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The Honorable Spencer Bachus
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The Honorable Barney Frank
Ranking Member
Committee on Financial Services
House of Representatives

The Honorable Dave Camp
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The Honorable Sandy Levin
Ranking Member
Committee on Ways and Means
House of Representative

Appendix I: Objectives, Scope, and Methodology

This report focuses on foreclosure mitigation efforts. Specifically, this report examines (1) the federal and nonfederal response to the housing crisis, (2) the number of loans potentially at risk of foreclosure and the current condition of the U.S. housing market, and (3) opportunities to enhance the effectiveness of current foreclosure mitigation efforts.

To examine the response to the housing crisis, we identified key federal and nonfederal efforts to mitigate foreclosures, focusing our review on those that provided direct assistance to homeowners:

- Department of the Treasury's efforts, including the Home Affordable Modification Program (HAMP), HAMP-Principal Reduction Alternative (PRA), Federal Housing Administration Refinance of Borrowers in Negative Equity Positions (FHA Short Refinance, joint program with the Department of Housing and Urban Development (HUD)), Home Affordable Unemployment Program (UP), and Home Affordable Foreclosure Alternatives (HAFA) Program.
- HUD's efforts, mainly through FHA, including special forbearance agreements, standard modifications, FHA-HAMP, FHA Short Refinance (joint program with Treasury), partial claims short sales, and deeds-in-lieu of foreclosure.
- Department of Agriculture's (USDA) efforts, including special forbearance, traditional modifications, special loan servicing, short sales, and deeds-in-lieu of foreclosure.
- Department of Veterans Affairs' (VA) programs, including repayment plans, special forbearance agreements, standard modifications, VA-HAMP, short sales, and deeds-in-lieu of foreclosure.
- Efforts of the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac), including repayment plans, forbearance agreements, standard loan modification programs, Home Affordable Refinance Program (HARP), short sales, and deeds-in-lieu of foreclosure.
- Efforts implemented by states but supported by federal funds, such as Treasury's Housing Finance Agency Innovation Fund for the Hardest Hit Housing Markets (Hardest Hit Fund) and HUD's Emergency Homeowners Loan Program (EHLP).
- Efforts implemented by mortgage servicers, commonly known as proprietary foreclosure mitigation efforts.

For federal efforts, we identified and reviewed statutes, regulations, requirements, guidance, and press releases. Further, to examine these foreclosure mitigation efforts, we obtained viewpoints from a wide range of housing market participants and observers, including federal officials from HUD, USDA, VA, and Treasury, as well as the Office of the Comptroller of the Currency (OCC), Federal Housing Finance Agency (FHFA), Board of Governors of the Federal Reserve System (Federal Reserve), Federal Deposit Insurance Corporation (FDIC), and Consumer Financial Protection Bureau (CFPB). In addition we met with staff from two government-sponsored-enterprises, Fannie Mae and Freddie Mac (the enterprises). We also met with housing market trade associations, including the Mortgage Bankers Association (MBA), Mortgage Insurance Companies of America, Association of Mortgage Investors, American Securitization Forum, and National Association of Realtors. Finally, we met with housing market observers and participants, such as CoreLogic, the Center for Responsible Lending, the National Association of Consumer Advocates, Amherst Securities, NeighborWorks America, HOPE NOW, and the National Community Reinvestment Coalition.

To describe the volume, characteristics, and costs associated with federal efforts and specific foreclosure mitigation actions (such as loan modifications), we obtained summary data from Treasury, HUD, USDA, VA and the enterprises. We did not independently confirm the accuracy of these data. However, we took steps to ensure that the data we used were sufficiently reliable for our purposes, such as reviewing existing information about data quality, interviewing officials familiar with the data, and corroborating key information. We also reviewed reports generated by Treasury, HUD, USDA, VA, the enterprises, and FHFA describing the volume, characteristics, performance, and costs of foreclosure mitigation efforts and actions that occurred for the period of January 2009 through December 2011.¹ To examine the volume, characteristics and performance of nonfederal foreclosure mitigation efforts, we reviewed publically available data reported by HOPE NOW (an industry

¹For example, The Obama Administration's Efforts To Stabilize The Housing Market and Help American Homeowners (HUD and Treasury); Making Home Affordable: Program Performance Reports (Treasury); and Foreclosure Prevention and Refinance Reports (monthly and quarterly, Federal Housing Finance Agency).

association) and servicers (through OCC's Mortgage Metrics Reports)² We did not independently confirm the accuracy of the summary data we obtained from these sources. However, we took steps to ensure that the data we used were sufficiently reliable for our purposes, such as reviewing the data with officials familiar with generating the data.

To supplement these data sources, we also analyzed loan-level servicing data we obtained from CoreLogic to examine the volume, characteristics, and performance of loan modifications made through both federal and nonfederal programs. The data we obtained provide wide coverage of the national mortgage market—that is, approximately 65 percent to 70 percent of prime loans and about 50 percent of subprime loans, according to CoreLogic officials. Due to the proprietary nature of CoreLogic's estimates of its market coverage, we could not directly assess the reliability of these estimates. However, we have used CoreLogic data in prior reports in which we concluded that the data we used were sufficiently reliable for our purposes.³ Nevertheless, because of limitations in the coverage and completeness of the data, our analysis may not be representative of the mortgage market as a whole. CoreLogic's prime loans include conventional loans as well as loans insured or guaranteed by FHA, VA, and other government entities. Further, prime loans include near prime or Alt-A loans.⁴ For each mortgage, the CoreLogic database

²The HOPE NOW estimates are from a survey of HOPE NOW members, which include approximately 37 million loans and have been extrapolated to the entire first-lien industry. HOPE NOW reports data on HAMP modifications and "proprietary modifications." According to a HOPE NOW official, the proprietary modifications in their survey include modifications completed under Fannie Mae, Freddie Mac, and FHA programs, as well as modifications completed on loans held in lenders' portfolios or in private label securities. To estimate the total number of permanent loan modifications through servicers' proprietary efforts, we subtracted the modifications completed under federal agencies and the enterprises (as reported by the federal agencies and the enterprises) from the total modifications estimated by HOPE NOW. The OCC data on foreclosure mitigation efforts are based on loan-level data submitted by nine large servicers—which are: Bank of America, JPMorgan Chase, Citibank, HSBC, MetLife, PNC, U.S. Bank, Wells Fargo, and OneWest Bank—that OCC estimated represent about 60 percent of all first lien residential mortgages outstanding.

³For example, see GAO, *Mortgage Reform: Potential Impacts of Provisions in the Dodd-Frank Act on Homebuyers and the Mortgage Market*, [GAO-11-656](#) (Washington, D.C.: July 19, 2011).

⁴Generally, Alt-A mortgages serve borrowers whose credit histories are close to prime, but the loans often have one or more higher risk features such as limited documentation of income or assets.

provides information on certain loan and borrower characteristics at origination, such as the original loan amount and interest rate as well as credit score, and a series of monthly observations, which include current mortgage status (current on payments, 30, 60, or 90 or more days delinquent, in foreclosure, real estate owned, or has paid off).⁵

We restricted our analysis to first-lien mortgages for the purchase or refinancing of single-family residential properties (1- to 4-units) in the 50 states and the District of Columbia that were active sometime during the period from January 2007 through June 2011. This data set contained about 58.2 prime mortgages and about 7.7 subprime mortgages. We reviewed documentation on the process CoreLogic used to collect its data. We discussed this process and the interpretation of different data fields with CoreLogic representatives. In addition, we conducted reasonableness checks on data elements to identify any missing, erroneous, or outlying data. Although the Core Logic data has certain limitations—for example, certain data fields are not fully reported—we concluded that the data we used were sufficiently reliable for our purposes.

To examine the volume, characteristics, and performance of loan modifications, we took a 15 percent random sample of the CoreLogic data set, which resulted in 7,608,603 prime mortgages and 608,704 subprime mortgages. Although this data set did not contain direct information about the presence of modifications, we developed a set of algorithms to infer if the loan had been modified. We confirmed the accuracy of our algorithms by using our methodology to analyze data provided by OCC that included known modifications (see app. III). We conducted several analyses on this data set. For example, we calculated the magnitude of payment reductions as well as the 6-month redefault rates for modified loans.

To identify other key efforts intended to mitigate foreclosures, we interviewed a wide range of housing market participants and observers. We identified a number of efforts, such as improvements to servicing standards. To examine this effort, we reviewed information related to the

⁵In practice, this 'static' information could have been overwritten, such as at the time of a loan modification. Therefore all original loan term data may not be accurate. We discussed this issue with CoreLogic and determined that the data were sufficiently reliable for our purposes. Real estate owned are properties acquired by an investor, such as FHA or the enterprises, as a result of the foreclosure process.

consent orders OCC the federal banking regulators sent to 14 servicers as well as the agreement reached by the federal government and state attorneys general agreement with the five largest servicers in the United States.

To examine the current condition of the U.S. housing market, we analyzed the loan-level data we obtained from CoreLogic. We conducted our analysis on all active loans in June 2009, 2010, and 2011 that met our selection criteria.⁶ Specifically, we identified loans that were associated with an increased likelihood of foreclosure and then described the number and loan and borrower characteristics of these loans. First, we identified key characteristics associated with an increased likelihood of foreclosure by reviewing our prior work and other studies, as well as interviewing housing market participants and observers. Based on these studies and viewpoints, we identified the following five key characteristics: (1) loans with two or more missed payments; (2) loans with significant negative equity (a current LTV ratio of 125 percent or greater); (3) loans with significant negative equity located in an area with unemployment of 10 percent or greater; (4) loans with a high current interest rate (1.5 percentage points or 150 basis points or higher above the market rate); and (5) loans with certain origination features, such as a credit score of

⁶In addition to our selection criteria, we excluded loans that were missing 4 or more months of transactional data.

619 or below and an LTV of 100 percent or higher at the time of origination.⁷

Second, we analyzed the CoreLogic loan-level data to determine the extent to which loans were associated with these five characteristics. We took steps to ensure that the data we used were sufficiently reliable for our purposes, such as conducting reasonableness checks on data elements. In some cases, the CoreLogic data set did not contain information associated with these characteristics—specifically, negative equity, unemployment, and high interest rate. In these cases, we linked additional data to the CoreLogic data to derive this information.

- To estimate a borrower's equity, we linked historical and current house price information at the zip code level to the CoreLogic data. Specifically, we calculated for each loan the current house value based on the date of origination. In areas where a house price did not exist we used the state-level average house price index for the month of origination and for June 2009, 2010, and 2011. Due to data limitations our analysis did not take into account additional liens. As a result, we may overstate the amount of equity a borrower has in their home.
- To estimate unemployment levels that could affect borrowers we used employment data at the county level from the Bureau of Labor

⁷For more on negative equity, see Ben S. Bernanke *The U.S. Housing Market: Current Conditions and Policy Considerations*, Federal Reserve Board of Governors (2012); Yuliya Demyanyk, Ralph S.J. Koijen, and Otto A.C. Van Hemert, "Determinants and Consequences of Mortgage Default," Federal Reserve Bank of Cleveland Working Paper, no. 1019R (2011); and Laurie S. Goodman, Roger Ashworth, Brian Landy, and Ke Yin, "Negative Equity Trumps Unemployment in Predicting Defaults," *The Journal of Fixed Income*, vol. 19, no. 4 (2010). For more on negative equity and high unemployment, see Ronel Elul, Nicholas S. Souleles, Souphala Chomsisengphet, Dennis Glennon, and Robert Hunt, "What 'Triggers' Mortgage Default," Federal Reserve Bank of Philadelphia Working Paper, no. 10-13 (2010) and Christopher L. Foote, Kristopher Gerardi, and Paul S. Willen, "Negative Equity and Foreclosure: Theory and Evidence," Federal Reserve Bank of Boston Public Policy Discussion Papers, no. 08-3 (2008). For more on high current interest rate, see: David M. Brickman and Patric H. Hendershott, "Mortgage Refinancing, Adverse Selection, and FHA's Streamline Program," *Journal of Real Estate Finance and Economics*, vol. 21, no. 2 (2000). For more on loan origination features, see Sumit Agarwal, Gene Amromin, Itzhak Ben-David, Souphala Chomsisengphet, and Douglas D. Evanoff, "Market-Based Loss Mitigation Practices for Troubled Mortgages Following the Financial Crisis," Federal Reserve Bank of Chicago, no. 2011-03 (2010) and Yuliya Demyanyk, Otto Van Hemert, "Understanding the Subprime Mortgage Crisis," *Review of Financial Studies*, vol 24, no. 6 (2011), first published online May 4, 2009.

statistics (BLS) to analyze local area unemployment rates. We linked the local area unemployment data with zip code data in CoreLogic to determine a local area unemployment rate for each loan as of June 2009, 2010, and 2011. If the local area unemployment rate was 10 percent or higher we determined that the loan was in an area with a high unemployment.⁸

- For loans originated during the last 5 years, we determined high interest rates by comparing the interest rate on individual loans to the current Freddie Mac's Primary Mortgage Market Survey monthly results for adjustable rate mortgage (ARM), 30-year fixed, and 15-year fixed-rate mortgages, depending on the loan's origination mortgage product as of June 2009, 2010, and 2011. If the current interest rate was equal to or greater than the Freddie Mac rate by 150 basis points, we determined that the loan had a high interest rate.

We analyzed loans with delinquency or with two or more of the other four characteristics associated with an increased likelihood of foreclosure (i.e., significant negative equity, significant negative equity and located in an area with high unemployment, high current interest rate, certain origination features). We also conducted a state-by-state analysis.

To further examine the current condition of the U.S. housing market, we identified and analyzed key national housing market indicators, including measures of loan performance, home equity, unemployment, and home affordability. To identify these indicators, we reviewed a wide range of publicly available information and interviewed housing market participants and stakeholders. To analyze the indicators, we reviewed information in several reports, including, the National Delinquency Survey data issued by the Mortgage Bankers Association (MBA), data issued by the National Bureau of Economic Research, CoreLogic's Home Price Index, the Federal Reserve's statistical releases on the Flow of Funds Accounts of

⁸Since the unemployment rates are at the county level we converted them to the zip-code level using a crosswalk from county to zip code developed by HUD; see "HUD USPS ZIP Code Crosswalk Files" at <http://www.huduser.org/portal/print/node/2914> (last accessed on 6/8/2011). We conducted a similar analysis to link unemployment rates to the HAMP data from Treasury. The data we used for our June 2011 analysis were based on preliminary unemployment data. For one county in California and the District of Columbia, the data from January 2007 through June 2011 were updated after we downloaded the data. We compared the updated data to our original data and found that the differences were generally small.

the United States, IHS Global Insight data on home affordability, and unemployment data reported by BLS. We did not independently confirm the accuracy of the information and analysis that we obtained from third parties. However, we took steps to ensure that the data we used from these sources were sufficiently reliable for our purposes, such as reviewing existing information about data quality, interviewing officials familiar with the data, and corroborating key information.

To examine opportunities to enhance the effectiveness of foreclosure mitigation efforts, we identified and reviewed the purposes and goals of federal foreclosure mitigation efforts as well as statutes, requirements, and guidance associated with these efforts. To describe the costs associated with federal efforts and specific foreclosure mitigation actions, we obtained summary data from Treasury, HUD, USDA, VA and the enterprises. Again, we did not independently confirm the accuracy of the summary data we obtained. However, we took steps to ensure that the data we used were sufficiently reliable for our purposes, such as interviewing officials familiar with the data. We reviewed relevant principals of federal budgeting resulting from federal credit reform. We obtained the viewpoints of a wide range of housing market participants and observers. For example, we met with officials from Treasury, HUD, FHFA, Fannie Mae, Freddie Mac, VA, and USDA to understand the extent to which their foreclosure mitigation programs reached struggling borrowers. We discussed their activities to monitor the performance of their foreclosure mitigation efforts and the extent to which they had considered other factors that may affect performance. For instance, we asked whether they had analyzed the effect of loan and borrower characteristics on the performance of loss mitigation actions and considered redefault rates and loss severity when evaluating the costs and benefits of these actions. Finally, we discussed the utility of, as well as any obstacles to, taking these steps.

To better understand characteristics that affect redefault rates of modified loans, we conducted an econometric analysis. Specifically, we analyzed a sample of loan-level data we obtained from CoreLogic. We took steps to ensure that the data we used were sufficiently reliable for our purposes, such as conducting reasonableness checks on data elements. In addition, we analyzed loan-level data we obtained from Treasury to examine the performance of HAMP loan modifications. The HAMP data are reported by servicers at the start of the trial modification period, during the trial period, during conversion to a permanent modification, and during the permanent modification phase of the program. The data contain several loan and borrower characteristics at origination, including the loan-to-

value (LTV) and loan amount; as well as some information at time of the modification, including delinquency status. Since we did not have data on the performance history of the modified loans, we constructed the loan history using data from different points in time. The HAMP data have certain limitations. For instance, certain data fields are not fully reported, as indicated by the Department of the Treasury.⁹ However, we determined that the data were sufficiently reliable for our purposes. See appendix V for a detailed summary of the methodology for the analysis of the CoreLogic and HAMP data, as well as the results from this analysis.

We conducted this performance audit from October 2010 through June 2012 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

⁹ See [GAO-11-288](#).

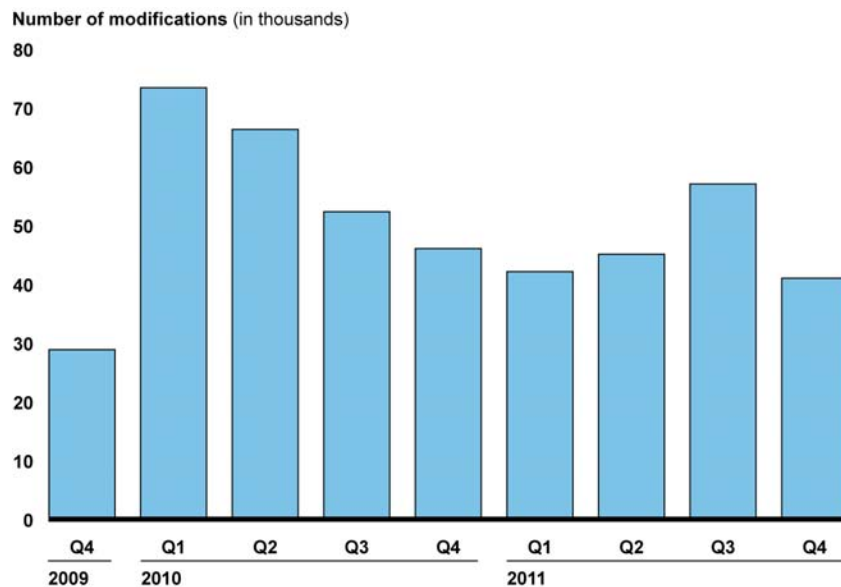
Treasury has outlined the requirements for certain foreclosure mitigation programs in the MHA Handbook, which are summarized here. These guidelines apply to mortgages that are not owned or guaranteed by Fannie Mae or Freddie Mac and that are not insured or guaranteed by the Federal Housing Administration (FHA), the Department of Veterans Affairs (VA), and the Department of Agriculture (USDA). Fannie Mae and Freddie Mac participate in the Home Affordable Modification Program (HAMP) but have issued their own guidance. FHA, VA, and USDA have issued guidance for companion programs that are separate from HAMP.

Treasury's programs provide relief to borrowers whose mortgages are held in lenders' portfolios or in private securitization trusts. To qualify, mortgages must have been originated on or before January 1, 2009, and be secured by a one-to-four unit residential property. In general, borrowers must be delinquent or default must be reasonably foreseeable (imminent default).

Appendix II: Foreclosure Mitigation Efforts

Department of the Treasury

Figure 14: HAMP Permanent First-Lien Loan Modifications Completed by Calendar Quarter, 2009 through 2011



Source: Special Inspector General for TARP and Treasury MHA Servicer Performance Reports.

Home Affordable Modification Program (HAMP) Tier 1: HAMP Tier 1 modifications reduce borrowers' monthly mortgage payments to affordable levels and help them avoid foreclosure. To be eligible under HAMP Tier 1, borrowers must occupy the property and have monthly mortgage payments that exceed 31 percent of their monthly gross income. The HAMP Tier 1 evaluation includes identifying actions to be taken that will result in a monthly mortgage payment-to-income ratio of 31 percent. These actions must follow a standard sequence until this ratio is reached: capitalizing past due amounts, reducing the interest rate down to a minimum of 2 percent, extending the mortgage term by up to 40 years from the date of modification, and forbearing principal. Servicers have the option of using an alternative sequence of modification actions under the Principal Reduction Alternative that includes principal forgiveness as a second step before reducing the interest rate. Servicers then use a standardized net present value (NPV) test to compare the financial benefits to the investor of modifying relative to not modifying the loan. Borrowers who are approved for HAMP Tier 1 begin with a trial period that lasts at least 3 months. Borrowers who successfully complete a trial period receive a permanent modification. After 5 years, the interest rate begins to step up each year until the market rate is reached if the starting interest rate was below the market rate at the time of the modification. Treasury pays incentives to investors and servicers for completed modifications and to borrowers, investors, and servicers for the continued successful performance of certain modifications. More than 450,000 nonenterprise permanent modifications were started between when the program began in 2009 and December 2011.

HAMP Tier 2: Effective June 1, 2012, the HAMP Tier 2 program will offer modifications to certain borrowers who do not qualify for HAMP Tier 1, including those whose current mortgage payments are below 31 percent of their income

and those who do not occupy the property as their primary residence. HAMP Tier 2 modifications will capitalize past due amounts, adjust interest rates to the market rate, extend loan terms to 40 years, and forbear up to 30 percent of principal on loans with LTV ratios of more than 115 percent to reach the 115-percent threshold. Borrowers will be offered HAMP Tier 2 modifications only if these changes reduce monthly payments by at least 10 percent and result in payments ranging from 25 percent to 42 percent of monthly gross income.

Second-Lien Modification Program (2MP): The Second Lien Modification Program (2MP) is designed to work in tandem with HAMP modifications to provide a comprehensive solution to help borrowers afford their mortgage payments. A participating servicer of a second lien for which the first lien receives a HAMP Tier 1 or Tier 2 modification must offer to modify the borrower's second lien, accept a lump sum payment from Treasury to fully extinguish the second lien, or accept a lump sum payment from Treasury to partially extinguish the second lien and modify the remaining portion. Under 2MP, servicers are required to take modification actions in the following order: capitalize accrued interest and other past due amounts; reduce the interest rate to as low as 1 percent for 5 years (when the interest rate will reset at the rate on the HAMP-modified first lien); extend the term to at least match the HAMP-modified first lien; and forbear or forgive principal in at least the same proportion as the forbearance or forgiveness on the HAMP-modified first-lien, although servicers may choose to forbear or forgive more than that amount. According to Treasury, nearly 61,000 second liens had been modified under 2MP, including nearly 13,000 that involved full extinguishments.

Home Affordable Unemployment Program (UP): This program provides forbearance on mortgage loans to borrowers whose hardship is related to unemployment. Borrowers who indicate that their hardship is related to unemployment when being considered for HAMP must be evaluated for UP and, if qualified, receive an offer for forbearance. At their discretion, however, servicers may offer a HAMP trial period instead, although they must document their reasons. Servicers are not required to offer UP forbearance to borrowers whose delinquency exceeds 12 months of scheduled monthly mortgage payments. The minimum duration of UP forbearance is 12 months unless the borrower finds a job during that time. There is no maximum forbearance period, and servicers may extend forbearance in increments at their discretion. Servicers must reduce monthly payments during the forbearance period to no more than 31 percent of monthly gross income, but may opt to suspend them in full. When the forbearance period ends, the servicer must evaluate the borrower for HAMP or other modifications to resolve the delinquency. As of December 2011, more than 18,000 UP forbearance agreements had been started.

Home Affordable Foreclosure Alternatives (HAFA): Borrowers who cannot afford to keep their homes must be considered for short sales and deeds-in-lieu of foreclosure (DIL) under the HAFA program. Borrowers may be considered for HAFA after being considered for HAMP or upon the borrower's request. Borrowers who qualify for a HAFA short sale must sign and return a short sale agreement that lasts for a minimum of 120 days and that lists the minimum price, allowable transaction costs, and monthly mortgage payments to be made during the period of the agreement, if applicable. Borrowers may also qualify for HAFA if they have received an offer on their property and submit a request for a short sale. Through HAFA, a borrower may also receive a DIL either as a condition of the short sale agreement if the property doesn't sell or separately without a requirement to market the property. In all HAFA transactions, the title must be clear, any subordinate lien holders must release their liens, and investors must agree to the transaction. According to Treasury data, about 26,000 nonenterprise HAFA short sales and DILs had been completed as of December 2011.

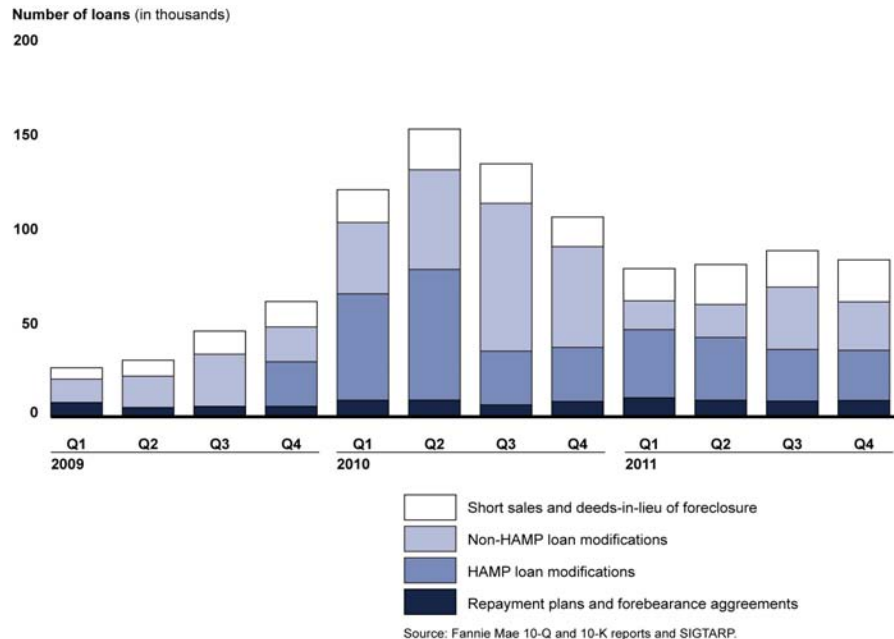
Appendix II: Foreclosure Mitigation Efforts

Fannie Mae

Fannie Mae has outlined the requirements for foreclosure mitigation programs in its Single Family Servicing Guide, which are summarized here. These guidelines apply only to mortgages that are owned or guaranteed by Fannie Mae.

Fannie Mae recently changed its foreclosure mitigation workout hierarchy to require servicers to first evaluate whether borrowers face a temporary or permanent hardship. Temporary hardships may be addressed with repayment plans and temporary forbearance. Permanent or long-term hardships may be addressed with modifications (which may include forbearance) under the Home Affordable Modification Program (HAMP), Fannie Mae's standard loan modifications, short sales or deeds-in-lieu of foreclosure (DIL) under the Home Affordable Foreclosure Alternatives program (HAFA) or Fannie Mae's own program. Fannie Mae also has a program to lease back a property that has been conveyed through a DIL to the former homeowner, called a deed-for-lease. Previously Fannie Mae required servicers to evaluate borrowers for a HAMP modification before considering them for other foreclosure mitigation actions.

Figure 15: Fannie Mae Foreclosure Mitigation Actions Completed by Calendar Quarter, 2009 through 2011



Repayment Plans and Forbearance: A repayment plan is an agreement between servicer and borrower that gives the borrower a period of time to reinstate the mortgage by making regular monthly payments plus an additional amount to repay the delinquency. Servicers may also offer forbearance to borrowers, which suspends or reduces payments for up to 6 months. Forbearance periods longer than 6 months require written agreements with the borrower and written approval from Fannie Mae. Fannie Mae also has unemployment forbearance, which is the first action servicers must consider for unemployed borrowers. Fannie Mae clarified the requirements for this action in early 2012. Unemployment forbearance initially lasts for 6 months or until the borrower is reemployed, whichever occurs first. If the borrower completes the initial unemployment forbearance period and remains unemployed, the servicer may offer extended unemployment forbearance for up to 6 more months with Fannie Mae's approval. For all forbearance programs, once the borrower's hardship is resolved, the forbearance period ends and the borrower must repay the full amount, enter a repayment plan, or receive a loan modification or other foreclosure mitigation action. Fannie Mae completed about 90,000 repayment plans and forbearance agreements under these programs between January 2009 and December 2011.

Home Affordable Modification Program (HAMP): Servicers must evaluate borrowers for HAMP before considering them for other modification options. Like Treasury's nonenterprise HAMP program, the Fannie Mae HAMP evaluation reduces the monthly mortgage payment-to-income ratio to 31 percent by following a standard sequence of modification actions: capitalizing past due amounts, reducing the interest rate to a minimum of 2 percent, extending the mortgage term to up to 40 years, and forbearing principal. Servicers use

Treasury's net present value (NPV) model to estimate the financial outcome of modifying or not modifying the loan. Unless the NPV result for not modifying the loan exceeds the NPV result for modifying the loan by more than \$5,000, the servicer must move forward with the HAMP modification. Borrowers who are approved for HAMP begin with a trial period that lasts at least 3 months. Modifications become permanent after borrowers have successfully completed the trial period. Fannie Mae pays borrower and servicer incentives for HAMP modifications but is not eligible for Treasury's investor incentives under HAMP. Fannie Mae completed nearly 330,000 HAMP modifications as of December 2011.

Non-HAMP Loan Modifications: Fannie Mae servicers must consider borrowers who do not qualify for HAMP or have defaulted on HAMP modification for standard modifications. The terms of Fannie Mae's standard loan modification program, which took effect October 1, 2011, require servicers to capitalize past due amounts, adjust interest rates to a fixed rate (to be adjusted from time to time based on market conditions), and extend the amortization term to 480 months. In addition, if the current loan-to-value (LTV) ratio exceeds 115 percent, the servicer must forbear up to 30 percent of the principal balance to bring the LTV ratio down to 115 percent. These changes must reduce monthly payments by at least 10 percent, and the borrower's front-end debt-to-income ratio must be greater than or equal to 10 percent and less than or equal to 55 percent in order for the modification to proceed. Fannie Mae offers up to \$1,600 in incentives for each modification, depending on how early in the delinquency the modification takes effect.

Prior to October 2011, Fannie Mae delegated authority to its largest servicers, which represent approximately 90 percent of loans, to offer modifications to borrowers who met specified eligibility criteria according to a standard set of waterfall steps. This modification structure was aimed at making monthly payments more affordable. Fannie Mae paid servicers \$800 for each approved modification. Nearly 390,000 loans were modified through Fannie Mae's non-HAMP programs between January 2009 and December 2011.

Short Sales and Deeds-in-Lieu of Foreclosure: Borrowers who cannot afford to keep their homes must be considered for a short sale or DIL, first under HAFA and then under Fannie Mae's own program. Borrowers who qualify for a HAFA short sale must sign and return an agreement that lasts for 120 days and lists the minimum list price for the short sale, allowable transaction costs, and monthly mortgage payments for the period of the agreement. A HAFA DIL is generally available to borrowers who are unable to sell their properties under the HAFA short sale process. In certain instances—such as a serious illness, death, military relocation or in other cases when a borrower has no interest or ability to market the property—the servicer may offer DIL without going through the HAFA short sale process. Under Fannie Mae's program, Fannie Mae has delegated authority to certain servicers to offer short sales and DILs on its behalf under the terms of the delegated authority. However, servicers that do not have Fannie Mae's delegated authority are required to obtain Fannie Mae's approval on a case-by-case basis. Fannie Mae short sales and DILs can be offered to borrowers who are ineligible for HAFA. Fannie Mae reported completing more than 190,000 short sales and DIL transactions since January 2009.

In addition, Fannie Mae has a deed-for-lease program as part of its DIL effort that has been in place since November 2009. Under this program, the borrower can receive a lease agreement for up to 12 months. Fannie Mae officials told us that most borrowers are looking to move out of the home at a time that is convenient for them rather than looking to stay for an extended period of time.

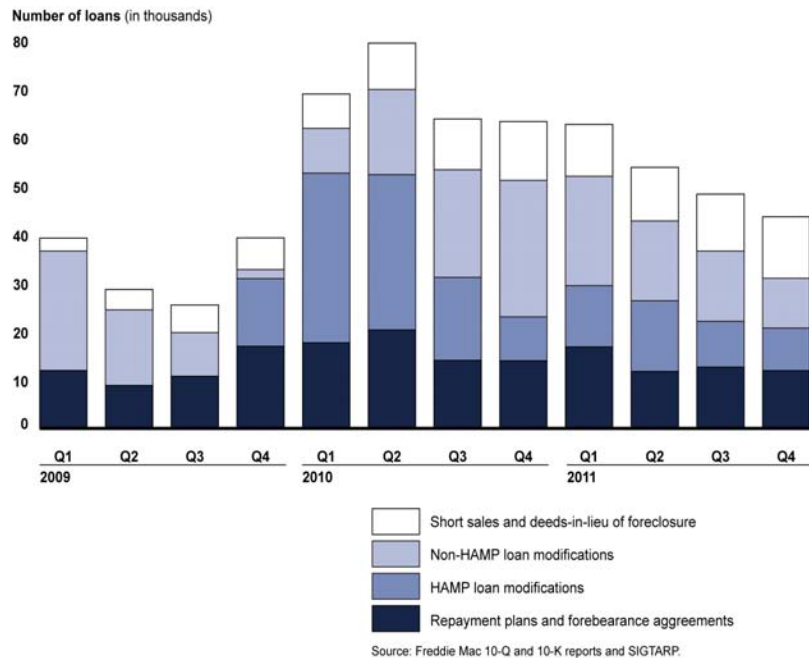
Appendix II: Foreclosure Mitigation Efforts

Freddie Mac

Freddie Mac has outlined the requirements for foreclosure mitigation programs in its Servicer Guide, which are summarized here. These guidelines apply only to mortgages that are owned or guaranteed by Freddie Mac.

Freddie Mac requires servicers to evaluate borrowers for foreclosure mitigation actions in accordance with a hierarchy, which begins with reinstatement, repayment plans and forbearance. If servicers determine that those options are not appropriate, they evaluate borrowers for a modification under the Home Affordable Modification Program (HAMP) before considering them for other foreclosure mitigation actions. If the borrower does not qualify for HAMP, the servicer evaluates the borrower for a Freddie Mac standard loan modification. If the borrower is not eligible for a modification, the servicer evaluates the borrower for a short sale or deed-in-lieu of foreclosure (DIL) under the Home Affordable Foreclosure Alternatives program (HAFA), and then under Freddie Mac's own program.

Figure 16: Freddie Mac Foreclosure Mitigation Actions Completed by Calendar Quarter, 2009 through 2011



Repayment Plans and Forbearance: A repayment plan is an agreement between the servicer and a borrower that gives the borrower a set period to reinstate the mortgage by making the borrower's contractual payments plus an additional amount to repay the delinquency. Forbearance is another temporary relief option that typically involves reducing or suspending payments for a period of time, and Freddie Mac has three different types of forbearance. Short-term forbearance, which does not require Freddie Mac's approval, is a written agreement that either suspends payments for up to 3 months or reduces payments for up to 6 months. Long-term forbearance, which requires a written agreement and Freddie Mac's written approval, is available under certain circumstances—for example, when the borrower is experiencing a hardship due to long-term or permanent disability—and reduces or suspends monthly payments for 4 to 12 months. Unemployment forbearance was added in early 2012. Servicers must consider unemployed borrowers for unemployment forbearance first. Unemployment forbearance initially lasts for 6 months or until the borrower gets a job, whichever occurs first. Borrowers who remain unemployed may be eligible for extended unemployment forbearance, which can last for up to 6 more months, so long as the borrower's total delinquency does not exceed 12 months, with Freddie Mac's approval. Freddie Mac reported that servicers had completed nearly 170,000 repayment plans and forbearance agreements under these programs between January 2009 and December 2011.

Home Affordable Modification Program (HAMP): Servicers must evaluate borrowers for HAMP before considering them for other modification options. Like Treasury's nonenterprise HAMP program, the Freddie Mac HAMP evaluation includes following a standard sequence of modification actions to produce a monthly mortgage payment-to-income ratio of 31 percent: capitalizing past due

amounts, reducing the interest rate down to a minimum of 2 percent, extending the mortgage term by up to 40 years from the date of modification, and, if applicable, forbearing principal. Servicers use Treasury's net present value (NPV) model to estimate the financial outcome of modifying or not modifying the loan. Unless the NPV result for not modifying the loan exceeds the NPV result for modifying the loan by more than \$5,000, the servicer must move forward with the HAMP modification. Borrowers who are approved for HAMP begin with a trial period that lasts at least 3 months, and the modification becomes permanent if they successfully complete the trial period. Freddie Mac completed more than 150,000 HAMP modifications between January 2009 and December 2011.

Non-HAMP Loan Modifications: Freddie Mac servicers also consider borrowers who do not qualify for HAMP or have defaulted on a HAMP modification for standard modifications. The terms of Freddie Mac's standard loan modification program, which became available on October 1, 2011, require servicers to capitalize past due amounts, adjust interest rates to a Freddie Mac-specified fixed rate, and extend the amortization term to 480 months. In addition, if the current LTV ratio exceeds 115 percent, the servicer must forbear up to 30 percent of the unpaid principal balance to reduce the LTV to 115 percent. The modification proceeds only if these changes reduce the borrower's monthly principal and interest payments by at least 10 percent and the front-end debt-to-income ratio to greater than or equal to 10 percent and less than or equal to 55 percent. Servicers are eligible to receive incentives of up to \$1,600 for each modification, depending on how early in the delinquency the modification takes effect. Prior to January 2012, Freddie Mac required all servicers to evaluate borrowers for a non-HAMP modification using a standard waterfall. In some cases, Freddie Mac delegated authority to some servicers to offer non-HAMP modifications. Servicers that did not have Freddie Mac's delegated authority were required to provide a recommendation to Freddie Mac for a non-HAMP modification. Freddie Mac would determine the conditions of non-HAMP modifications and offered incentives of \$800 per completed modification. Freddie Mac modified more than 190,000 loans between January 2009 and December 2011 through their non-HAMP programs.

Short Sales and Deeds-in-Lieu of Foreclosure: Borrowers who cannot afford or do not want to retain ownership of their homes must be considered for short sales and deeds-in-lieu of foreclosure (DIL), first under the Home Affordable Foreclosure Alternatives (HAFA) program and then under Freddie Mac's own program. These programs are typically the final options for avoiding foreclosure. Borrowers may be considered for HAFA only after being considered for home retention options, such as HAMP and a Freddie Mac standard modification. Borrowers who qualify for a HAFA short sale must sign and return a short sale agreement that lasts for 120 days and lists the minimum list price for the short sale, allowable transaction costs, and monthly mortgage payments to be made during the period of the agreement. Freddie Mac can extend the agreement if no acceptable purchase offers have been received, provided that the borrower has fully complied with the short sale agreement and an acceptable purchase offer is likely to occur during the extension period. Freddie Mac delegates the approval of HAFA short sales to servicers. A HAFA DIL is available only to borrowers who were unable to sell under the HAFA short sale process. With Freddie Mac's approval, the servicer prepares a DIL agreement that, among other things, sets the date when the owner will vacate the property and outlines monthly payment terms until then. Borrowers who are ineligible for HAFA may be eligible for a Freddie Mac short sale or DIL. In some cases, Freddie Mac requires that the servicer obtain approval prior to accepting short sale offers or offering a DIL agreement. Under both HAFA and Freddie Mac's short sale and DIL programs, if the borrower completes the transaction in accordance with Freddie Mac's standard requirements, the borrower is released from liability for the remaining unpaid balance on the mortgage. Freddie Mac reported completing more than 100,000 short sales and DILs since January 2009.

The Federal Housing Administration (FHA) has outlined the requirements for foreclosure mitigation programs in a series of guidance documents (called mortgagee letters), which are summarized here. These guidelines apply only to mortgages that are insured by FHA.

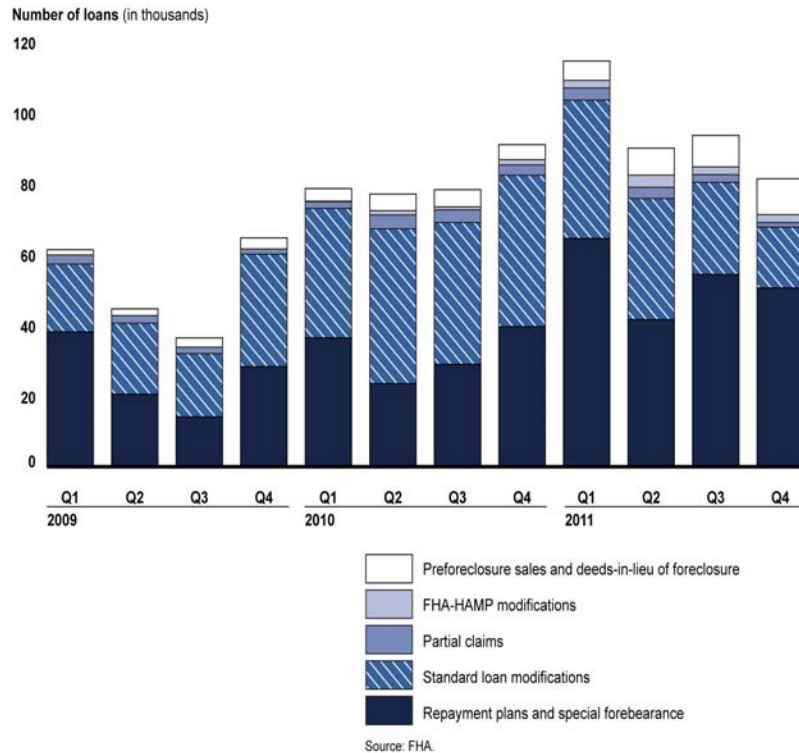
Prior to engaging in formal foreclosure mitigation actions, FHA requires servicers to address delinquencies through an early intervention process. This process involves contacting the borrower and gathering information on the borrower's circumstances and financial condition. The servicer may refer the borrower to default counseling. During this process, the servicer may come to an informal forbearance arrangement with the borrower, which lasts for 3 months or less, that helps the borrower reinstate the loan through a repayment plan.

When a servicer determines the need for a formal foreclosure mitigation action, FHA requires servicers to ensure that the borrower can afford the new monthly payment. In addition, servicers must consider formal foreclosure mitigation actions in the following order, from the lowest upfront cost to FHA to the highest upfront cost: repayment plans and special forbearance, standard loan modification, partial claim, FHA-HAMP, preforeclosure sale, and deed-in-lieu of foreclosure (DIL). To qualify for most of these actions, borrowers must be at least 90 days delinquent but no more than 12 months past due.

Appendix II: Foreclosure Mitigation Efforts

Federal Housing Administration (FHA)

Figure 17: FHA Formal Foreclosure Mitigation Actions Completed by Calendar Quarter, 2009 through 2011



Repayment Plans and Special Forbearance: Servicers may provide temporary relief to borrowers through repayment plans and special forbearance. Special forbearance combines a suspension or reduction in monthly mortgage payments with a repayment period and is available to borrowers who are at least 3 mortgage payments delinquent. Two types of special forbearance are available. Under Type I, the minimum forbearance period is 4 months, unless the borrower is unemployed, in which case the minimum forbearance period is 12 months under a temporary program change. Servicers must verify the employment status of unemployed borrowers monthly and certify that payments are made as scheduled. Type II special forbearance combines a short-term special forbearance plan with a loan modification or partial claim. The borrower must make three full monthly payments before the loan modification begins or the partial claim is executed. FHA provides servicers with incentive payments of \$100 to \$200 for Type I special forbearance agreements, depending on servicers' performance ratings. FHA does not provide incentives for Type II agreements because servicers can receive them for the subsequent loan modifications or partial claims. Servicers reported that about 440,000 repayment plans were completed between January 2009 and December 2011. During the same period, FHA paid incentives on about 67,000 Type I special forbearance plans.

Standard Loan Modifications: Borrowers must have paid at least 12 full monthly mortgage payments and be at least 3 months delinquent in order to qualify for a standard loan modification. Servicers capitalize past due amounts, reduce interest rates to the current market rate, and extend the term by up to 10 years from the original maturity date or 360 months. Borrowers generally must complete a trial period of 3 months. FHA offers \$750 in incentives per standard modification completed. More than 370,000 standard loan modifications have been completed since January 2009.

Partial Claims: Servicers may advance funds on behalf of a borrower to reinstate a loan that is at least 4 months delinquent. The total past due amount may not exceed 12 months and the mortgage may not be in foreclosure. The advance (called a partial claim) does not change the borrower's monthly payments, so servicers must ensure that borrowers can resume making their regular payments. Borrowers must complete a trial period of at least 3 months making their regularly scheduled monthly payments before the partial claim is executed. FHA reimburses the servicer for the partial claim and executes an interest-free subordinate lien for the amount, which is payable when the property is sold or the first mortgage is paid off. FHA provides servicers with incentive payments of \$500 per partial claim. FHA has paid claims on nearly 47,000 partial claims since January 2009.

FHA-HAMP Modifications: Borrowers for whom a standard modification is not sufficient may be evaluated for a HAMP-style modification under the authority provided to HUD in 2009. The delinquent loan must have been originated at least 12 months before, and the borrower must have paid at least four full monthly payments. FHA-HAMP modifications bring borrowers' monthly payments down to 31 percent of income by reducing interest rates to the market rate, extending the loan term to 30 years, and deferring principal. Rather than capitalizing past due amounts, however, servicers advance funds to reinstate the loan. FHA reimburses the servicer for the advance (as with a partial claim) and executes an interest-free subordinate lien in the amount of the advance plus any deferred principal. The amount of the subordinate lien cannot exceed 30 percent of the unpaid principal balance prior to the modification. FHA provides servicers with incentive payments of up to \$1,250 per FHA-HAMP modification. According to data from FHA officials, about 13,000 FHA-HAMP loan modifications have been completed since the program was implemented.

Preforeclosure Sales and Deeds-in-Lieu of Foreclosure (DIL): Under a preforeclosure sale agreement (also called a short sale), FHA accepts the proceeds of the sale as satisfying the mortgage debt, as long as the net proceeds (sales price minus certain costs) are at least 84 percent of the appraised value. A DIL is a voluntary transfer of a property from the borrower to FHA for a release of all obligations under the mortgage. FHA provides servicers with incentive payments of up to \$1,000 for each completed preforeclosure sale and borrowers with payment of \$750 to \$1,000. For DILs, servicers can receive incentive payments of \$250 per completed DIL transaction, and borrowers can receive \$2,000. Nearly 60,000 pre-foreclosure sales and DILs have been completed since the beginning of 2009.

The Department of Veterans Affairs (VA) has outlined the requirements for foreclosure mitigation programs in a series of guidance documents, which are summarized here. These guidelines apply only to mortgages that are guaranteed by VA.

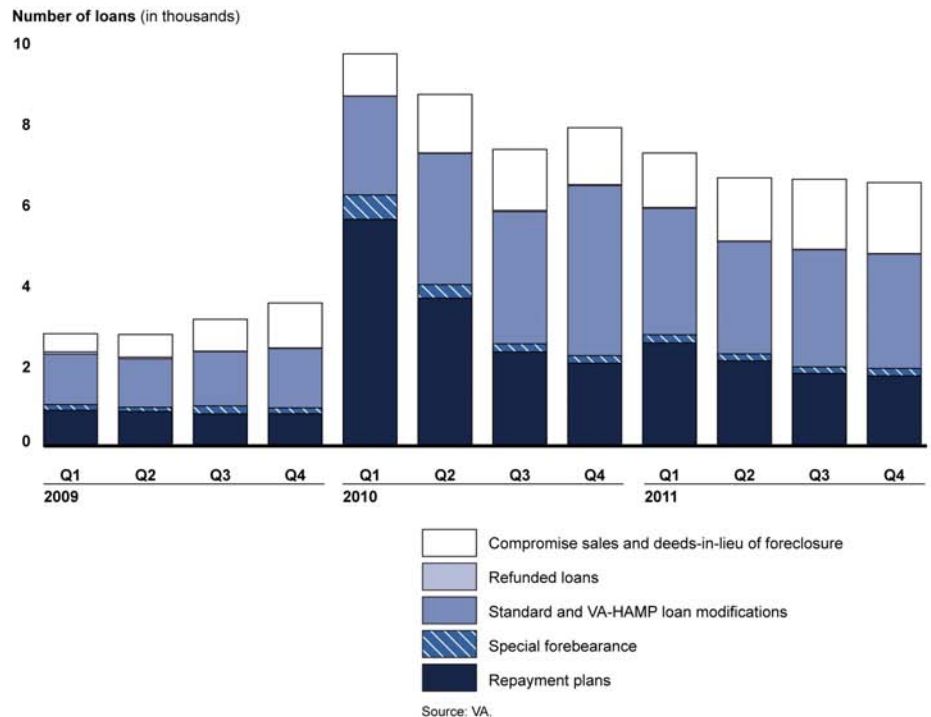
VA recommends that servicers consider foreclosure mitigation actions in the following order: repayment plans, special forbearance, loan modifications (including VA-HAMP), refunded loans, compromise sales, and deeds-in-lieu of foreclosure (DIL).

In addition, VA assigns each loan that is more than 60 days delinquent to a staff member, who monitors the servicer's activity to ensure appropriate action is taken to assist the veteran borrower. VA provides the contact information of the staff member to the borrower, as well as options for resolving the delinquency. If the loan becomes 120 days delinquent, the VA staff member performs a review of the adequacy of servicing, which includes reviewing the servicer's case notes, discussing the case with servicer staff, and serving as an intermediary between the servicer and borrower, if necessary. If VA determines the servicing has been adequate, another review will be performed in 90 days.

Appendix II: Foreclosure Mitigation Efforts

Department of Veterans Affairs (VA)

Figure 18: VA Foreclosure Mitigation Actions Completed by Calendar Quarter, 2009 through 2011



Repayment Plans: Repayment plans, which last at least 3 months, allow borrowers to make their normal monthly payments plus a portion of the past due amount. Servicers must establish that the borrower is financially able to make these payments and must review the plan monthly to ensure that the borrower is complying with the plan. VA provides servicers with incentive payments of up to \$200 for each repayment plan that reinstates a loan that was more than 60 days delinquent. According to data provided by VA officials, more than 25,000 repayment plans have been completed since January 2009.

Special Forbearance: VA recommends that servicers consider special forbearance for borrowers who would not be able to maintain a repayment plan. Special forbearance involves a written agreement in which the servicer agrees to reduce or suspend payments for a month or more. There is no maximum period for special forbearance plans. At the end of the forbearance period, the borrower must pay the total delinquency or enter into a repayment plan. VA provides servicers with incentive payments of up to \$200 for each special forbearance plan that reinstates a loan that was more than 60 days delinquent. However, if the borrower starts a repayment plan at the end of the forbearance period, the special forbearance is not eligible for the incentive payment. Instead, the servicer receives it on the repayment plan if the loan is reinstated. According to data from VA officials, about 2,600 special forbearance plans have been completed since the beginning of 2009.

Standard and VA-HAMP Loan Modifications: Servicers are allowed to modify loans without VA's prior approval provided certain regulatory conditions are met,

such as the borrowers must have made at least 12 full monthly mortgage payments, the loan is not modified more than once in a 3-year period, and no more than three times over the life of the loan. If the conditions are not satisfied, the servicer may seek VA prior approval to modify the loan if they have determined that the event or circumstance that caused the delinquency has been or will be resolved and is not expected to reoccur. The traditional loan modification results in a loan with a fixed interest rate that does not exceed the current market rate plus 50 basis points. The term of the loan may be extended to the shorter of 360 months after the due date of the first payment on the modification or 120 months after the original maturity date. According to VA officials, servicers are expected to use VA's underwriting guidance on affordability to determine whether the borrower can make the monthly payments, including recommended thresholds for residual income and debt-to-income ratios, with appropriate consideration of exculpatory or mitigating circumstances. If servicers determine that a traditional modification is not sufficient, they may evaluate the borrowers for a HAMP-style modification according to the guidelines VA issued in 2010. These VA-HAMP modifications involve reducing the interest rate to as low as 2 percent, extending the term of the loan to 480 months, and deferring principal.

VA provides servicers with incentive payments of up to \$700 for each loan modification that reinstates a loan that was more than 60 days delinquent. According to data from VA officials, about 30,000 loan modifications have been completed since the beginning of 2009. VA officials stated that they do not require servicers to specify whether the modifications they complete are traditional or VA-HAMP modifications when they report. However, the number of completed modifications increased markedly after the VA-HAMP guidance was issued in January 2010 (see figure).

Refunded Loans: VA may elect to purchase a loan and assume the servicing responsibilities if the servicer determines that modifying the loan is not in the servicer's economic interest. VA officials we spoke with said that VA evaluates refunding options under the terms of HAMP modifications using a VA net present value (NPV) model. If the NPV result is positive, VA will refund the loan. Even if the NPV result is negative, VA will evaluate the borrowers' circumstances and may decide to refund the loan if the circumstances warrant it. This process is typically the final attempt to keep veterans in their home. According to data from VA officials, about 250 loans have been refunded since the beginning of 2009.

Compromise (Short) Sales and Deeds-in-Lieu of Foreclosure (DIL): A compromise sale, also known as a short sale, is the first option the servicer should consider after determining that home retention options are not feasible. A compromise sale is typically for an amount that is less than the borrower's total indebtedness on the loan. VA provides servicers with incentive payments of up to \$1,000 for each completed compromise sale on loans that were more than 60 days delinquent. According to data provided by VA officials, almost 13,000 compromise sales have been completed since the beginning of 2009.

A DIL is a voluntary transfer of a property from the borrower to the holder for a release of all obligations under the mortgage. Servicers are to consider a DIL only after considering all other loss mitigation options and determining they are not viable. The servicer must obtain a VA appraisal of the property. After completing the DIL, the servicer may retain ownership of the property or transfer it to VA. VA provides servicers with incentive payments of up to \$350 per deed-in-lieu of foreclosure transaction that is completed on loans that were more than 60 days delinquent. According to data provided by VA officials, about 2,000 DILs have been completed since the beginning of 2009.

The Department of Agriculture (USDA) has outlined the requirements for foreclosure mitigation programs in a loss mitigation guide and regulations, which are summarized here. These guidelines apply only to mortgages that are guaranteed by USDA.

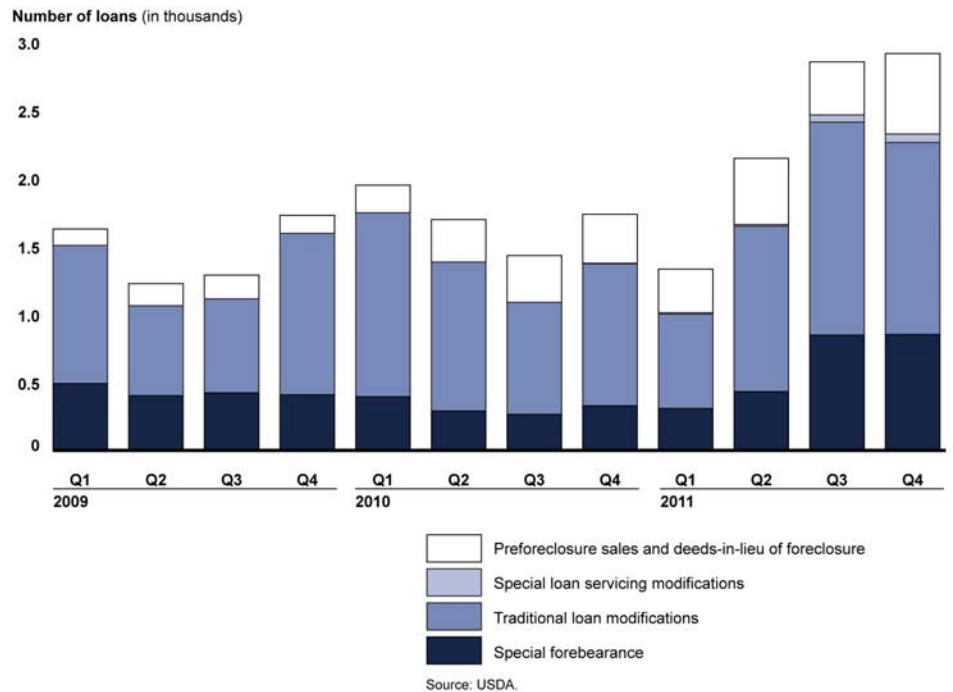
Servicers are encouraged to address delinquencies of one or two missed payments through an early intervention process. This process involves borrower analysis, where the servicer gathers information on the borrower's circumstances, intentions, and financial condition, and default counseling, where the servicer provides the borrower with information on available resources for housing counseling and loss mitigation options. During this process, the servicer may come to an informal forbearance arrangement, which lasts for 3 months or less, that helps the borrower reinstate the loan.

When moving into formal mitigation actions (which begin when the borrower is 90 days or more delinquent), servicers should determine first whether the default is curable or noncurable. For curable defaults, servicers should consider special forbearance, loan modifications, and special loan servicing. For noncurable defaults, servicers should consider preforeclosure sales and deeds-in-lieu of foreclosure.

Appendix II: Foreclosure Mitigation Efforts

Department of Agriculture (USDA)

Figure 19: USDA Foreclosure Mitigation Actions Approved by Calendar Quarter, 2009 through 2011



Special Forbearance: A special forbearance plan can be structured to gradually increase monthly payments to repay the past due amount over time (at least 4 months) or through a resumption of normal payments for 3 or more months followed by a loan modification. Servicers may also suspend or reduce payments for 1 or more months (typically for periods of up to 3 months) to allow the borrower to recover from the cause of the delinquency, or may allow the borrower to resume making full monthly payments while delaying the repayment of the past due amount. The past due amount must not exceed the equivalent of 12 months of principal, interest, taxes, and insurance. There is no maximum duration for special forbearance plans, but the term must be reasonable and based upon the borrower's repayment ability. USDA does not provide servicers with incentive payments for special forbearance plans. According to USDA, more than 5,000 special forbearance servicing plans were approved between January 2009 and December 2011.

Traditional Loan Modifications: Loan modifications can be offered only if borrowers are 3 or more months delinquent or in imminent danger of default. A loan that is in foreclosure must be removed from foreclosure status in order to be modified. Borrowers must be owner-occupants of the property and be committed to occupying the property as a primary residence. The servicer must verify the property's physical condition through an inspection before approving a modification. The term of the loan modification should not exceed 360 months from the date of the original loan, because USDA's guarantee is only in effect for 30 years from the date of the original loan. Loan modifications may include reducing interest rates, including to below market levels; capitalizing all or a portion of past due amounts into the mortgage balance; and reamortizing the

balance due. The modified balance may exceed the original loan balance and may equal more than 100 percent of the property's current value. Modified loans that become delinquent are to be treated as new delinquencies, and servicers are to go through the full loss mitigation process. USDA does not offer servicers incentive payments for completing loan modifications. According to USDA, almost 13,000 loan modification servicing plans were approved between January 2009 and December 2011.

Special Loan Servicing: Under regulations finalized in September 2010, USDA authorized servicers to provide additional relief to borrowers when traditional servicing methods do not provide a means to cure the default. As with loan modifications, the borrower must be in default or facing imminent default and must occupy the property as the primary residence and intend to continue doing so. Under this authority, called special loan servicing, servicers must reduce the interest rate to the market rate plus 50 basis points and extend the loan term up to 30 years. If necessary, the servicer may reduce the interest rate further, extend the term of the loan to up to 40 years from the date of the modification, and/or advance funds to satisfy the borrower's past due amount, including legal fees and costs related to a canceled foreclosure. In addition, the servicer may defer principal. The sum of funds advanced cannot exceed 30 percent of the unpaid principal balance at the time of default and cannot cover past due amounts of more than 12 months of principal, interest, taxes, and insurance. USDA will reimburse the servicer for this amount and the borrower will execute a subordinate lien that is due when the property is sold or the mortgage paid off. Borrowers who are delinquent at the time of special loan servicing must complete a 3-month trial period, and borrowers who are in imminent default a 4-month trial period. According to USDA, 143 special loan servicing modification plans were approved between January 2009 and December 2011.

Preforeclosure Sales and Deeds-in-Lieu of Foreclosure (DIL): A preforeclosure sale, also known as a short payoff or short sale, is the first option servicers are to consider after determining that a borrower cannot resolve a default. A preforeclosure sale is generally for an amount that is less than the borrower's total indebtedness on the loan. The preforeclosure sale period is typically 3 months, and the servicer must review the sale plan every 30 days. If no closing date is scheduled within 90 days, the servicer may discuss the likelihood of a sale with the real estate broker and determine whether to extend the sale period by 30 days (if a sale is likely) or end the sale period. USDA provides servicers with incentive payments of up to \$1,000 for each completed sale. According to USDA, almost 3,000 preforeclosure sale servicing plans were approved between January 2009 and December 2011.

A DIL is a voluntary transfer of a property from the borrower to the holder for a release of all obligations under the mortgage. A DIL is preferable to foreclosure because it avoids the time and expense of a legal foreclosure action, and the property is generally in better physical condition because the borrower is cooperating with the servicer. USDA provides servicers with incentive payments of up to \$250 for each completed DIL transaction. According to USDA, more than 200 DIL servicing plans were approved between January 2009 and December 2011.

Refinancing can provide relief to borrowers who need lower monthly payments, but borrowers who are delinquent or who owe more than their homes are worth are generally unable to qualify. Here we present information on federal refinance programs that specifically target distressed borrowers.

Appendix II: Foreclosure Mitigation Efforts

Refinance Programs Targeting Distressed Borrowers

Home Affordable Refinance Program: The Home Affordable Refinance Program (HARP) was announced in February 2009 as a way to help borrowers who were current on their mortgage payments but unable to refinance because of declining home values. Under HARP, such borrowers can benefit from reduced interest rates that make their mortgage payments more affordable. Only mortgages owned by Fannie Mae and Freddie Mac are eligible. Initially, HARP targeted borrowers with current loan-to-value (LTV) ratios between 80 percent and 105 percent, although in July 2009 the Federal Housing Finance Agency (FHFA) revised those requirements to include borrowers with current LTV ratios of up to 125 percent. To respond to continued weakness in the housing market, including the large number of borrowers with significant negative equity (current LTV ratios that are greater than 125 percent), FHFA announced changes to HARP in October 2011. Among these changes was the removal of the LTV cap—allowing borrowers with current LTV ratios above 125 percent to refinance—and reduced delivery fees (fees that the enterprises charge to servicers and that are typically passed on to the borrower). The standard mortgage insurance requirements for these refinance loans were relaxed so that borrowers who did not have mortgage insurance on their existing loan did not have to purchase it for their refinanced loan, something that would typically be required for a loan with an LTV ratio of more than 80 percent.

FHA Refinance for Homeowners in Negative Equity Positions: Treasury worked in conjunction with FHA to establish the FHA Refinance for Borrowers in Negative Equity Positions (FHA Short Refinance), which is in part supported by TARP funds. For loans refinanced under the FHA Short Refinance program, Treasury will pay claims on those loans up to a predetermined percentage after FHA has paid its portion of the claim. This program took effect in September 2010 and provides an opportunity to borrowers who are current on their mortgage payments and who have loans not insured by FHA that have current LTV ratios greater than 100 percent to refinance into an FHA-insured mortgage. In order to qualify, investors must write down at least 10 percent of the outstanding principal and achieve an LTV ratio of no more than 97.75 percent. Through December 2011, FHA Short Refinance has had limited success, reaching 646 borrowers.

Borrowers who receive a refinance under the FHA Short Refinance program and who have second liens may qualify for relief under the Treasury/FHA Second Lien Program. Treasury provides incentives to investors and servicers for partially or fully extinguishing these second liens. While Treasury allocated \$2.7 billion in TARP funds to the program, it had not made any incentive payments as of December 31, 2011, and no second liens had been extinguished.

There are many other efforts that have been undertaken, including those by states, localities, and private organizations to mitigate foreclosures. Here we highlight three other efforts: the FDIC loan modification program, which was considered in developing the Home Affordable Modification Program (HAMP); the Housing Finance Agency Innovation Fund for Hardest Hit Housing Markets, which provides TARP funds to 18 states and the District of Columbia to develop innovative solutions to address housing problems; and the Emergency Homeowners Loan Program, which provided funds to the remaining 32 states and Puerto Rico to provide temporary assistance to unemployed borrowers.

Appendix II: Foreclosure Mitigation Efforts

Other Selected Efforts

FDIC Loan Modifications: On July 11, 2008, FDIC was named conservator of IndyMac Federal Bank. Soon after, FDIC developed a loan modification program to modify nonperforming mortgages owned or serviced by the bank into affordable loans. Under that program, the goal was to reduce monthly payments to 38 percent of monthly gross income (this amount was subsequently changed to 31 percent, the same as HAMP) through capitalization, interest rate reduction, term extension, and, if necessary, principal forbearance—the same waterfall used by HAMP. The loan modification program implemented at Indymac Federal Bank served as a model for loan modification requirements found in Shared-Loss Agreements. According to FDIC staff, no federal funds have been expended for these failed bank resolutions.

Housing Finance Agency Innovation Fund for the Hardest Hit Housing Markets (Hardest Hit Fund): Treasury obligated \$7.6 billion to 18 state housing finance agencies in states that were designated as among the hardest hit by the housing crisis, plus the District of Columbia. These states were to develop innovative solutions appropriate for their states. Treasury approved plans for these states' programs, which totaled 55 as of December 2011. These programs target unemployed borrowers with temporary relief as well as offer loan modification assistance, refinance options, and foreclosure alternatives.

Emergency Homeowners Loan Program: Through the Emergency Homeowners Loan Program (EHLP), HUD provided short-term loans to unemployed borrowers to help meet their mortgage obligations in the 32 states and Puerto Rico that did not receive Hardest Hit Fund dollars. The program was designed to provide mortgage payment relief (up to \$50,000 total) to eligible homeowners experiencing a drop in income of at least 15 percent to cover past-due mortgage payments as well as a portion of the homeowner's mortgage payment for up to 24 months. HUD permitted five states with similar programs already in place—Connecticut, Delaware, Idaho, Maryland, and Pennsylvania—to direct their allocations to those programs. NeighborWorks America, a federally chartered nonprofit organization, administers EHLP for the remaining 27 states and Puerto Rico that did not receive Hardest Hit Fund dollars and did not have existing programs similar to EHLP. Applications for funds under EHLP were due in September 2011. HUD reported that, as of September 30, 2011, slightly more than half of the \$1 billion allocated to the program had been obligated. As of December 2011, more than 5,500 EHLP loans had been closed and nearly 6,000 other loans were in process.

Appendix III: Description of GAO's Methodology to Identify Loan Modifications

This appendix describes the algorithms we developed to identify mortgages that received a modification action and the steps we took to demonstrate the reliability of our results. By identifying the modification actions, we were able to examine the timing and characteristics of modification activity, and to see how certain characteristics affected the loan performance of a broad set of modified mortgages. We developed the algorithms because direct information on loan modifications is not generally available, and is not reported in the proprietary loan-level data set of prime, Alt-A, and subprime mortgages compiled by CoreLogic, an aggregator of monthly mortgage data reported by servicers that have agreed to provide this information. The CoreLogic data provide wide coverage of the entire mortgage market—approximately 65 percent to 70 percent of prime loans and about 50 percent of subprime loans, according to CoreLogic officials.¹ First, we took several steps to prepare the data so that we would have complete and clean loan performance histories. Second, we developed algorithms to identify month-to-month changes in loan terms that would indirectly indicate the presence of modifications. We reviewed statistics on the volume and features of loan modifications contained in OCC's mortgage metric reports and shared our approach and algorithms with a variety of researchers, analysts, and regulators, making adjustments in response to their comments. Finally, we assessed the performance of our algorithms by applying them to a large set of mortgages serviced by entities subject to OCC's regulation. These servicers provided information on modifications and loan and borrower characteristics directly to OCC.

Data Source and Preparation

We began with a sample of mortgages in the CoreLogic database that met certain requirements. Specifically, we restricted our analysis to first-lien mortgages for the purchase or the refinancing of single-family residential properties (1- to 4-units) located in the 50 states and the District of Columbia that were active during the period from January 2007 through June 2011. We took a 15-percent sample of this set of loans that resulted in a set of 7,608,603 prime (and Alt-A) mortgages and 608,704 subprime mortgages. For each mortgage, the CoreLogic database provided information on selected loan and borrower characteristics at

¹Due to the proprietary nature of CoreLogic's estimates of its market coverage, we could not assess the reliability of these estimates.

origination.² It also provided a series of monthly observations on, among other items, the balance, scheduled payment, interest rate, and mortgage status (current; 30, 60, or 90 or more days delinquent; in foreclosure; real estate owned; or paid in full). This yielded a panel data set with a sequence of monthly observations for each loan. Because we required information on month-to-month changes for certain loan characteristics, such as balance and interest rate, we needed complete and reliable information on these characteristics for each month that a loan was active during the period. However, many mortgages, particularly subprime mortgages, had an incomplete set of monthly observations, often because a servicer stopped providing information to CoreLogic.³ In these cases, we had a sequence of monthly observations early on but not complete information for our entire period, even though the mortgage was still active. We also had incomplete data for loans that were transferred from servicers that did not participate with CoreLogic to servicers that did and for loans with servicers who joined CoreLogic later in our sample period, leaving us without information on the earlier mortgage activity. We excluded loans with these and other data-reporting issues that impaired our ability to identify loan modifications over our time period.⁴ For the remaining loans (those with complete information), we calculated the changes in interest rate, balance, and scheduled payment from their values in the previous month.

Development of Algorithms

To identify modification actions we developed decision rules or algorithms for identifying monthly changes in mortgage terms that were likely to indicate an actual modification action. Some changes to mortgage terms were expected, but others were not. For instance, in the case of a fully amortizing, fixed-rate mortgage, the interest rate should not change for

²In practice, this “static” information could have been overwritten, such as at the time of a loan modification. Therefore, all original loan term data may not be accurate. We discussed this issue with CoreLogic and determined that the data were sufficiently reliable for our purposes.

³Generally, servicers stop providing information to CoreLogic because servicing rights were transferred from a servicer that participated with CoreLogic to a servicer that did not, or because a servicer ended its participation with CoreLogic.

⁴Specifically, we also excluded mortgages if they had an initial balance of zero dollars, or if there was more than 3 months difference between the month of first payment and the month of origination or between the month of origination and the month when the loan was added to the CoreLogic data.

the entire duration of the mortgage. Thus any change to the interest rate should indicate a modification. But in the case of an adjustable rate mortgage (ARM) or hybrid mortgage, the interest rate changes in expected ways according to reset provisions in the mortgage contract. Thus, a change to the interest rate in a month in which a rate change was expected and by an amount consistent with identified reset parameters would likely not indicate a modification. Our decision rules differed depending on whether a mortgage was a fixed-rate mortgage, ARM, or hybrid mortgage.

Because we could observe month-to-month changes in interest rates and loan balance, our algorithms focus on interest rate decreases, balance increases, and balance decreases that were likely to indicate a modification. We relied on rules developed by Federal Reserve Bank researchers to inform our initial screens.⁵ Their approach screened out quite small changes and set upper and lower bounds on balance changes. In some contexts, they also used information on a loan's performance status as part of their decision rules—for instance, by requiring that observed changes be counted as modifications only if the mortgage was delinquent before the observed change. We modified these concepts, initially, accepting as potential modifications even very small changes in interest rates and balances. We did not impose upper bounds on balance changes, and we did not require that loans be delinquent. We made the latter decision because the HAMP program provides modifications for borrowers who are in imminent risk of default on their mortgages, even though they may be current in their payments. Additionally, in the case of prime, subprime and Alt-A hybrid loans, and subprime ARM loans, we compared the interest rate in the month of a rate change to the rate that equaled the loan's specified margin and the specified index interest rate that was used to determine any adjustments. If the rate in the month of a rate change was lower than our calculated rate by more than 100 basis points, we accepted the change as a modification because the decrease was large relative to what would be expected.

We placed each identified action into one of five broad categories: capitalization accompanied by a rate reduction; capitalization only; rate

⁵Manuel Adelino ,Kristopher Gerardi, and Paul S. Willen "Why Don't Lenders Renegotiate More HomeMortgages? Redefaults, Self-Cures, and Securitization" Public Policy Discussion Papers, 09-4, Federal Reserve Bank of Boston (July 2009).

reduction only; balance decrease accompanied by a rate reduction; and balance reduction only. For a month-to-month balance decrease, we could not distinguish between balance forbearance and balance forgiveness. In addition, because these month-to-month changes were net changes, we could not identify modifications in which arrears were added to the balance (capitalization) at the same time as an offsetting balance reduction. For example, we could not distinguish a (net) balance decrease modification from a modification in which a capitalization is more than offset by balance forbearance or forgiveness. Similarly, we could not distinguish a (net) balance increase modification from a modification in which a capitalization is less than offset by balance forbearance or forgiveness.

After examining the resulting volume, timing, and composition of our initial set of identified actions and incorporating information from OCC mortgage metric data, we tightened our screens by adjusting the lower bounds, including upper bounds, and imposing some loan performance conditions (see table 2). We discussed our general approach with Federal Reserve Bank researchers, OCC staff, representatives from CoreLogic, and representatives from Amherst Securities Group, LP. Further, we discussed our preliminary results with these researchers, OCC staff, and representatives from CoreLogic.

Table 2: Screens Used to Identify Loan Modifications

Modification type	Rate screen	Balance screen	Additional screen
Capitalization and rate reduction	Exceed 12.5 basis points	Increase between 0.5% and 50%	None
Capitalization only	NA	Increase between 2.25% and 50%	Performance: loan must be delinquent in prior month
Rate reduction only	Exceed 100 basis points	NA	None
Balance decrease and rate reduction	Exceed 12.5 basis points	Decrease between 2% and 50%	Concurrent decrease in scheduled payment and loan must be delinquent in prior month
Balance decrease only	NA	Decrease between 4% and 50%	Concurrent decrease in scheduled payment and loan must be delinquent in prior month

Source: GAO.

We did not attempt to identify modifications with only a term extension characteristic because of data reliability issues concerning information on a loan's original term and maturity date and because this type of modification occurred fairly infrequently. However, for months in which we did find a rate change or balance change, we solved for the amortization

period associated with other mortgage characteristics at modification, and estimated whether and by how much the mortgage term had been extended. Specifically, we placed each action into one of three term extension categories: with term extension (if the estimated term extension was between 4 and 200 months); no term extension (if the estimated term extension was less than 4 months or greater than 200 months); or unknown term extension (if we were not able to calculate a measure of term extension).

Robustness Test

Our algorithms performed well when applied to a database of mortgages containing information reported by servicers on both modified and nonmodified loans. We were able to obtain information from OCC's database on mortgage characteristics and monthly loan performance for two samples of 1,000,000 loans that were active for at least some portion of the period from January 2009 to December 2010.⁶ One sample included known modified loans, the other loans that had not been modified. We used similar data cleaning steps we developed for the CoreLogic data to screen out mortgages without complete and reliable histories and selected only fixed-rate mortgages for our robustness test. We examined fixed-rate mortgages because they were by far the most prominent mortgage type in our CoreLogic data sample. Because ARMs by definition have more month-to-month changes than fixed-rate mortgages, algorithms for ARMs are likely to be less successful in identifying true modifications. To the extent that ARMs were proportionately more troubled and more likely to be candidates for modification, this difficulty was a limitation. Nonetheless, we believe our overall approach was reasonable and reliable. Furthermore, our econometric analysis in appendix V is robust to the issue of ARM modifications.

We were left with 434,635 fixed-rate mortgages with known modifications and 513,645 fixed-rate mortgages without modifications. When we applied our algorithms to the set of 434,635 modified mortgages, we identified 415,367 as having at least one modification action. Because a

⁶The OCC database was generated by loan-level data submitted by nine large servicers—which are: Bank of America, JP Morgan Chase, Citibank, HSBC, Metlife, PNC, U.S. Bank, Wells Fargo, and OneWest Bank. The OCC uses the data to produce its Mortgage Metrics Reports and estimated that these servicers represent about 60 percent of all first-lien residential mortgages outstanding.

mortgage can receive a modification action in more than one month, we identified a total of 450,131 modification actions over this time period. Table 3 shows the relationship between OCC's data and GAO's at the loan level, combining the known modified and nonmodified loans.

Table 3: Relationship between OCC and GAO Modification Status at the Loan Level

	OCC: No	OCC: Yes	Total
GAO: No	511,405	19,268	530,673
GAO: Yes	2,240	415,367	417,607
Total	513,645	434,635	948,280

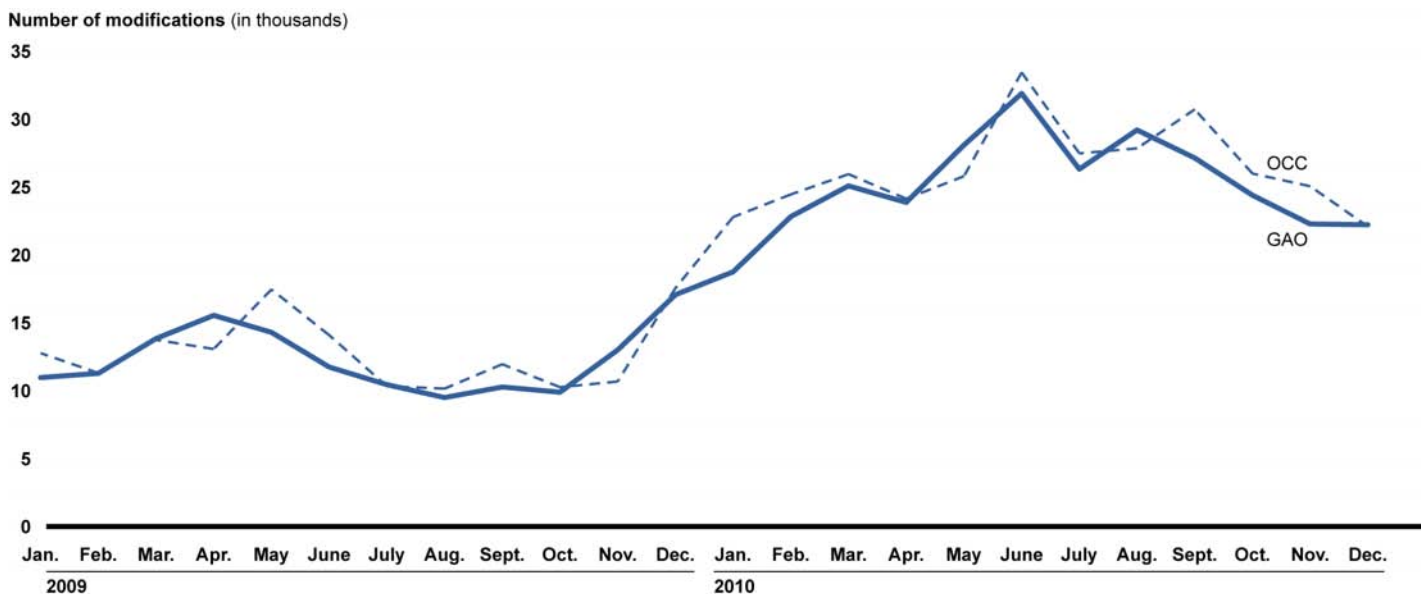
Source: GAO analysis of OCC data.

Of the 434,635 loans for which there was at least one directly reported modification action, we missed 19,268 (4.4 percent) of them. We believe that this percentage is an acceptable incidence of false negatives. Of the loans for which our algorithms did not indicate a modification, about 10 percent of the actions were reported to be term extensions only. We did not develop algorithms for this type of modification because of data limitations and evidence that term extensions only were not frequent. Approximately 40 percent were rate reductions only with very small rate movements, and approximately 30 percent were capitalization-only actions. For the set of 513,645 nonmodified loans, our algorithms identified 2,240 loans with at least one modification action, or 0.4 percent of these loans. OCC staff expressed concerns about the usefulness of an algorithmic approach to the identification of modifications. Nonetheless, we interpret our low rate of false negatives in conjunction with this low false positive rate to mean that our decision rules were appropriate. That is, our algorithms found virtually all of the known modifications and very few modifications in the nonmodified sample.

We were also interested in assessing how the volume of modification actions captured by our algorithms compared to the volume of directly reported modification actions over time. In OCC's monthly mortgage data, we defined the month of a modification as the month when the database field for the date of last modification matched the month of the data record. For example, in the February 2010 data record, the date of last modification indicated that a modification occurred in February 2010. In some cases, however, the date of last modification was not reported until after the fact—for example, a data record for September 2010 might provide the first indication that a modification had occurred in June 2010. In these cases, we selected as the month of modification the month

indicated as the month of last modification, even if it was not reported until later. We totaled modification actions for each month from January 2009 through December 2010 for the directly reported actions and for those identified by our algorithms. Figure 20 presents the modification volume during the period and shows that the pattern indicated by the application of our algorithms is comparable to the pattern of modifications provided directly by servicers.

Figure 20: Comparison of Modification Volumes of Fixed-Rate Mortgages as Described by OCC Data and GAO Algorithms Applied to OCC Data, 2009 through 2010



Source: GAO analysis of OCC data.

Appendix IV: Loans with Characteristics Associated with Increased Likelihood of Foreclosure

We analyzed CoreLogic data to identify the number and percentage of prime and subprime loans with characteristics associated with an increased likelihood of foreclosure in June 2009, 2010, and 2011. Specifically, we analyzed loans with the following characteristics that we identified as being associated with an increased likelihood of foreclosure:

- delinquency of 60 days or more;
- current loan-to-value (LTV) ratio of 125 percent or higher;
- local area unemployment of 10 percent or higher and current LTV of 125 percent or higher;
- mortgage interest rate that is 1.5 percentage points or 150 basis points above market rate;
- origination credit score of 619 or below; and
- origination LTV of 100 percent or greater.

We analyzed the volume of prime and subprime loans with each characteristic as of June 2009, 2010, and 2011. In addition, we evaluated these characteristics by performance, investor (prime loans only), loan type (prime loans only), and product type at origination. Finally, we assessed the extent to which loans had multiple characteristics and the prevalence of overlap among characteristics. For a detailed description of our analysis, please see appendix I.

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Table 4: Number and Percentage of Prime Loans with Characteristics Associated with Increased Likelihood of Foreclosure, June 2009 through June 2011

Date	Delinquent 60 days or more		Current LTV 125 percent or higher		Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher		Mortgage interest rate that is 1.5 percentage points or higher above market rate		Origination credit score of 619 or below		Origination LTV of 100 percent or higher	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
June 2009	1,439,054	6%	1,339,214	6%	846,113	4%	2,955,001	13%	1,402,229	6%	1,346,726	6%
June 2010	1,801,816	8%	1,141,927	5%	871,140	4%	3,229,644	14%	1,300,627	6%	1,427,912	6%
June 2011	1,583,498	7%	1,313,108	6%	880,509	4%	2,850,977	12%	1,189,051	5%	1,448,479	6%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Loans may have more than one characteristic.

Table 5: Number and Percentage of Subprime Loans with Characteristics Associated with Increased Likelihood of Foreclosure, June 2009 through June 2011

Date	Delinquent 60 days or more		Current LTV 125 percent or higher		Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher		Mortgage interest rate that is 1.5 percentage points or higher above market rate		Origination credit score of 619 or below		Origination LTV of 100 percent or higher	
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
June 2009	361,809	35%	166,495	16%	104,209	10%	682,461	66%	541,995	53%	95,946	9%
June 2010	355,769	39%	144,572	16%	108,023	12%	467,794	51%	487,183	53%	81,236	9%
June 2011	312,392	38%	163,920	20%	109,394	13%	276,603	34%	443,315	54%	69,564	8%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Loans may have more than one characteristic.

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Table 6: Percentage of Prime Loans by Performance Status for All Loans and Characteristics Associated with Increased Likelihood of Foreclosure, June 2011

Performance	All loans	Delinquent 60 days or more	Current LTV 125 percent or higher	Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher	Mortgage interest rate that is 1.5 percentage points or higher above market rate	Origination credit score of 619 or below	Origination LTV of 100 percent or higher
Current	91%	n/a	63%	63%	77%	68%	82%
30 to 59 days delinquent	3%	n/a	5%	4%	5%	10%	5%
60 to 89 days delinquent	1%	14%	2%	2%	2%	4%	2%
90 days or more delinquent	3%	43%	14%	13%	7%	10%	6%
In foreclosure	3%	43%	16%	17%	9%	7%	6%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Notes: Percentages may not add up to 100 percent due to rounding; n/a = not applicable.

Table 7: Percentage of Subprime Loans by Performance Status for All Loans and Characteristics Associated with Increased Likelihood of Foreclosure, June 2011

Performance	All loans	Delinquent 60 days or more	Current LTV 125 percent or higher	Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher	Mortgage interest rate that is 1.5 percentage points or higher above market rate	Origination credit score of 619 or below	Origination LTV of 100 percent or higher
Current	53%	n/a	36%	36%	42%	47%	50%
30 to 59 days delinquent	8%	n/a	7%	7%	8%	10%	9%
60 to 89 days delinquent	4%	10%	4%	3%	3%	5%	4%
90 days or more delinquent	18%	46%	26%	26%	22%	20%	18%
In foreclosure	17%	44%	27%	28%	24%	18%	18%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Notes: Percentages may not add up to 100 percent due to rounding; n/a = not applicable.

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Table 8: Percentage of Prime Loans by Investor for All Loans and Characteristics Associated with Increased Likelihood of Foreclosure, June 2011

Investor	All loans	Delinquent 60 days or more	Current LTV 125 percent or higher	Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher	Mortgage interest rate that is 1.5 percentage points or higher above market rate	Origination credit score of 619 or below	Origination LTV of 100 percent or higher
Enterprises	66%	45%	52%	53%	66%	33%	30%
Ginnie Mae	19%	10%	12%	10%	13%	42%	53%
Portfolio	5%	19%	11%	10%	7%	16%	9%
Securitized other	6%	19%	18%	19%	9%	6%	4%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages do not add up to 100 percent because of additional investor types not included in this description.

Table 9: Percentage of Prime Loans by Loan Type for All Loans and Characteristics Associated with Increased Likelihood of Foreclosure, June 2011

Loan type	All loans	Delinquent 60 days or more	Current LTV 125 percent or higher	Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher	Mortgage interest rate that is 1.5 percentage points or higher above market rate	Origination credit score of 619 or below	Origination LTV of 100 percent or higher
Conventional	78%	73%	83%	86%	85%	42%	44%
FHA	17%	23%	14%	12%	13%	51%	12%
VA	3%	3%	2%	2%	1%	6%	35%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages do not add up to 100 percent because of additional loan types not included in this description.

Table 10: Percentage of Prime Loans by Loan Product Type for All Loans and Characteristics Associated with Increased Likelihood of Foreclosure, June 2011

Loan product	All loans	Delinquent 60 days or more	Current LTV 125 percent or higher	Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher	Mortgage interest rate that is 1.5 percentage points or higher above market rate	Origination credit score of 619 or below	Origination LTV of 100 percent or higher
Fixed	90%	76%	69%	67%	86%	94%	93%
ARM	5%	12%	17%	17%	5%	4%	6%
Hybrid	5%	12%	15%	16%	8%	2%	1%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

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Note: Percentages may not add up to 100 percent because of additional product types not included in this description.

Table 11: Percentage of Subprime Loans by Loan Product Type for All Loans and Characteristics Associated with Increased Likelihood of Foreclosure, June 2011

Loan product	All loans	Delinquent 60 days or more	Current LTV 125 percent or higher	Local area unemployment of 10 percent or greater and current LTV of 125 percent or higher	Mortgage interest rate that is 1.5 percentage points or higher above market rate	Origination credit score of 619 or below	Origination LTV of 100 percent or higher
Fixed	60%	46%	46%	46%	58%	56%	61%
ARM	19%	23%	26%	25%	17%	21%	26%
Hybrid	14%	23%	22%	23%	19%	17%	11%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages do not add up to 100 percent because of additional product types not included in this description.

Table 12: Percentage of Prime and Subprime Loans with Characteristics Associated with Increased Likelihood of Foreclosure by Number of Characteristics per Loan, June 2011

Number of characteristics	Prime	Subprime
One	67%	40%
Two	21%	33%
Three	9%	18%
Four	3%	7%
Five	0%	3%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: We considered a loan with either or both an origination credit score of 619 or less or an origination LTV score of 100 percent or higher to have one characteristic—that is, an origination characteristic—associated with an increased likelihood of foreclosure.

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Table 13: Percentage of Prime and Subprime Loans Delinquent 60 Days or More without and with Additional Characteristics Associated with an Increased Likelihood of Foreclosure, by Characteristic, June 2011

	Prime	Subprime
Loans delinquent 60 days or more only	39%	14%
Loans delinquent 60 days or more with additional characteristics		
Current LTV 125 percent or higher	27%	30%
Local area unemployment 10 percent or greater and current LTV 125 percent or higher	18%	20%
Mortgage interest rate that is 1.5 percentage points or higher above market rate	33%	44%
Origination credit score of 619 or below	16%	60%
Origination LTV 100 percent or higher	12%	9%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages will not add up to 100 percent as loans may have more than one additional characteristic.

Table 14: Percentage of Prime and Subprime Loans with Current LTV 125 Percent or Higher without and with Additional Characteristics Associated with an Increased Likelihood of Foreclosure, by Characteristic, June 2011

	Prime	Subprime
Loans with current LTV 125 percent or higher only	11%	4%
Loans with current LTV 125 percent or higher with additional characteristics		
Delinquent 60 days or more	32%	57%
Local area unemployment 10 percent or greater and current LTV 125 percent or higher	67%	67%
Mortgage interest rate that is 1.5 percentage points or higher above market rate	34%	40%
Origination credit score of 619 or below	8%	52%
Origination LTV 100 percent or higher	16%	14%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac Primary Mortgage Market Survey.

Note: Percentages will not add up to 100 percent because loans may have more than one additional characteristic.

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Table 15: Percentage of Prime and Subprime Loans with Local Area Unemployment of 10 Percent or Greater and Current LTV of 125 Percent or Higher without and with Additional Characteristics Associated with an Increased Likelihood of Foreclosure, by Characteristic, June 2011

	Prime	Subprime
Loans with local area unemployment of 10 percent or greater and current LTV of 125 percent or higher only	40%	14%
Loans with local area unemployment of 10 percent or greater and current LTV of 125 percent or higher with additional characteristics		
Delinquent 60 days or greater	33%	58%
Mortgage interest rate that is 1.5 percentage points or higher above market rate	33%	40%
Origination credit score of 619 or below	7%	52%
Origination LTV 100 percent or higher	12%	10%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages will not add up to 100 percent because loans may have more than one additional characteristic.

Table 16: Percentage of Prime and Subprime Loans with Mortgage Interest Rate That Is 1.5 Percentage Points or Higher above Market Rate without and with Additional Characteristics Associated with an Increased Likelihood of Foreclosure, by Characteristic, June 2011

	Prime	Subprime
Loans with mortgage interest rate that is 1.5 percentage points or higher above market rate only	61%	17%
Loans with mortgage interest rate that is 1.5 percentage points or higher above market rate with additional characteristics		
Delinquent 60 days or greater	18%	50%
Current LTV 125 percent or higher	16%	24%
Local area unemployment 10 percent or greater and current LTV 125 percent or higher	10%	16%
Origination credit score of 619 or below	10%	58%
Origination LTV 100 percent or higher	9%	8%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages will not add up to 100 percent because loans may have more than one additional characteristic.

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Table 17: Percentage of Prime and Subprime Loans with an Origination Credit Score of 619 or below without and with Additional Characteristics Associated with an Increased Likelihood of Foreclosure, by Characteristic, June 2011

	Prime	Subprime
Loans with an origination credit score of 619 or below only	51%	32%
Loans with an origination credit score of 619 or below with additional characteristics		
Delinquent 60 days or greater	21%	43%
Current LTV 125 percent or higher	9%	19%
Local area unemployment 10 percent or greater and current LTV 125 percent or higher	5%	13%
Mortgage interest rate that is 1.5 percentage points or higher above market rate	24%	36%
Origination LTV 100 percent or higher	13%	8%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages will not add up to 100 percent because loans may have more than one additional characteristic.

Table 18: Percentage of Prime and Subprime Loans with Origination LTV of 100 Percent or Higher without and with Additional Characteristics Associated with an Increased Likelihood of Foreclosure, by Characteristic, June 2011

	Prime	Subprime
Loans with origination LTV of 100 percent or higher only	62%	19%
Loans with origination LTV of 100 percent or higher with additional characteristics		
Delinquent 60 days or greater	13%	41%
Current LTV 125 percent or higher	14%	33%
Local area unemployment 10 percent or greater and current LTV 125 percent or higher	7%	16%
Mortgage interest rate that is 1.5 percentage point or higher above market rate	17%	31%
Origination credit score of 619 or below	11%	48%

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Freddie Mac's Primary Mortgage Market Survey.

Note: Percentages will not add up to 100 percent because loans may have more than one additional characteristic.

Appendix V: Description of GAO's Econometric Analysis of Redefault of Modified Loans

This appendix provides (1) a summary of the characteristics of loans in the CoreLogic proprietary loan-level servicing database that we used in our econometric analysis of loans that redefaulted (became 90 days or more delinquent or in foreclosure) 6 months after receiving loan modification actions and a comparison of the characteristics of loans in the CoreLogic data set and Treasury's Home Affordable Modification Program (HAMP) data set, and (2) the results of our econometric analysis of the relationship between redefault rates and modification actions, controlling for several observable borrower and loan characteristics.¹

We used the CoreLogic database to analyze loans that had been modified under a variety of programs, including proprietary programs and federal programs, such as loans modified through the Department of the Treasury's HAMP. In addition, we analyzed information from a Treasury database that contained information only on loans that were considered for or received HAMP loan modifications. Although the CoreLogic data set does not include data from all servicers, because it covers a significant portion of the mortgage market, we used it to approximate the universe of loans. The HAMP data set includes loans that had initiated trial modifications and loans that had converted to permanent modifications.² For our analysis of HAMP data, our redefault rate is only for permanent modifications. For the CoreLogic data, we could not distinguish between trial and permanent modifications.

Using the above data, we described the borrower and loan characteristics of modifications from the universe of loans represented in the CoreLogic database and loans in the HAMP data set. We compared differences between them, focusing on the differences in borrower and loan characteristics, and in loan performance. We also used an econometric analysis to examine the characteristics of borrowers and loans that redefaulted postmodification. First, we looked at the effectiveness of different modification actions (e.g. interest rate reductions, term extensions, loan balance reductions) in reducing redefaults. Second, we

¹The econometric methodology and findings were reviewed by officials at the Treasury Department, Department of Housing and Urban Development, Federal Housing Finance Agency, Federal Reserve Board, and the Office of the Comptroller of the Currency.

²The HAMP program requires borrowers to complete a trial period plan before converting to a permanent modification. GAO has investigated factors that determine whether an at-risk loan that enters the trial period plan under HAMP converts to a permanent modification; see [GAO-11-288](#).

compared the effectiveness of HAMP modifications and the universe of modifications identified in the CoreLogic data in reducing redefaults. Third, we examined whether a relationship existed between monthly payment reductions and redefault rates. Finally, we looked at the effect of borrower and loan characteristics (such as the delinquency status of the borrower prior to receiving loan modification and negative home equity) on redefault rates.

Data Used

The CoreLogic database contains loan-level information on mortgage servicing. According to CoreLogic officials, it covers approximately 65 to 70 percent of the prime loans and about 50 percent of the subprime loans in the U.S. mortgage market. The database contains detailed information on the characteristics of purchase and refinance mortgages. We used these data to represent the universe of loans that received modification actions between January 2009 and December 2010. We constructed data for loans that had aged at least 6, 12, or 18 months since modification. Although a loan could receive multiple modification actions over time, we recorded each modification action for the same loan as a separate loan.³ The data contain static and dynamic monthly data files. The static data fields are populated as of loan origination and include variables such as the loan purpose and product type.⁴ This is supplemented by monthly data fields ("transactional" data) that reflect the current loan terms (such as interest rate) and loan performance. The CoreLogic database has limitations, including the lack of data on some important variables, such as the type of modification action and FICO credit scores at the time of loan modification. Because this data set did not contain direct information about the presence of modifications, we developed a set of algorithms to infer if the loan had been modified.⁵ In addition, the CoreLogic database has incomplete information on key variables, such as second-liens and loan investor or ownership. We explicitly excluded from the analysis mortgages with certain characteristics, including loans that were paid off

³See, for example, Adelino et al. (2010) who used the Loan Processing Services (LPS) database, and Agarwal (2011a, 2011b) who used the OCC-OTS Mortgage Metrics database. The results of our main analysis were, however, similar when we excluded the earlier modifications for loans with multiple modification actions.

⁴The CoreLogic data do not contain information on the servicers or the property address.

⁵See appendix III for a description of the algorithm and results of identifying modified loans.

or in real estate owned (REO) status; liens other than first-liens; loans made for unknown purposes or purposes other than purchase or refinancing; loans with missing or invalid data on the underlying property type; loans for multifamily dwellings with five or more units; loans for mixed-use properties; and loans for commercial units.⁶ For computational tractability, we used a 15-percent random sample of the CoreLogic database. The data comprise loans modified between the first quarter of 2009 and the fourth quarter of 2010. The sample we used for the analysis generally contained more than 90,000 loans that had redefaulted—that is, were 90 days or more delinquent or in foreclosure—within 6 months of the modification after using an algorithm to identify loans that received modifications, using several filters, and excluding missing observations.⁷ Because of limitations in the coverage and completeness of the CoreLogic database, our analysis may not be fully representative of the mortgage market as whole. Nonetheless, we have determined that the data were sufficiently reliable for the purposes of our study.

The second database we used contained information from servicers that participate in HAMP.⁸ These servicers are required to report data at the start of the trial modification period, during the trial period, during conversion to a permanent modification, and monthly after the conversion to a permanent modification. Through the fourth quarter of 2010, 15 large servicers held 85 percent of the loans, and the rest of the loans were serviced by a few hundred small servicers.⁹ Table 19 contains a complete list of variables from the CoreLogic and HAMP databases.

⁶See appendix III for more details on the CoreLogic database and our data exclusions. We also excluded government-guaranteed (non-FHA or non VA) loans.

⁷The minimum and maximum values reported in table 20 reflect the upper and lower bounds that we used to construct the variables, when necessary.

⁸Servicers of nonenterprise loans and loans not insured by FHA, VA, and USDA undertake modifications based on the HAMP guidelines while servicers of Fannie Mae and Freddie Mac loans modify loans using guidelines from the enterprises.

⁹See Treasury, Making Home Affordable Program: Servicer Performance Report Through December 2010.

Table 19: List of Variables from CoreLogic and HAMP Databases

Variable (unit used)	Definition	CoreLogic data	HAMP data
Modification outcome			
Redefault in 6 months (%)	Modified loan becomes 90 or more days past due (dpd) or in foreclosure within 6 months	X	X
Redefault in 12 months (%)	Modified loan becomes 90 or more days past due (dpd) or in foreclosure within 12 months	X	X
Redefault in 18 months (%)	Modified loan becomes 90 or more days past due (dpd) or in foreclosure within 18 months	X	X
Modification actions			
Payment change (%) ^a	Percentage change in monthly payment of principal & interest	X	X
PAYMENT DECREASE: <10%	Payment reduction is less than 10%	X	X
PAYMENT DECREASE: 10% to 19%	Payment reduction is between 10% and 19%	X	X
PAYMENT DECREASE: 20% to 29%	Payment reduction is between 20% and 29%	X	X
PAYMENT DECREASE: 30% to 39%	Payment reduction is between 30% and 39%	X	X
PAYMENT DECREASE: 40% to 49%	Payment reduction is between 40% and 49%	X	X
PAYMENT DECREASE: 50% to 59%	Payment reduction is between 50% and 59%	X	X
PAYMENT DECREASE: 60% or more	Payment reduction is 60% or higher	X	X
RATE CHANGE (bps) ^b	Change in interest rate (bps)	X	X
Balance reduction (%) ^c	Percentage decrease in loan balance through forgiveness and/or forbearance	X	
Principal forgiveness (%) ^d	Percentage decrease in loan balance through forgiveness		X
Principal forbearance (%) ^e	Percentage decrease in loan balance through forbearance		X
Capitalization (%) ^f	Percentage increase in loan balance through capitalization	X	X
TERM CHANGE (months) ^g	Change in loan term	X	X
Borrower and loan characteristics at modification			
CURRENT, AT MOD	Loan is current at modification, less than 30 days past due	X	X
DPD: 30, AT MOD	Loan is 30 to 59 days past due at modification	X	X
DPD: 60, AT MOD	Loan is 60 to 89 days past due at modification	X	X
DPD: 90, AT MOD	Loan is 90 days or more past due at modification	X	X
DPD: FCL, AT MOD	Loan is in foreclosure at modification	X	X
FICO CREDIT SCORE, AT MOD	FICO credit score at modification		X
FICO: 350 to <550, AT MOD	FICO greater than or equal to 350 and less than 550 at modification		X
FICO: 550 to <580, AT MOD	FICO greater than or equal to 550 and less than 580 at modification		X
FICO: 580 to <620, AT MOD	FICO greater than or equal to 580 and less than 620 at modification		X

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Variable (unit used)	Definition	CoreLogic data	HAMP data
FICO: 620 to <660, AT MOD	FICO greater than or equal to 620 and less than 660 at modification		X
FICO: 660 to <680, AT MOD	FICO greater than or equal to 660 and less than 680 at modification		X
FICO: 680 to <700, AT MOD	FICO greater than or equal to 680 and less than 700 at modification		X
FICO: 700 to <750, AT MOD	FICO greater than or equal to 700 and less than 750 at modification		X
FICO: ≥750, AT MOD	FICO greater than or equal to 750 at modification		X
CURRENT LTV (CLTV), AT MOD (%) ^h	Current loan-to-value (CLTV) ratio at modification	X	X
CLTV: 10 to <80 , AT MOD	CLTV is greater than or equal to 10% and less than 80% at modification	X	X
CLTV: 80 to <95, AT MOD	CLTV is greater than or equal to 80% and less than 95% at modification	X	X
CLTV: 95 to <100, AT MOD	CLTV is greater than or equal to 95% and less than 100% at modification	X	X
CLTV: 100 to <115, AT MOD	CLTV is greater than or equal to 100% and less than 115% at modification	X	X
CLTV: 115 to <125, AT MOD	CLTV is greater than or equal to 115% and less than 125% at modification	X	X
CLTV: 125 to <150, AT MOD	CLTV is greater than or equal to 125% and less than 150% at modification	X	X
CLTV: ≥150, AT MOD	CLTV greater than or equal to 150% at modification	X	X
DTIBE, BACKEND, AT MOD (%) ^h	Housing backend debt-to-income ratio (DTIBE), at modification		X
DTIBE: 30 to <35, AT MOD	DTIBE is greater than or equal to 30% and less than 35% at modification		X
DTIBE: 35 to <40, AT MOD	DTIBE is greater than or equal to 35% and less than 40% at modification		X
DTIBE: 40 to <45, AT MOD	DTIBE is greater than or equal to 40% and less than 45% at modification		X
DTIBE: 45 to <50, AT MOD	DTIBE is greater than or equal to 45% and less than 50% at modification		X
DTIBE: 50 to <55, AT MOD	DTIBE is greater than or equal to 50% and less than 55% at modification		X
DTIBE: 55 to <65, AT MOD	DTIBE is greater than or equal to 55% and less than 65% at modification		X
DTIBE: ≥65, AT MOD	DTIBE is greater than or equal to 65% at modification		X
HOUSE PRICES (% CHG) ⁱ	Percentage change in house prices after modification, zip code level	X	X
CHG IN UNEMP RATE (%) ⁱ	Change in unemployment rate after modification, county level	X	X
RATE, AT MOD (bps)	Interest rate at modification (basis points)	X	X
TRIAL LENGTH ≥6 MONTHS	If trial period plan is 6 months or more		X

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Variable (unit used)	Definition	CoreLogic data	HAMP data
MOD REQUIRES PMI	If modification requires private mortgage insurance		X
Loan modification start			
MOD STARTED, 2009Q1	Modification started in 2009 Q1	X	
MOD STARTED, 2009Q2	Modification started in 2009 Q2	X	
MOD STARTED, 2009Q3	Modification started in 2009 Q3	X	
MOD STARTED, 2009Q4	Modification started in 2009 Q4	X	X
MOD STARTED, 2010Q1	Modification started in 2010 Q1	X	X
MOD STARTED, 2010Q2	Modification started in 2010 Q2	X	X
MOD STARTED, 2010Q3	Modification started in 2010 Q3	X	X
MOD STARTED, 2010Q4	Modification started in 2010 Q4	X	X
Borrower and loan characteristics at origination			
FICO CREDIT SCORE, AT ORIGN	Fair Isaac Corporation (FICO) credit score at loan origination	X	
FICO: 350 to <550, AT ORIGN	FICO greater than or equal to 350 and less than 550 at loan origination	X	
FICO: 550 to <580, AT ORIGN	FICO greater than or equal to 550 and less than 580 at loan origination	X	
FICO: 580 to <620, AT ORIGN	FICO greater than or equal to 580 and less than 620 at loan origination	X	
FICO: 620 to <660, AT ORIGN	FICO greater than or equal to 620 and less than 660 at loan origination	X	
FICO: 660 to <680, AT ORIGN	FICO greater than or equal to 660 and less than 680 at loan origination	X	
FICO: 680 to <700, AT ORIGN	FICO greater than or equal to 680 and less than 700 at loan origination	X	
FICO: 700 to <750, AT ORIGN	FICO greater than or equal to 700 and less than 750 at loan origination	X	
FICO: ≥750, AT ORIGN	FICO greater than or equal to 750 at loan origination	X	
LTV, AT ORIGN (%) ^h	Loan-to-value (LTV) ratio at origination	X	X
LTV: 10 to <70, AT ORIGN	LTV greater than or equal to 10% and less than 70% at origination	X	X
LTV: 70 to <80, AT ORIGN	LTV greater than or equal to 70% and less than 80% at origination	X	X
LTV: 80, AT ORIGN	LTV equal to 80% at origination	X	X
LTV: 81 to <90, AT ORIGN	LTV greater than 80% and less than 90% at origination	X	X
LTV: 90 to <100, AT ORIGN	LTV greater than or equal to 90% and less than 100% at origination	X	X
LTV: ≥100, AT ORIGN	LTV greater than or equal to 100% at origination	X	X
RATE, AT ORIGN (bps)	Interest rate at origination (basis points)	X	X
LOAN BALANCE, AT ORIGN (\$)	Loan balance at origination, in current dollars	X	X

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Variable (unit used)	Definition	CoreLogic data	HAMP data
Other: product characteristics			
INVESTOR: ENTERPRISES	If loan is owned by government-sponsored enterprises (Fannie Mae or Freddie Mac)	X	X
INVESTOR: PRIV-LABEL SEC (PLS)	If loan is owned by non-agency private investors	X	X
INVESTOR: PORTFOLIO	If loan is owned by lender	X	X
PRIME (vs. SUBPRIME)	Prime loan = 1, subprime loan = 0	X	
ARM (vs. FIXED RATE)	Adjustable rate (ARM) = 1, Fixed rate (FRM) = 0	X	
SINGLE FAMILY	Single family housing units	X	X
CONDO	Condominiums, including PUDs (planned unit developments)	X	X
OTHER HOUSING	Other housing units, including cooperatives	X	X
CONVENTIONAL	Conventional loans (nongovernment owned or guaranteed loans)	X	
FHA	Federal Housing Administration (FHA) loans	X	
VA	Veterans Affairs (VA)	X	
OWNER-OCCUPIED	If owner-occupied housing versus a nonowner occupied	X	X ^k
PURCHASE	Loans for home purchase	X	
REFI: CASH-OUT	Loans for refinance, with cash-out	X	
REFI: NO CASH-OUT	Loans for refinance, without cash-out	X	
REFI: UNKNOWN	Loans for refinance, reason unknown	X	
Loan origination year			
ORIGINATION YEAR, ≤2003	Loan originated in 2003 or before	X	X
ORIGINATION YEAR, 2004	Loan originated in 2004	X	X
ORIGINATION YEAR, 2005	Loan originated in 2005	X	X
ORIGINATION YEAR, 2006	Loan originated in 2006	X	X
ORIGINATION YEAR, 2007	Loan originated in 2007	X	X
ORIGINATION YEAR, 2008	Loan originated in 2008	X	X ^l

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Treasury.

^aThe payment change is the result of modification actions, including, rate reduction, balance reduction (from principal forgiveness or principal forbearance), capitalization, and term extension.

^bThis modification action includes a rate reduction.

^cThis modification action includes a balance reduction.

^dThis modification action includes principal forgiveness.

^eThis modification action includes principal forbearance.

^fThis modification action includes capitalization.

^gThis modification action includes a term extension.

^hThe data do not include second liens.

ⁱHousing price data are from CoreLogic.

^jUnemployment data are from the Bureau of Labor Statistics.

^kAll HAMP loans are for owner-occupied housing.

^lIncludes loans originated on January 1, 2009.

We discuss selected key characteristics of the universe of loans in the CoreLogic database using the average values of the variables (see table 20). Data for all loans are in column A, and prime and subprime loans are in columns B and C, respectively. The overall redefault rate 6 months after modification is 18 percent for all loans: 17 percent for prime loans, and 19 percent for subprime loans. Prime loans make up 85 percent of the universe of loans in the data set and subprime loans 15 percent. Eighty-eight percent of the loans have fixed rates (FRM) at origination, and the rest have adjustable rates (ARM).

The modification actions we identified were generally used in combination with other actions, much like the modification actions in the OCC Mortgage Metrics database. For loan modifications that include interest rate changes, the average change in interest rate is 299 basis points (bps), or 2.99 percentage points, and 289 bps and 361 bps for prime and subprime loans, respectively. In loan modifications, the balances decrease with principal forgiveness or principal forbearance but increase with capitalization.¹⁰ For modifications that include balance reductions, the average reduction is 20 percent (20 percent and 16 percent for prime and subprime loans, respectively). The capitalized amounts averaged 6 percent of the balances (6 percent and 8 percent for prime and subprime loans, respectively). The average increase in loan term used in combination with other modification actions is 96 months (95 months for prime loans and 101 months for subprime loans). The average reduction in monthly principal and interest payments as a result of changes in interest rates, loan balances, and loan term from the modifications is 24 percent of the payments at modification and amounts over \$250. The payment reductions are 24 percent and 25 percent for prime and subprime loans, respectively. Thus the changes in the modification actions were generally larger for subprime loans than for prime loans, implying that the modifications helped subprime borrowers the most.

¹⁰We could not distinguish between principal forgiveness and principal forbearance in the CoreLogic data set.

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Table 20: Summary Statistics of Variables Used in Regressions Related to Redefault within 6 Months of Modification, Using CoreLogic Data

Variable	A. All loans					B. Prime loans			C. Subprime loans		
	N	Mean	Med	Min	Max	N	Mean	Med	N	Mean	Med
Modification outcome											
REDEFAULT IN 6 MONTHS (%) ^a	91614	18	0	0	100	78300	17	0	13314	19	0
Modification actions											
PAYMENT CHANGE (%)	89814	-24	-22	-76	21	76871	-24	-22	12943	-25	-21
RATE CHANGE (bps)	80460	-299	-288	-1500	-8	68902	-289	-275	11558	-361	-313
BALANCE REDUCTION (%)	4598	-20	-16	-93	-2	4524	-20	-16	74	-16	-8
CAPITALIZATION (%)	76883	6	5	0	50	65931	6	5	10952	8	6
TERM CHANGE (months)	32414	96	102	5	200	28111	95	96	4303	101	114
Borrower and loan characteristics at modification											
CURRENT, AT MOD	91614	0.07	0	0	1	78300	0.07	0	13314	0.12	0
DPD: 30, AT MOD	91614	0.04	0	0	1	78300	0.03	0	13314	0.07	0
DPD: 60, AT MOD	91614	0.05	0	0	1	78300	0.05	0	13314	0.07	0
DPD: 90, AT MOD	91614	0.72	1	0	1	78300	0.75	1	13314	0.54	1
DPD: FCL, AT MOD	91614	0.11	0	0	1	78300	0.10	0	13314	0.20	0
CURRENT LTV (CLTV), AT MOD (%) ^b	91136	108	105	10	347	77838	107	105	13298	112	107
CLTV: 10 to <80, AT MOD	91136	0.17	0	0	1	77838	0.18	0	13298	0.15	0
CLTV: 80 to <95, AT MOD	91136	0.18	0	0	1	77838	0.18	0	13298	0.19	0
CLTV: 95 to <100, AT MOD	91136	0.07	0	0	1	77838	0.07	0	13298	0.07	0
CLTV: 100 to <115, AT MOD	91136	0.21	0	0	1	77838	0.21	0	13298	0.20	0
CLTV: 115 to <125, AT MOD	91136	0.11	0	0	1	77838	0.11	0	13298	0.09	0
CLTV: 125 to <150, AT MOD	91136	0.15	0	0	1	77838	0.15	0	13298	0.16	0
CLTV: ≥150, AT MOD	91136	0.11	0	0	1	77838	0.10	0	13298	0.14	0
HOUSE PRICES (% CHG) ^c	91614	-2.32	-2.20	-28.92	26.48	78300	-2.43	-2.30	13314	-1.7	-1.6
CHG IN UNEMP RATE (%) ^d	91614	-0.04	-0.07	-11.13	12.67	78300	-0.08	-0.08	13314	0.2	0.1
RATE, AT MOD (bps)	91614	408.32	412.5	0.1	1725	78300	391	400	13314	508	504
Loan modification start											
MOD STARTED, 2009Q1	91614	0.09	0	0	1	78300	0.06	0	13314	0.24	0
MOD STARTED, 2009Q2	91614	0.09	0	0	1	78300	0.08	0	13314	0.11	0
MOD STARTED, 2009Q3	91614	0.07	0	0	1	78300	0.08	0	13314	0.07	0
MOD STARTED, 2009Q4	91614	0.08	0	0	1	78300	0.08	0	13314	0.06	0
MOD STARTED, 2010Q1	91614	0.17	0	0	1	78300	0.17	0	13314	0.15	0
MOD STARTED, 2010Q2	91614	0.19	0	0	1	78300	0.19	0	13314	0.19	0
MOD STARTED, 2010Q3	91614	0.15	0	0	1	78300	0.16	0	13314	0.12	0

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Variable	A. All loans					B. Prime loans			C. Subprime loans		
	N	Mean	Med	Min	Max	N	Mean	Med	N	Mean	Med
MOD STARTED, 2010Q4	91614	0.16	0	0	1	78300	0.17	0	13314	0.07	0
Borrower and loan characteristics at origination											
FICO CREDIT SCORE, AT ORIGN	84669	657	658	351	888	71470	666	668	13199	609	609
FICO: 350 to <550, AT ORIGN	84669	0.07	0	0	1	71470	0.05	0	13199	0.17	0
FICO: 550 to <580, AT ORIGN	84669	0.06	0	0	1	71470	0.05	0	13199	0.14	0
FICO: 580 to <620, AT ORIGN	84669	0.15	0	0	1	71470	0.12	0	13199	0.26	0
FICO: 620 to <660, AT ORIGN	84669	0.23	0	0	1	71470	0.23	0	13199	0.25	0
FICO: 660 to <680, AT ORIGN	84669	0.11	0	0	1	71470	0.12	0	13199	0.07	0
FICO: 680 to <700, AT ORIGN	84669	0.11	0	0	1	71470	0.12	0	13199	0.05	0
FICO: 700 to <750, AT ORIGN	84669	0.19	0	0	1	71470	0.21	0	13199	0.05	0
FICO: ≥750, AT ORIGN	84669	0.09	0	0	1	71470	0.11	0	13199	0.01	0
LTV, AT ORIGN (%) ^b	91571	83	80	10	200	78267	83	80	13304	82	80
LTV: 10 to <70, AT ORIGN	91566	0.14	0	0	1	78262	0.15	0	13304	0.11	0
LTV: 70 to <80, AT ORIGN	91566	0.21	0	0	1	78262	0.21	0	13304	0.20	0
LTV: 80, AT ORIGN	91566	0.21	0	0	1	78262	0.21	0	13304	0.22	0
LTV: 81, to <90, AT ORIGN	91566	0.10	0	0	1	78262	0.08	0	13304	0.19	0
LTV: 90 to <100, AT ORIGN	91566	0.25	0	0	1	78262	0.26	0	13304	0.22	0
LTV: ≥100, AT ORIGN	91566	0.09	0	0	1	78262	0.10	0	13304	0.06	0
RATE, AT ORIGN (bps)	91610	638	650	1	1755	78299	616	638	13311	771	765
LOAN BALANCE, AT ORIGN (\$)	90507	218878	189000	25000	729750	77256	222617	193500	13251	197079	166214
Other: product characteristics											
INVESTOR: ENTERPRISES ^e	91614	0.48	0	0	1	78300	0.55	1	13314	0.04	0
INVESTOR: PRIV-LABEL SEC (PLS) ^e	91614	0.18	0	0	1	78300	0.15	0	13314	0.35	0
INVESTOR: PORTFOLIO ^e	91614	0.22	0	0	1	78300	0.23	0	13314	0.20	0
PRIME (vs. SUBPRIME)	91614	0.85	1	0	1	78300	1.00	1	13314	0.00	0
ARM (vs. FIXED RATE)	91614	0.12	0	0	1	78300	0.12	0	13314	0.11	0
SINGLE FAMILY	91614	0.80	1	0	1	78300	0.78	1	13314	0.87	1
CONDO	91614	0.16	0	0	1	78300	0.17	0	13314	0.07	0
OTHER HOUSING	91614	0.04	0	0	1	78300	0.04	0	13314	0.06	0
CONVENTIONAL	91614	0.84	1	0	1	78300	0.81	1	13314	1.00	1
FHA	91614	0.15	0	0	1	78300	0.18	0	13314	0.00	0
VA	91614	0.01	0	0	1	78300	0.02	0	13314	0.00	0
OWNER-OCCUPIED	91614	0.96	1	0	1	78300	0.96	1	13314	0.96	1
PURCHASE	91614	0.44	0	0	1	78300	0.47	0	13314	0.28	0
REFI: CASH-OUT	91614	0.26	0	0	1	78300	0.26	0	13314	0.24	0
REFI: NO CASH-OUT	91614	0.15	0	0	1	78300	0.17	0	13314	0.05	0

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Variable	A. All loans					B. Prime loans			C. Subprime loans		
	N	Mean	Med	Min	Max	N	Mean	Med	N	Mean	Med
REFI: UNKNOWN	91614	0.14	0	0	1	78300	0.09	0	13314	0.43	0
Loan origination year											
ORIGINATION YEAR, ≤2003	91614	0.14	0	0	1	78300	0.15	0	13314	0.10	0
ORIGINATION YEAR, 2004	91614	0.08	0	0	1	78300	0.07	0	13314	0.16	0
ORIGINATION YEAR, 2005	91614	0.15	0	0	1	78300	0.13	0	13314	0.30	0
ORIGINATION YEAR, 2006	91614	0.23	0	0	1	78300	0.22	0	13314	0.26	0
ORIGINATION YEAR, 2007	91614	0.30	0	0	1	78300	0.32	0	13314	0.17	0
ORIGINATION YEAR, 2008	91614	0.10	0	0	1	78300	0.11	0	13314	0.01	0

Source: GAO analysis of data from CoreLogic and its Home Price Index, and the Bureau of Labor Statistics.

^aRedefault occurs when modified loans become 90 days or more delinquent or in foreclosure within 6 months after modification.

^bThe data do not include second liens.

^cHousing price data are from CoreLogic.

^dUnemployment data are from the Bureau of Labor Statistics.

^eThe data have many missing observations, especially for subprime loans, so the percentages do not add up to 1.

About 83 percent of the modified loans identified in the CoreLogic data set were seriously delinquent (at least 90 days past due or in foreclosure), including 85 percent for prime and 74 percent of subprime loans. Ten percent of prime loans were in foreclosure, compared with 20 percent of subprime loans. The CLTV ratios at the time of modification were 108 percent overall (107 percent for prime loans and 112 percent for subprime loans). These ratios had increased since origination—24 percent for prime loans and 30 percent for subprime loans.¹¹ House prices continued to decline for the 6 months after modifications, falling by about 2 percent, on average. The overall FICO credit score at the time of origination is 657, but scores for prime and subprime loans differed widely (666 and 609, respectively). The CLTV ratios and FICO scores are consistent with the relatively low quality of subprime loans.¹² Overall, unemployment rates declined by less than 1 percent (among prime loans rates

¹¹The estimates do not include second liens.

¹²In general, loans carried by borrowers with FICO scores below 620 are regarded to be subprime.

decreased by 0.08 percent compared to an increase of 0.2 percent for subprime loans).

Many observations are missing data on the loan investor or ownership, especially for subprime loans. The majority of the prime loans identified are owned or guaranteed by the enterprises, while the majority of the subprime loans are private-label securitized (PLS) loans. Overall, portfolio loans slightly outnumber PLS loans. About 84 percent of the prime loans are conventional, with FHA accounting for 15 percent and VA and other government-guaranteed loans for the remaining 1 percent. All subprime loans are conventional. Almost all the loans (96 percent) are for owner-occupied housing, and a slight majority (55 percent) were for refinancings. The average unpaid principal balance for prime loans at the time of origination was \$222,617, compared with \$197,079 for subprime loans. About 67 percent and 73 percent of prime loans and subprime loans, respectively, were originated between 2005 and 2007. Modifications increased in 2010 compared to 2009, partly because of HAMP and included a larger share of prime loans as the available pool of subprime loans dwindled.

Comparison of CoreLogic and HAMP Data Sets

We compare certain borrower and loan characteristics using comparable data from the universe of loans as represented by the CoreLogic data and HAMP loans found in the Treasury data. We restricted the CoreLogic data to first-lien loans for owner-occupied housing that received modifications between the fourth quarter of 2009 and the second quarter of 2010, and that received payment reductions.¹³

The HAMP database has certain limitations. The data were sometimes missing or questionable, as indicated by the Department of the Treasury.¹⁴ Also, we constructed the performance history of HAMP loans using several monthly databases. Since we did not have data for February 2010 and April 2010, we assumed that the performances was the same as in the following months, March 2010 and May 2010, respectively. We do not expect this assumption to affect our results, since

¹³A complete list of the variables we used from the HAMP database is in table 19. Although the CoreLogic database includes HAMP loans, we could not directly identify them in the CoreLogic database.

¹⁴[GAO-11-288](#)

redefault is defined as 3 or more consecutive months of delinquency.¹⁵ We excluded observations if loan performance data were missing for any of the months. Generally, we believe that the constructed loan performance data become more reliable as the number of months since modification increases, as the quality of HAMP data has been improving over time. As a result, we compare CoreLogic and HAMP loans that are at least 12 months postmodification or that have redefaulted within 12 months. We believe that the HAMP data we use are sufficiently reliable for our purposes.

In table 21, the data indicate that the redefault rate is much higher for CoreLogic than for HAMP loans (26 percent and 16 percent, respectively, 12 months after modification). The HAMP data we use are for participants with permanent modifications—those who have successfully completed the trial modification. Most of the CoreLogic loans were far advanced in their delinquency prior to the modification, with about 89 percent 90 days or more delinquent or in foreclosure, compared to 61 percent of HAMP loans. The overall changes resulting from modification actions were generally largest for HAMP loans, which had an average payment reduction of 37 percent, compared to 30 percent among CoreLogic loans. The current LTVs were 109 percent and 140 percent, respectively, in the CoreLogic and HAMP databases, but there was not much difference between the loans at the time of origination, when the LTVs were 83 percent and 82 percent, respectively. Thus the decline in equity was 26 percent for the CoreLogic loans and 58 percent for HAMP loans. The majority of the modified loans were originated between 2005 and 2007.

Table 21: Selected Borrower and Loan Characteristics Related to Redefault within 12 Months of Modification, using of CoreLogic and HAMP Data

Variable	CoreLogic data					HAMP data				
	N	Mean	Med	Min	Max	N	Mean	Med	Min	Max
REDEFAULT IN 12 MONTHS (%) ^a	34801	26	0	0	100	341111	16	0	0	100
PAYMENT CHANGE (%)	33950	-30	-27	-76	0	341111	-37	-38	-80	0
RATE CHANGE (bps)	33736	-322	-338	-1113	-8	336312	-399	-413	-1279	0
BALANCE REDUCTION (%)	2183	-23	-18	-93	-2	NA	NA	NA	NA	NA
PRINCIPAL FORGIVENESS (%)	NA	NA	NA	NA	NA	1954	-17	-18	-76	-1

¹⁵Our reconstructed loan history was very close to Treasury's; see Treasury, Making Home Affordable Program: Servicer Performance Report Through June 2011.

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Variable	CoreLogic data					HAMP data				
	N	Mean	Med	Min	Max	N	Mean	Med	Min	Max
PRINCIPAL FORBEARANCE (%)	NA	NA	NA	NA	NA	89318	-23	-20	-90	-1
CAPITALIZATION (%)	30580	6	5	0	50	336844	5	4	0	30
TERM CHANGE (months)	12521	91	86	5	200	308608	37	1	-120	240
CURRENT, AT MOD	34801	0.03	0	0	1	277332	0.20	0	0	1
DPD: 30, AT MOD	34801	0.02	0	0	1	277332	0.11	0	0	1
DPD: 60, AT MOD	34801	0.05	0	0	1	277332	0.09	0	0	1
DPD: 90, AT MOD (%)	34801	0.78	1	0	1	277332	0.56	1	0	1
DPD: FCL, AT MOD (%)	34801	0.11	0	0	1	277332	0.05	0	0	1
CLTV, AT MOD (%)	34663	109	106	10	347	276658	140	132	7	250
CLTV: 10 to <80, AT MOD	34663	0.16	0	0	1	276656	0.03	0	0	1
CLTV: 80 to <95, AT MOD	34663	0.18	0	0	1	276656	0.04	0	0	1
CLTV: 95 to <100, AT MOD	34663	0.07	0	0	1	276656	0.03	0	0	1
CLTV: 100 to <115, AT MOD	34663	0.22	0	0	1	276656	0.18	0	0	1
CLTV: 115 to <125, AT MOD	34663	0.11	0	0	1	276656	0.14	0	0	1
CLTV: 125 to <150, AT MOD	34663	0.16	0	0	1	276656	0.22	0	0	1
CLTV: ≥150, AT MOD	34663	0.11	0	0	1	276656	0.36	0	0	1
LTV (LTV), AT ORIGN (%)	34799	83	80	0	200	264092	82	80	30	200
INTEREST RATE, AT MOD (bps)	34801	353	313	29	1590	341110	297	200	200	1249
INTEREST RATE, AT ORIGN (bps)	34801	639	650	1	1590	269859	666	663	200	1500
UPB, AT ORIGN (\$)	34489	227487	201000	25000	728000	278184	241031	220000	25900	729750
ORIGINATION YEAR, ≤2003	34801	0.13	0	0	1	341111	0.07	0	0	1
ORIGINATION YEAR, 2004	34801	0.07	0	0	1	341111	0.06	0	0	1
ORIGINATION YEAR, 2005	34801	0.14	0	0	1	341111	0.17	0	0	1
ORIGINATION YEAR, 2006	34801	0.23	0	0	1	341111	0.32	0	0	1
ORIGINATION YEAR, 2007	34801	0.32	0	0	1	341111	0.32	0	0	1
ORIGINATION YEAR, 2008 ^b	34801	0.11	0	0	1	341111	0.07	0	0	1

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Treasury.

Notes: NA = not available. The sample size varies for some variables.

^aRedefault occurs when modified loans become 90 days or more delinquent or in foreclosure within 12 months after modification.

^bThe data for HAMP include loans originated on January 1, 2009.

Econometric Analysis

We discuss below the models we developed and used to estimate the likelihood of redefault after modifying the typical loan (using the CoreLogic and HAMP databases), and the estimated results and robustness checks of the estimates. Unlike the descriptive statistics, this

approach allows us to determine the relationship between the redefault rate and modification actions, holding other factors constant (including borrower and loan characteristics). Similarly, this approach also allows us to determine the relationship between the redefault rate and certain borrower or loan characteristics holding all the other borrower and loan characteristic in the model constant.

Model

Following the literature, we grouped into four categories the factors that generally affect whether a loan modified permanently through government and proprietary modification programs would redefault: borrower and loan characteristics at origination, borrower and loan characteristics at modification, geographic market and time effects, and investor/lender and servicer effects.¹⁶ We also note that, the redefault rate can be affected by the type of loan modification action. Typically, the modification lowers the monthly principal and interest payments by changing the interest rate, term, or loan balance. We use reduced-form multivariate probabilistic regression models,¹⁷ an approach used to examine choices and evaluate various events or outcomes, to help determine these effects.¹⁸

Accordingly, based on economic reasoning, data availability, and previous studies on loan performance, we use a relatively flexible specification to estimate the likelihood that a loan that has been modified

¹⁶See, for example, Adelino and others (2010), Agarwal and others (2011b), and Karikari (2011). The geographic area fixed-effects control for factors that vary across geographic areas but are the same within them, such as the type of foreclosure laws and local efforts at mitigating foreclosures or their indirect effects, whether these characteristics are observed or unobserved. Time fixed effects are also included to account for changes in macroeconomic factors over time. Also, fixed effects for the investors control for all stable characteristics of the investors (such as policies on loan modifications). Servicer fixed effects control for factors such as the servicers' capacity to modify loans.

¹⁷Loan modification could be modeled as a two-stage process—first, the at-risk borrower's decision to accept an offer of assistance, and second, the performance of the loan after modification. See, for example, Capone and Metz (2004). However, we do not have the information to model the first stage.

¹⁸This approach is appropriate, since we are primarily interested in the probability that a modified loan redefaults within a certain time period and not the hazard rate of the redefault (i.e., the probability that a loan redefaults at a certain time if it has not already redefaulted up to that time).

Econometric estimates

redefaults.¹⁹ The dependent variable for the redefaults is binary and equals 100 if a loan that has been permanently modified redefaults within 6 months and 0 if the loan is still active and current. The explanatory variables that we include in the model to explain loan redefaults are borrower and loan characteristics and modification actions, conditioned by the available data. The complete list of variables available for the analysis is in table 19.

We discuss results for redefault in the universe of loans using the CoreLogic database. The regression estimates are in table 22. We estimated the models using the ordinary least squares (OLS) regression technique.²⁰ Overall, the models are significant, and most of the variables are statistically significant at the 5-percent level or better. The effects (the direction of their impacts) are generally consistent with our expectations. We discuss below the key findings, based on statistically significant changes in the likelihood of redefaults, using the estimated marginal effects of the explanatory variables.²¹

The regression results from estimating redefault in the universe of loans using the data in table 20 are presented in table 22 (based on the CoreLogic database) for the combined prime and subprime loans.²² The table presents regressions of redefault indicators (a modified loan becoming 90 days or more delinquent within 6 months of the modification) on modification actions—monthly payment changes, interest rate changes, balance reduction, capitalization, and term changes. In addition

¹⁹This study contributes to the research on the performance of loans that have received modifications by extending our knowledge of the performance of modified loans to a more recent time period, using loans that were modified between the first quarter of 2009 and the fourth quarter of 2010. Previous studies used different databases or analyzed the period before 2009. We also investigate the effectiveness of HAMP modifications relative to other modification programs.

²⁰The OLS estimates are arguably more consistent in specifications given the large number of fixed effects in our model. The estimated coefficients are qualitatively similar to using the logistic regression estimation (for example, for the model with the payment reduction as regressor in column 1 of table 24). Agarwal and others (2011a, 2011b) also used a linear regression to estimate their probability models of redefaults

²¹We use a threshold of 5-percent significance level for statistical significance.

²²We also estimated separate results for prime and subprime loans. The results for the prime loans are generally similar to what is presented in table 22. Results for subprime loans were similar but generally not as statistically significant, partly due to a limited sample.

we include information on the borrower and the loan. The estimates were generated using the OLS technique. Fixed-effects estimates for loan origination year and zip codes are not reported, for brevity. The reported estimates are marginal effects (percentage point differences). The standard errors are presented in parentheses, and *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively.

Table 22: Probability Regression Estimates of Redefaults of Modified Loans within 6 Months, Using CoreLogic Data

Dependent variable: Redefault (90 DPD or more) within 6 months of loan modification, 0/1 x 100					
Variables	Modification actions				
	PMT ^a	RATE ^b	BAL ^c	CAP ^d	TERM ^e
	(1)	(2)	(3)	(4)	(5)
PAYMENT CHANGE	-0.174*** (0.011)				
RATE CHANGE		-0.008*** (0.002)			
BALANCE REDUCTION			0.156** (0.066)		
CAPITALIZATION				0.947*** (0.038)	
TERM EXTENSION					-0.012** (0.005)
DPD: 30, AT MOD	8.590*** (0.881)	7.379*** (0.873)	-22.619*** (6.345)	5.447*** (1.602)	4.661** (2.018)
DPD: 60, AT MOD	8.901*** (0.787)	7.917*** (0.774)		9.053*** (1.451)	2.660 (1.780)
DPD: 90, AT MOD	18.191*** (0.577)	16.892*** (0.568)	3.916 (3.808)	17.116*** (1.329)	14.885*** (1.379)
DPD: FCL, AT MOD	20.126*** (0.715)	18.930*** (0.728)	9.640** (4.806)	15.471*** (1.426)	17.463*** (1.564)
CLTV: 80 to <95, AT MOD	1.057* (0.545)	1.527*** (0.559)	1.529 (2.402)	1.757*** (0.634)	-0.017 (1.011)
CLTV: 95 to <100, AT MOD	1.942*** (0.721)	3.022*** (0.732)	5.724 (3.573)	3.231*** (0.833)	1.905 (1.321)
CLTV: 100 to <115, AT MOD	2.349*** (0.621)	3.278*** (0.623)	2.694 (3.025)	3.076*** (0.738)	2.771** (1.088)

**Appendix V: Description of GAO's
Econometric Analysis of Redefault of Modified
Loans**

Dependent variable: Redefault (90 DPD or more) within 6 months of loan modification, 0/1 x 100

Variables	Modification actions				
	PMT ^a	RATE ^b	BAL ^c	CAP ^d	TERM ^e
	(1)	(2)	(3)	(4)	(5)
CLTV: 115 to <125, AT MOD	4.429*** (0.741)	5.439*** (0.737)	3.592 (3.736)	5.123*** (0.877)	4.548*** (1.290)
CLTV: 125 to <150, AT MOD	5.579*** (0.776)	6.954*** (0.767)	7.228* (3.989)	5.788*** (0.942)	6.130*** (1.324)
CLTV: ≥150, AT MOD	9.519*** (0.957)	11.200*** (0.943)	5.167 (5.126)	9.758*** (1.170)	9.563*** (1.624)
HOUSE PRICES (% CHG)	-0.096** (0.047)	-0.057 (0.048)	-0.533* (0.281)	-0.094* (0.052)	-0.237*** (0.087)
CHG IN UNEMP RATE (%)	0.371** (0.166)	0.285* (0.170)	0.728 (0.778)	0.479** (0.189)	0.345 (0.327)
RATE, AT MOD (bps)	0.021*** (0.001)	0.027*** (0.002)	0.069*** (0.010)	0.036*** (0.001)	0.044*** (0.002)
MOD STARTED, 2009Q2	1.298* (0.676)	1.729** (0.729)	22.259*** (8.283)	0.623 (0.791)	3.176** (1.303)
MOD STARTED, 2009Q3	0.809 (0.707)	1.760** (0.757)	51.752*** (9.406)	-2.363*** (0.818)	-3.145** (1.351)
MOD STARTED, 2009Q4	-11.960*** (0.721)	-10.345*** (0.769)	21.620** (10.569)	-14.538*** (0.802)	-13.764*** (1.460)
MOD STARTED, 2010Q1	-10.207*** (0.675)	-8.408*** (0.717)	26.205*** (7.209)	-12.552*** (0.760)	-11.443*** (1.339)
MOD STARTED, 2010Q2	-13.085*** (0.665)	-11.469*** (0.705)	12.848* (7.111)	-15.056*** (0.753)	-14.907*** (1.294)
MOD STARTED, 2010Q3	-12.232*** (0.743)	-10.394*** (0.780)	14.253* (7.362)	-14.860*** (0.839)	-13.966*** (1.421)
MOD STARTED, 2010Q4	-15.263*** (0.708)	-13.196*** (0.745)	13.166* (7.338)	-18.066*** (0.805)	-17.463*** (1.351)
FICO: 550 to <580, AT ORIGN	-3.616*** (0.786)	-3.684*** (0.809)	5.726 (11.724)	-2.930*** (0.844)	-5.775*** (1.412)
FICO: 580 to <620, AT ORIGN	-3.689*** (0.664)	-3.407*** (0.688)	-1.876 (9.894)	-2.767*** (0.710)	-4.802*** (1.194)
FICO: 620 to <660, AT ORIGN	-4.935*** (0.650)	-4.770*** (0.676)	-1.375 (9.599)	-3.800*** (0.697)	-6.503*** (1.178)
FICO: 660 to <680, AT ORIGN	-5.883*** (0.738)	-5.984*** (0.764)	-3.588 (9.667)	-4.426*** (0.799)	-7.171*** (1.356)

**Appendix V: Description of GAO's
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Loans**

Dependent variable: Redefault (90 DPD or more) within 6 months of loan modification, 0/1 x 100

Variables	Modification actions				
	PMT ^a	RATE ^b	BAL ^c	CAP ^d	TERM ^e
	(1)	(2)	(3)	(4)	(5)
FICO: 680 to <700, AT ORIGN	-5.953*** (0.757)	-6.122*** (0.781)	-1.812 (9.691)	-4.260*** (0.825)	-6.256*** (1.406)
FICO: 700 to <750, AT ORIGN	-6.394*** (0.715)	-6.698*** (0.740)	-4.732 (9.590)	-4.527*** (0.780)	-8.550*** (1.323)
FICO: ≥750, AT ORIGN	-7.322*** (0.807)	-7.692*** (0.826)	-5.822 (9.653)	-4.993*** (0.906)	-9.647*** (1.502)
LTV: 70 to <80, AT ORIGN	-1.135** (0.525)	-1.165** (0.533)	1.698 (2.268)	-1.182** (0.598)	-0.483 (1.013)
LTV: 80, AT ORIGN	-0.841 (0.566)	-0.730 (0.573)	0.602 (2.534)	-0.526 (0.649)	-0.394 (1.091)
LTV: 81 to <90, AT ORIGN	-1.386** (0.682)	-1.900*** (0.690)	1.607 (3.358)	-1.116 (0.778)	0.683 (1.289)
LTV: 90 to <100, AT ORIGN	-1.273* (0.673)	-1.662** (0.681)	1.252 (3.369)	-0.978 (0.776)	-0.689 (1.263)
LTV: ≥100, AT ORIGN	-0.837 (0.819)	-1.250 (0.827)	2.057 (4.224)	-0.376 (0.942)	-2.398 (1.489)
RATE, AT ORIGN (bps)	-0.006*** (0.001)	-0.006*** (0.001)	-0.021*** (0.006)	-0.010*** (0.001)	-0.006*** (0.002)
UPB, AT ORIGN (LOG)	0.115 (0.444)	-0.387 (0.458)	-2.941 (2.674)	0.763 (0.506)	0.246 (0.883)
PRIME (vs. SUBPRIME)	1.958*** (0.531)	1.954*** (0.561)	5.384 (7.333)	5.103*** (0.589)	5.618*** (1.049)
ARM (vs. FIXED RATE)	2.499*** (0.455)	2.357*** (0.462)	2.277 (1.632)	2.213*** (0.529)	2.475*** (0.897)
CONDO	1.060** (0.427)	0.786* (0.432)	2.062 (1.968)	1.682*** (0.477)	2.669*** (0.800)
OTHER HOUSING	-0.804 (0.824)	-0.581 (0.824)	-2.911 (4.164)	-1.714* (0.910)	-1.779785 (1.497)
FHA	-3.388*** (0.565)	-3.174*** (0.606)	-5.546 (8.440)	-3.110*** (0.602)	-7.529*** (1.073)
VA	-11.630*** (1.379)	-11.198*** (1.384)	-3.606 (24.417)	-10.569*** (1.451)	-13.001*** (2.752)
OWNER-OCCUPIED	-0.147 (0.740)	-0.051 (0.785)	-16.703*** (5.675)	1.603* (0.840)	1.105 (1.646)

**Appendix V: Description of GAO's
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Dependent variable: Redefault (90 DPD or more) within 6 months of loan modification, 0/1 x 100

Variables	Modification actions				
	PMT ^a	RATE ^b	BAL ^c	CAP ^d	TERM ^e
	(1)	(2)	(3)	(4)	(5)
REFI: CASH OUT	-2.316*** (0.398)	-2.411*** (0.403)	-1.160 (1.967)	-1.557*** (0.449)	-2.130*** (0.787)
REFI: NO CASH OUT	-1.912*** (0.444)	-1.855*** (0.450)	-3.411* (2.026)	-1.240** (0.496)	-1.601* (0.853)
REFI: OTHER	-4.454*** (0.509)	-4.277*** (0.520)	5.485 (5.199)	-4.186*** (0.560)	-3.720*** (0.893)
Constant	11.087** (5.446)	12.155** (5.728)	24.530 (35.400)	-14.889** (6.315)	0.607 (10.913)
Origination year fixed-effects	Yes	Yes	Yes	Yes	Yes
Zip code fixed-effects	Yes	Yes	Yes	Yes	Yes
Baseline redefault rate	18%	16%	11%	19%	19%
Mean value of mod action	24%	302 (bps)	20%	6%	99 months
Prob>F	0.000	0.000	0.000	0.000	0.000
Observations	81,556	73,215	4,262	69,847	28,656
R-squared	0.253	0.249	0.662	0.272	0.406
Adj. R-squared	0.105	0.0872	0.187	0.106	0.136

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Note: *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively.

^aPMT=Payment change (%)

^bRATE=Rate change (bps)

^cBAL=Balance reduction (%)

^dCAP=Capitalization (%)

^eTERM=Term change (months)

We discuss the results from the redefault model using the CoreLogic data set, which represents the universe of loans, using the estimates in table

22.²³ We start with the effects of modification actions on the redefault rate.²⁴

We first discuss the payment change, which is an outcome of the modification actions (rate change, balance reduction, capitalization, and term extension). For policy purposes, the payment change is important for loan modifications because it indicates whether the modification is affordable to the consumer. But while the payment change is important to the consumer, the type of modification action is also important to the lender/investor, because certain actions may not be feasible given the terms of the mortgage or could result in lower returns. For this reason, we also discuss the effects of the modification actions, independent of the resulting payment change. In general, modification actions that make the loan affordable are expected to lower the redefault rate.

Payment change: Using the coefficient estimate of -0.174 for the impact of payment change in table 22, we note that the larger the reduction in monthly principal and interest payments, the less likely the loans are to redefault. In particular, a 24-percent (the average) reduction in monthly payments would reduce the likelihood of redefault by 4 percentage points from the baseline redefault rate of 18 percent to 14 percent.

Rate change: Using the coefficient estimate of -0.008 for the impact of rate change in table 22, we find that the larger the reduction in the interest rates of loans that receive interest rate reductions and at least one other modification action, the lower the redefault rate. A decrease of 302 bps (the average) would decrease the redefault rate by 2 percentage points from the baseline redefault rate of 16 percent to 14 percent.

Balance reduction: Although the coefficient estimate for the impact of balance reduction in table 22 indicates, unexpectedly, that modifications that include balance reductions increase redefaults, the result is generally not robust. For instance, the estimates are insignificant when loans with balance reductions of 40 percent or more are excluded. Furthermore, the sample size used for the

²³The results are generally consistent with Agarwal and others (2011a, 2011b).

²⁴In all the regression estimates, an increase in a modification action represents an increase in the payment reduction, rate or balance reduction, or capitalization, or a term extension.

analysis is relatively small for the result to be meaningful.²⁵ While our results are inconclusive regarding the impact on the redefault rate of a modification action that includes a balance reduction, the baseline redefault rate of these loans is generally low, at 11 percent, compared to the overall redefault rate of 18 percent, which is the baseline redefault for the pool of loans used to estimate the payment reduction equation.

Capitalization: Using the coefficient estimate of 0.947 for the impact of capitalization in table 22, we see that the larger the proportion of the amount capitalized, combined with other modification actions, the higher the redefault rate. A capitalization of 6 percent of the loan balance (the average) would increase the redefault rate by 6 percentage points from the baseline redefault rate of 19 percent to 25 percent.

Term extension: Using the coefficient estimate of -0.012 for the impact of term extension in table 22, we note that the redefault rate falls as the term extension increases. A term extension of 99 months (the average) would reduce the redefault rate by 1 percentage point from the baseline redefault rate of 19 percent to 18 percent.²⁶

We discuss key results for borrower, loan, and other characteristics based on results for the payment regression equation in column 1 of table 22. The payment reduction is an amalgamation of several modification actions, and the results are generally similar to the estimates in the regression equations for the other modification actions (columns 2 through 5). We present the effects—most of which are expected—on the redefault rate of borrower and loan characteristics at modification.

Delinquency status at modification: As expected, the results indicate that the more delinquent the loan at modification, the higher the redefault rate.

²⁵Agarwal and others (2011b) also obtained statistically insignificant results, but Voicu and others (2011) using data for New York City, found significant results.

²⁶Agarwal and others (2011a) obtained a positive effect, but Agarwal and others (2011b) had an inconclusive outcome.

House price depreciation: The redefault rates of loans are higher for higher CLTVs, as expected.²⁷ Continued depreciation in house prices after the loan modification also increases the redefault rate.

Unemployment rate: The redefault rates of loans are higher in areas where the unemployment rate has increased since the modification, as expected.

Interest rate at modification: Loans with higher interest rates at the time of modification are more likely to redefault, as expected.

Time of modification: Loan modifications that started prior to the fourth quarter of 2009 are more likely to redefault than those modified in later periods, probably because over time servicers learned which actions were more effective.²⁸

We also present results of the effects of borrower and loan characteristics at origination on redefault rate:

Credit score at origination: The higher the FICO credit scores at origination, the less likely loans are to redefault, as expected.

LTV at origination: The redefault rates of loans with higher LTVs at origination are less likely to redefault, an unexpected result. However, the effects are generally not statistically significant. These results are therefore inconclusive.

Interest rate at origination: Loans with higher interest rates at origination are less likely to redefault, an unexpected result. The reason for this result is not clear.

We present results of other loan characteristics on the redefault rate:

Investor/lender: As we have already mentioned, a substantial amount of data on the loan investor or ownership are missing or unavailable, especially for subprime loans. When we include the investor variable in the model using the limited available data for prime loans, we find that the redefault rates of portfolio loans and private-label securitized loans are lower than Fannie Mae and Freddie Mac loans. Excluding the Fannie Mae and Freddie Mac loans, portfolio loans were less likely to redefault compared to private-label

²⁷The effects for the current LTV at modification are similar to Agarwal and others (2011b).

²⁸The first quarter of 2009 is the reference category for the estimation.

securitized loans.²⁹ The difference in the redefault rates could be that servicers have better information about borrowers in their pools of portfolio loans than they have about those in the pool of private-label securitized loans. This finding is also consistent with the notion that servicers modify loans differently based on investor or ownership type.

Adjustable Rate Mortgages (ARM): Loans with ARMs were more likely to redefault than those with fixed rates, as expected.³⁰

Property type: Loans for condominiums were more likely to redefault than loans for single-family houses.

Loan type: FHA and VA loans were less likely than conventional loans to redefault. The reason for this finding is not clear.

Loan purpose: Loans for refinancing, with or without cash-outs, were less likely to redefault than purchase loans. The reason for this effect is not clear.

Comparison of effects of loan modifications under different programs

We now compare the effects of the loan modifications in the CoreLogic data, which represent loans that had been modified under a variety of proprietary and federal programs, to the effects of loan modifications made under HAMP. To make the two data sets comparable, we restricted the CoreLogic data set to owner-occupied housing, since HAMP modified only this type of housing during the applicable period (fourth quarter of 2009 to second quarter of 2010). The modification also had to reduce the monthly payment. We also assumed that modification actions resulted in the same changes to the loan terms. The analysis includes loans that redefaulted 12 months after they were modified. We used 12 months after modification instead of 6 months because of HAMP data limitations, which we mentioned earlier. A summary of the results is presented in table 23. The full estimates for CoreLogic and HAMP data are in table 24 and 25, respectively. The values represent the incremental effects, which are the product of the estimated coefficients from regression estimates of loan redefaults within 12 months of modifications and the average

²⁹The results are similar to Agarwal and others (2011a). Fannie Mae and Freddie Mac loans are unique because they are generally of high quality, carry no default risk for the investor because they are guaranteed by the government, and offer different incentives to the servicers to offer loan modifications.

³⁰The effects are similar to Agarwal and others (2011a, 2011b).

changes in the modification actions based on the CoreLogic data representing the universe of loans.³¹

We find that the reduction in redefault rates is similar for loans in both data sets that are modified to lower monthly payments. For loans from the CoreLogic data set, a 30 percent payment reduction decreases the redefault rate by about 9 percentage points. For HAMP-modified loans, the same reduction results in a 10-percentage-point decrease. The results are generally similar for rate reduction and capitalization, actions commonly used for loans in both data sets.³²

Although we could not separately identify actions that resulted in principal forgiveness and principal forbearance in the CoreLogic data, our analysis of HAMP found that the 12-month redefault rate for loans that received principal forgiveness was 8 percent, and that for loans receiving forbearance 12 percent. Both rates are lower than the overall redefault rate for all HAMP loans, which was 15 percent. When controlling for observable borrower and loan characteristics, however, we found that the effect of principal forgiveness on the redefault rate was inconclusive, while larger forbearance lowers the redefault rate.³³

³¹We note that Voicu and others (2011) compared the effectiveness of HAMP and non-HAMP loan modifications for New York City, using the OCC-OTS Mortgage Metrics database. Although, their findings are broadly consistent with our results, there are substantial differences between our study and theirs. For instance, apart from conducting their analysis for only New York City, they combine all balance changes; i.e., they do not separate balance reductions from capitalization.

³²The impact of some of the key borrower and loan characteristics (such as delinquency status prior to the modification and current LTV) are similar in the CoreLogic and HAMP data.

³³The inconclusive result for principal forgiveness is likely due to the fact that this modification action is used much less frequently compared to principal forbearance.

Table 23: Comparison of Estimated Changes in Redefaults of Modified Loans within 12 Months: CoreLogic versus HAMP Data Sets

Variable	Change in redefault rates (percentage points)	
	CoreLogic data	HAMP data
Modification type		
PAYMENT DECREASE OF 30 PERCENT OF LOAN BALANCE	-9	-10
RATE DECREASE OF 326 bps	-6	-5
BALANCE REDUCTION OF 23 PERCENT	1 ^a	-1 ^b
CAPITALIZATION OF 6 PERCENT	8	8
TERM EXTENSION OF 95 MONTHS	-1 ^a	-4

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Treasury.

^aThe calculated incremental effect is not statistically significant.

^bThe balance reduction is the combined estimate for principal forgiveness and principal forbearance under HAMP. The effect of principal forgiveness is 1.288 (which is not statistically significant) and the effect of principal forbearance is -3.611.

Table 24 presents regressions of a redefault indicator (a modified loan becoming 90 days or more delinquent within 12 months of the modification) on modification actions—monthly payment changes, interest rate changes, balance reduction, capitalization, and term changes—for the CoreLogic data. The regression includes information on the borrower and the loan. We used the OLS technique, and fixed-effects estimates for loan origination year and zip codes are not reported, for brevity. The reported estimates are marginal effects (percentage point differences). The standard errors are presented in parentheses, and *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively.

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Table 24: Probability Regression Estimates of Redefaults of Modified Loans within 12 Months: CoreLogic Data

Dependent variable: redefault (90 DPD or more) within 12 months of modification, 0/1 x 100

Variables	Modification actions				
	PMT ^a	RATE ^b	BAL ^c	CAP ^d	TERM ^e
	(1)	(2)	(3)	(4)	(5)
PAYMENT CHANGE	-0.305*** (0.024)				
RATE CHANGE		-0.017*** (0.004)			
BALANCE REDUCTION			0.052 (0.139)		
CAPITALIZATION				1.405*** (0.081)	
TERM EXTENSION					-0.014 (0.012)
DPD: 30, AT MOD	3.635 (2.555)	2.840 (2.548)		2.287 (4.613)	0.756 (6.919)
DPD: 60, AT MOD	2.617 (2.112)	2.391 (2.088)	40.721 (27.776)	4.214 (4.164)	0.143 (5.870)
DPD: 90, AT MOD	16.609*** (1.766)	16.053*** (1.748)	39.111 (26.534)	14.644*** (3.969)	14.391*** (5.295)
DPD: FCL, AT MOD	21.614*** (1.958)	21.803*** (1.956)	34.996 (27.583)	13.106*** (4.121)	22.013*** (5.533)
CLTV: 80 to <95, AT MOD	0.677 (1.127)	1.695 (1.102)	-1.279 (5.302)	1.996 (1.307)	0.281 (2.073)
CLTV: 95 to <100, AT MOD	3.673** (1.483)	5.368*** (1.452)	10.131 (7.800)	5.419*** (1.686)	4.254 (2.759)
CLTV: 100 to <115, AT MOD	3.047** (1.269)	4.866*** (1.220)	3.353 (6.833)	4.167*** (1.503)	4.157* (2.183)
CLTV: 115 to <125, AT MOD	6.433*** (1.499)	8.975*** (1.438)	6.516 (8.440)	7.672*** (1.773)	6.927*** (2.612)
CLTV: 125 to <150, AT MOD	8.652*** (1.556)	11.534*** (1.479)	3.485 (8.592)	9.494*** (1.892)	6.574** (2.604)
CLTV: ≥150, AT MOD	15.546*** (1.918)	19.321*** (1.817)	1.314 (11.033)	16.132*** (2.349)	12.912*** (3.208)
HOUSE PRICES (% CHG)	-0.148 (0.150)	-0.157 (0.150)	-0.691 (1.210)	-0.150 (0.163)	-0.039 (0.295)

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Dependent variable: redefault (90 DPD or more) within 12 months of modification, 0/1 x 100

Variables	Modification actions				
	PMT ^a	RATE ^b	BAL ^c	CAP ^d	TERM ^e
	(1)	(2)	(3)	(4)	(5)
CHG IN UNEMP RATE (%)	0.041 (0.834)	-0.373 (0.833)	10.789* (6.269)	-0.950 (0.905)	0.858 (1.716)
RATE, AT MOD (bps)	0.022*** (0.003)	0.035*** (0.004)	0.111*** (0.028)	0.054*** (0.002)	0.051*** (0.005)
MOD STARTED, 2010Q1	0.025 (1.014)	0.272 (1.017)	18.345 (17.150)	-0.644 (1.084)	-0.468 (2.035)
MOD STARTED, 2010Q2	-5.325*** (0.977)	-5.341*** (0.981)	1.953 (17.707)	-5.334*** (1.047)	-6.567*** (1.979)
FICO: 550 to <580, AT ORIGN	-3.547** (1.660)	-3.074* (1.670)	51.947** (25.946)	-3.223* (1.723)	-4.554 (2.807)
FICO: 580 to <620, AT ORIGN	-5.918*** (1.391)	-5.057*** (1.405)	-10.356 (21.752)	-3.955*** (1.446)	-5.473** (2.396)
FICO: 620 to <660, AT ORIGN	-10.228*** (1.359)	-9.767*** (1.374)	-16.725 (20.584)	-7.788*** (1.418)	-11.653*** (2.363)
FICO: 660 to <680, AT ORIGN	-13.030*** (1.534)	-12.613*** (1.544)	-14.521 (20.749)	-9.941*** (1.616)	-15.514*** (2.802)
FICO: 680 to <700, AT ORIGN	-14.135*** (1.552)	-13.932*** (1.560)	-15.033 (20.716)	-12.193*** (1.645)	-14.358*** (2.852)
FICO: 700 to <750, AT ORIGN	-14.441*** (1.475)	-14.037*** (1.485)	-21.381 (20.613)	-11.728*** (1.560)	-17.219*** (2.705)
FICO: ≥750, AT ORIGN	-18.370*** (1.656)	-18.155*** (1.663)	-20.708 (20.577)	-15.670*** (1.792)	-21.966*** (3.111)
LTV: 70 to <80, AT ORIGN	0.008 (1.036)	-1.065 (1.021)	-2.761 (5.060)	-0.065 (1.157)	1.334 (2.103)
LTV: 80, AT ORIGN	0.612 (1.119)	-0.352 (1.101)	-5.876 (5.677)	0.335 (1.253)	0.008 (2.268)
LTV: 81, to <90, AT ORIGN	0.176 (1.366)	-0.861 (1.347)	0.878 (7.502)	0.241 (1.510)	3.975 (2.672)
LTV: 90 to <100, AT ORIGN	0.483 (1.358)	-0.943 (1.333)	-0.157 (7.706)	0.191 (1.527)	1.085 (2.611)
LTV: ≥100, AT ORIGN	0.852 (1.670)	-0.701 (1.641)	-3.756 (9.412)	0.265 (1.878)	1.355 (3.181)
RATE, AT ORIGN (bps)	-0.006** (0.002)	-0.005** (0.003)	-0.044*** (0.014)	-0.017*** (0.003)	-0.009* (0.005)

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Dependent variable: redefault (90 DPD or more) within 12 months of modification, 0/1 x 100

Variables	Modification actions				
	PMT ^a	RATE ^b	BAL ^c	CAP ^d	TERM ^e
	(1)	(2)	(3)	(4)	(5)
UPB, AT ORIGN (LOG)	2.085** (0.954)	1.352 (0.950)	-4.975 (6.150)	2.492** (1.048)	4.329** (1.970)
PRIME (vs. SUBPRIME)	-0.078 (1.142)	1.159 (1.162)	50.351* (28.682)	3.880*** (1.192)	4.813** (2.369)
ARM (vs. FIXED RATE)	5.079*** (0.939)	5.016*** (0.936)	2.643 (3.683)	3.988*** (1.068)	5.282*** (1.972)
CONDO	0.061 (0.866)	0.022 (0.859)	0.816 (4.620)	0.007 (0.942)	2.399 (1.724)
OTHER HOUSING	-1.054 (1.683)	-1.295 (1.663)	7.042 (9.176)	-2.176 (1.802)	0.232 (3.104)
FHA	2.449** (1.208)	2.164* (1.248)	-75.761*** (22.451)	2.110* (1.266)	0.243 (2.403)
VA	-5.163* (3.070)	-4.897 (3.098)		-3.104 (3.211)	-4.821 (6.014)
REFI: CASH OUT	-2.527*** (0.814)	-2.455*** (0.809)	-2.179 (4.291)	-2.115** (0.884)	-3.123* (1.701)
REFI: NO CASH OUT	-1.157 (0.894)	-1.165 (0.889)	-7.838* (4.518)	-0.428 (0.979)	-3.713** (1.805)
REFI: OTHER	-5.047*** (1.017)	-5.219*** (1.022)	-29.375* (16.598)	-4.769*** (1.075)	-3.011 (1.844)
CONSTANT	-2.046 (11.690)	-3.192 (11.819)	4.668 (86.617)	-34.329** (13.383)	-45.151* (24.626)
Origination year fixed-effects	Yes	Yes	Yes	Yes	Yes
Zip code fixed-effects	Yes	Yes	Yes	Yes	Yes
Baseline redefault rate	26%	25%	15%	27%	27%
Mean value of mod action	30%	326 bps	23%	6%	95months
Prob>F	0.000	0.000	0.000	0.000	0.000
Observations	30,683	30,508	2,046	27,717	10,914
R-squared	0.391	0.387	0.753	0.409	0.585
Adj. R-squared	0.125	0.120	0.0861	0.124	0.163

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Note: *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively.

^aPMT=Payment change (%)

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^bRATE=Rate change (bps)

^cBAL=Balance reduction (%)

^dCAP=Capitalization (%)

^eTERM=Term change (months)

Table 25 presents regressions of a redefault indicator (a modified loan becoming 90 days or more delinquent within 12 months of the modification) on modification actions—monthly payment changes, interest rate changes, principal forgiveness, principal forbearance, capitalization, and term changes—for the HAMP data. The regression includes information on the borrower and the loan. We used the OLS technique. Fixed-effects estimates for loan origination year and zip codes are not reported, for brevity; and fixed effects for the servicers are not reported for reasons of confidentiality. The reported estimates are marginal effects (percentage point differences). The standard errors are presented in parentheses, and *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively.

Table 25: Probability Regression Estimates of Redefaults of Modified Loans within 12 Months: HAMP Data

Dependent variable: redefault (90+ DPD) within 12 months of modification, 0/1 x 100

Variables	Modification actions					
	PMT ^a (1)	RATE ^b (2)	PFGV ^c (3)	PFBR ^d (4)	CAP ^e (5)	TERM ^f (6)
PAYMENT CHANGE	-0.322*** (0.006)					
RATE CHANGE		-0.015*** (0.001)				
PRINCIPAL FORGIVENESS			0.056 (0.154)			
PRINCIPAL FORBEARANCE				-0.157*** (0.013)		
CAPITALIZATION					1.345*** (0.021)	
TERM EXTENSION						-0.046*** (0.001)
PFGV*PFBR			-2.188 (2.608)	-6.893*** (2.079)		
DPD: 30, AT MOD	4.044***	4.449***	3.415	2.268**	4.133***	4.175***

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Dependent variable: redefault (90+ DPD) within 12 months of modification, 0/1 x 100

Variables	Modification actions					
	PMT ^a (1)	RATE ^b (2)	PFGV ^c (3)	PFBR ^d (4)	CAP ^e (5)	TERM ^f (6)
	(0.273)	(0.270)	(5.103)	(0.966)	(0.274)	(0.278)
DPD: 60, AT MOD	4.419***	4.663***	3.194	3.562***	4.127***	4.666***
	(0.317)	(0.316)	(5.307)	(0.980)	(0.319)	(0.325)
DPD: 90, AT MOD	10.155***	10.322***	5.927*	7.095***	5.966***	10.327***
	(0.250)	(0.249)	(3.529)	(0.796)	(0.260)	(0.256)
DPD: FCL, AT MOD	13.396***	10.764***		10.584***	4.314***	12.817***
	(0.419)	(0.430)		(0.974)	(0.444)	(0.432)
FICO: 550 to <580, AT MOD	-5.669***	-5.610***	-5.772*	-4.199***	-5.351***	-5.430***
	(0.220)	(0.220)	(3.235)	(0.573)	(0.221)	(0.230)
FICO: 580 to <620, AT MOD	-7.726***	-7.679***	-6.593**	-5.996***	-7.109***	-7.444***
	(0.220)	(0.220)	(2.975)	(0.592)	(0.221)	(0.229)
FICO: 620 to <660, AT MOD	-9.254***	-9.310***	-5.065	-7.462***	-8.168***	-8.944***
	(0.253)	(0.252)	(3.336)	(0.726)	(0.254)	(0.260)
FICO: 660 to <680, AT MOD	-10.296***	-10.292***	-12.297***	-7.560***	-8.686***	-10.008***
	(0.376)	(0.374)	(4.691)	(1.176)	(0.378)	(0.385)
FICO: 680 to <700, AT MOD	-10.140***	-10.252***	-4.742	-7.319***	-8.171***	-9.872***
	(0.407)	(0.405)	(4.894)	(1.322)	(0.410)	(0.416)
FICO: 700 to <750, AT MOD	-10.590***	-10.748***	-6.888*	-5.865***	-8.496***	-10.065***
	(0.315)	(0.313)	(3.961)	(1.036)	(0.319)	(0.322)
FICO: ≥750, AT MOD	-9.113***	-9.396***	-8.247**	-5.980***	-7.102***	-8.491***
	(0.328)	(0.326)	(4.098)	(1.228)	(0.333)	(0.334)
CLTV: 80 to <95, AT MOD	1.549**	1.316**		0.817	1.926***	1.612***
	(0.607)	(0.606)		(4.160)	(0.614)	(0.620)
CLTV: 95 to <100, AT MOD	1.875***	1.520**	13.601	3.216	2.143***	1.900***
	(0.683)	(0.681)	(50.401)	(4.312)	(0.689)	(0.698)
CLTV: 100 to <115, AT MOD	3.836***	3.156***	0.729	4.396	4.016***	3.825***
	(0.606)	(0.605)	(34.451)	(3.975)	(0.613)	(0.621)
CLTV: 115 to <125, AT MOD	5.316***	4.619***	-0.280	4.294	5.399***	5.162***
	(0.655)	(0.653)	(33.686)	(4.055)	(0.661)	(0.672)
CLTV: 125 to <150, AT MOD	6.583***	5.897***	-2.838	7.429*	6.624***	6.464***
	(0.690)	(0.689)	(32.826)	(4.125)	(0.697)	(0.708)
CLTV: ≥150, AT MOD	8.184***	7.469***	0.394	10.679**	8.505***	8.092***
	(0.753)	(0.752)	(33.041)	(4.229)	(0.760)	(0.773)
DTIBE: 35 to <40, AT MOD	-0.719**	-0.606*	1.254	-1.882**	-0.112	-0.613*

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Dependent variable: redefault (90+ DPD) within 12 months of modification, 0/1 x 100

Variables	Modification actions					
	PMT ^a (1)	RATE ^b (2)	PFGV ^c (3)	PFBR ^d (4)	CAP ^e (5)	TERM ^f (6)
	(0.314)	(0.313)	(3.443)	(0.854)	(0.315)	(0.321)
DTIBE: 40 <45, AT MOD	-0.550*	-0.197	-0.703	-2.020**	0.588*	-0.117
	(0.312)	(0.311)	(3.495)	(0.853)	(0.312)	(0.318)
DTIBE: 45 to <50, AT MOD	-0.595*	-0.280	-2.782	0.170	0.705**	-0.250
	(0.319)	(0.319)	(3.460)	(0.864)	(0.320)	(0.326)
DTIBE: 50 to <55, AT MOD	-0.992***	-0.931***	-7.020*	-0.738	0.345	-0.657*
	(0.336)	(0.335)	(3.933)	(0.887)	(0.337)	(0.343)
DTIBE: 55 to <65, AT MOD	-1.312***	-1.199***	-2.013	-0.946	0.099	-1.163***
	(0.281)	(0.281)	(3.542)	(0.750)	(0.282)	(0.288)
DTIBE: ≥65, AT MOD	-1.657***	-2.006***	-3.272	-2.570***	-0.764***	-1.863***
	(0.239)	(0.239)	(3.311)	(0.627)	(0.241)	(0.245)
HOUSE PRICES (% CHG)	0.010	0.022	4.184***	0.186	0.025	0.030
	(0.043)	(0.043)	(1.618)	(0.117)	(0.043)	(0.044)
CHG IN UNEMP RATE (%)	0.137	0.158	-12.656	-0.184	0.072	0.216
	(0.224)	(0.224)	(15.177)	(0.672)	(0.224)	(0.230)
RATE, AT MOD (bps)	0.003***	0.018***	0.020**	0.023***	0.037***	0.024***
	(0.001)	(0.001)	(0.009)	(0.002)	(0.001)	(0.001)
TRIAL LENGTH ≥6 MONS	0.778***	0.775***	7.829	1.089**	-1.070***	0.130
	(0.178)	(0.177)	(7.752)	(0.552)	(0.179)	(0.185)
MOD REQUIRES PMI	1.105***	1.380***	-14.947	0.359	1.467***	1.224***
	(0.249)	(0.249)	(10.472)	(0.946)	(0.250)	(0.258)
MOD STARTED, 2010Q1	0.318	0.442	-11.125	2.138**	-0.230	0.502
	(0.314)	(0.316)	(9.411)	(0.936)	(0.316)	(0.324)
MOD STARTED, 2010Q2	0.439	0.668**		2.455**	0.004	0.931***
	(0.311)	(0.313)		(0.957)	(0.313)	(0.320)
LTV: 70 to <80, AT ORIGN	1.399***	1.299***	0.384	0.962	1.284***	1.371***
	(0.243)	(0.242)	(2.798)	(0.756)	(0.243)	(0.250)
LTV: 80, AT ORIGN	2.082***	2.190***	3.036	1.334*	1.859***	2.136***
	(0.255)	(0.254)	(3.085)	(0.752)	(0.256)	(0.263)
LTV: 81 to <90, AT ORIGN	2.996***	2.814***	7.908	1.119	2.086***	2.318***
	(0.321)	(0.321)	(7.359)	(0.880)	(0.322)	(0.335)
LTV: 90 to <100, AT ORIGN	3.585***	3.415***	23.065**	1.276	2.612***	2.878***
	(0.311)	(0.311)	(11.156)	(0.872)	(0.312)	(0.323)
LTV: ≥100, AT ORIGN	4.874***	4.916***	-5.685	0.989	4.119***	4.238***

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Dependent variable: redefault (90+ DPD) within 12 months of modification, 0/1 x 100

Variables	Modification actions					
	PMT ^a (1)	RATE ^b (2)	PFGV ^c (3)	PFBR ^d (4)	CAP ^e (5)	TERM ^f (6)
	(0.333)	(0.333)	(13.573)	(0.965)	(0.334)	(0.347)
RATE, AT ORIGN (bps)	0.006***	0.007***	-0.047**	-0.001	-0.009***	0.001
	(0.001)	(0.001)	(0.020)	(0.001)	(0.001)	(0.001)
UPB, AT ORIGN (LOG)	2.082***	1.641***	1.944	2.767***	2.250***	2.016***
	(0.242)	(0.243)	(4.701)	(0.739)	(0.243)	(0.250)
INVESTOR: PRIV-LABEL SEC	3.125***	3.328***	-6.781	0.763	1.522***	1.580***
	(0.221)	(0.221)	(9.231)	(0.601)	(0.221)	(0.235)
INVESTOR: PORTFOLIO	-0.267	-0.642**			-1.373***	-0.579**
	(0.270)	(0.270)			(0.274)	(0.284)
CONDO	1.687***	1.336***	-7.933	1.766**	1.894***	1.597***
	(0.304)	(0.303)	(6.017)	(0.824)	(0.305)	(0.315)
OTHER HOUSING	0.468	0.388	-28.101**	-2.324*	0.561	0.498
	(0.383)	(0.380)	(13.093)	(1.362)	(0.384)	(0.407)
CONSTANT	-15.997***	-19.942***	39.377	-38.042***	-33.487***	-26.933***
	(2.946)	(2.996)	(69.676)	(9.650)	(2.951)	(3.027)
Origination year fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Zip code fixed-effects	Yes	Yes	Yes	Yes	Yes	Yes
Baseline redefault rate	15%	15%	8%	12%	15%	15%
Mean value of mod action	37%	396 bps	17%	24%	5%	35 months
Prob>F	0.000	0.000	0.000	0.000	0.000	0.000
Observations	253,320	249,434	1,702	32,153	250,538	233,347
R-squared	0.150	0.144	0.613	0.300	0.153	0.148
Adj. R-squared	0.0884	0.0815	0.103	0.0916	0.0915	0.0819

Source: GAO analysis of data from CoreLogic and its Home Price Index, the Bureau of Labor Statistics, and Treasury.

Note: *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively.

^aPMT=Payment change (%)

^bRATE=Rate change (bps)

^cPFGV=Principal forgiveness (%)

^dPFBR=Principal forbearance (%)

^eCAP=Capitalization (%)

^fTERM=Term change (months)

Trade-off between reductions
in monthly payments and
redefault rates

Using the loans from the CoreLogic data, we estimated the impact of decreases in monthly payments on redefault within 6 months of modification, limiting the data to payment decreases and within set ranges. These included payment decreases—0 percent to less than 10 percent (the reference category), 10 percent to less than 20 percent, 20 percent to less than 30 percent, 30 percent to less than 40 percent, 40 percent to less than 50 percent, 50 percent to less than 60 percent, and more than 60 percent. We also included all the controls used in the previous estimates (see table 22). An abridged version of the estimates is presented in table 26 (only for the buckets of payment decreases). The first bucket is used as the reference group, and the reported estimates are marginal effects (percentage point differences). The standard errors are presented in parentheses, and *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively. The relationship between the payment decreases and redefault rate is shown in figure 21, based on the estimates in column 1 of table 27. We also summarize below the results for the separate modification actions in columns 2 to 5 of table 27.

Table 26: Probability Regression Estimates of Redefaults for Decreases in Monthly Payments: Loan Modifications in CoreLogic Data

Dependent variable: redefault (90 DPD or more) within 6 months of modification, 0/1 x 100	
Variables ^a	Estimate
PAYMENT DECREASE: 10% to 19%	-3.790*** (0.478)
PAYMENT DECREASE: 20% to 29%	-3.814*** (0.532)
PAYMENT DECREASE: 30% to 39%	-6.559*** (0.627)
PAYMENT DECREASE: 40% to 49%	-7.984*** (0.689)
PAYMENT DECREASE: 50% to 59%	-7.541*** (0.764)
PAYMENT DECREASE: 60% OR MORE	-7.697*** (0.855)

Source: GAO analysis of data from CoreLogic and its Home Price Index, and the Bureau of Labor Statistics.

Note: *, **, and *** denote two-tailed significance at 10 percent, 5 percent, and 1 percent or better, respectively

^aThe reference category for the payment decrease is “less than 10 percent.”

Table 27: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification), by Modification Action and Size of Payment Reduction

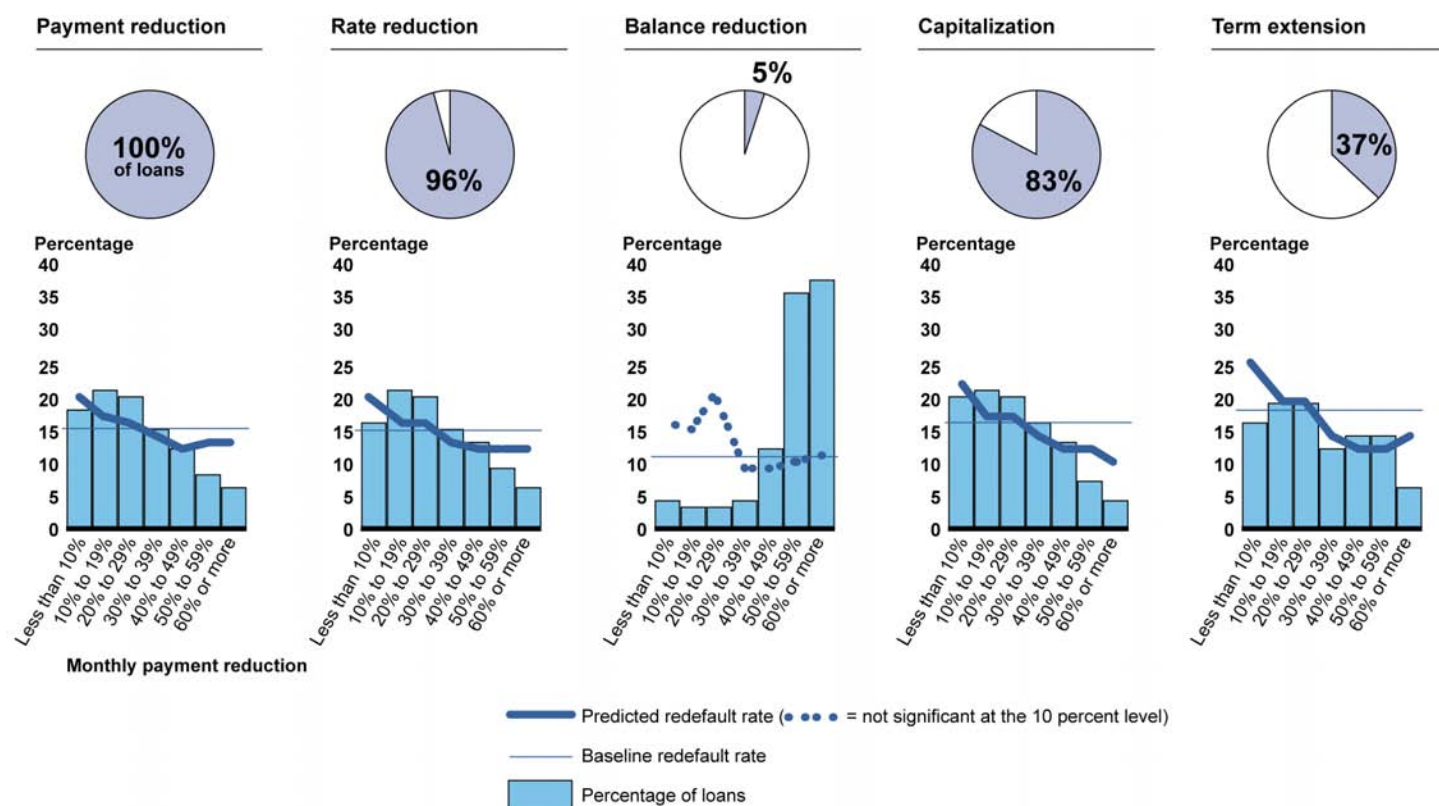
Monthly payment reduction	Payment reduction (1)		Rate reduction (2)		Balance reduction (3)		Capitalization (4)		Term extension (5)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	16%		15%		11%		16%		18%	
Less than 10%	20%	18%	20%	16%	16%	4%	22%	20%	26%	16%
10% to 19%	17%	21%	16%	21%	15% ^a	3%	17%	21%	20%	19%
20% to 29%	16%	20%	16%	20%	20% ^a	3%	17%	20%	20%	19%
30% to 39%	14%	15%	13%	15%	9% ^a	4%	14%	16%	14%	12%
40% to 49%	12%	12%	12%	13%	9% ^a	12%	12%	13%	12%	14%
50% to 59%	13%	8%	12%	9%	10% ^a	36%	12%	7%	12%	14%
60% or more	13%	6%	12%	6%	11% ^a	38%	10%	4%	14%	6%
Observations	71856 (100%)		69226 (96%)		3936 (5%)		59557 (83%)		26683 (37%)	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

^aThe estimate is not statistically significant at the 10 percent level.

As shown in figure 21, there is a tradeoff between decreases in monthly payments as a result of modification actions and the redefault rate. That is, as the payments decrease, the redefault rate generally decreases, but only up to a certain point. As an example, irrespective of the modification action (except for balance reduction), the redefault rate is 12 percent for loans receiving a 40-percent reduction (the lowest redefault rate), but rises to 20 percent for loans receiving a reduction of less than 10 percent. The data also show that the majority of the loans received payment reductions of less than 30 percent. We obtain similar effects for the specific modification actions—rate reduction, balance reduction, capitalization, and term extension. The modification actions generally result in lower redefault rates as the payment reductions increase, except for balance reductions (see fig. 21). Some of these actions were much more commonly used than others—for example, interest rate reductions and capitalization were used far more frequently than term extensions and reducing the balance (see fig. 21). Also, the majority of the loans receive payment reductions of less than 30 percent, except for balance reductions which generally result in payment reductions exceeding 40 percent.

Figure 21: Volume of Modification Action, Predicted Redefault Rates, and Distribution of Payment Reductions (within 6 months of modification), by Modification Action and Size of Payment Reduction



Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Several borrower and loan characteristics at modification strongly predict redefaults, but their impacts differ according to how much payments are reduced and the type of loan or borrower characteristics. Overall, borrower and loan characteristics at the time of modification are predictive of redefault. Large payment reductions generally help borrowers with high credit risks more than they help other borrowers. High-risk borrowers generally have high CLTV ratios, high unemployment rates after modification, and increased delinquency prior to modification. These borrowers are sensitive to large payment reductions possibly because they cannot afford their mortgages, but we could not control for affordability in the model because of a lack of usable data on the debt-to-income (DTI) ratio.

We find that payment reductions are more effective in reducing redefault rates for borrowers with high CLTV ratios, especially those with ratios

above 125 percent (see table 28 and fig. 22). For instance, the baseline redefault rate is 18 percent for borrowers with a CLTV of at least 125 percent and 13 percent for those with a CLTV of less than 95 percent. With a payment reduction of less than 10 percent, the redefault rates are 25 percent and 16 percent for these two groups, respectively, but fall to 16 percent and 12 percent for payment reductions of 30 percent to 39 percent. Among the loans we analyzed, about a third had a CLTV of less than 95 percent and about a quarter had a CLTV of 125 percent or more. For all CLTV categories, the majority of the loans received payment reductions of less than 30 percent.

Table 28: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification), by Borrowers' Home Equity Position and Size of Payment Reduction

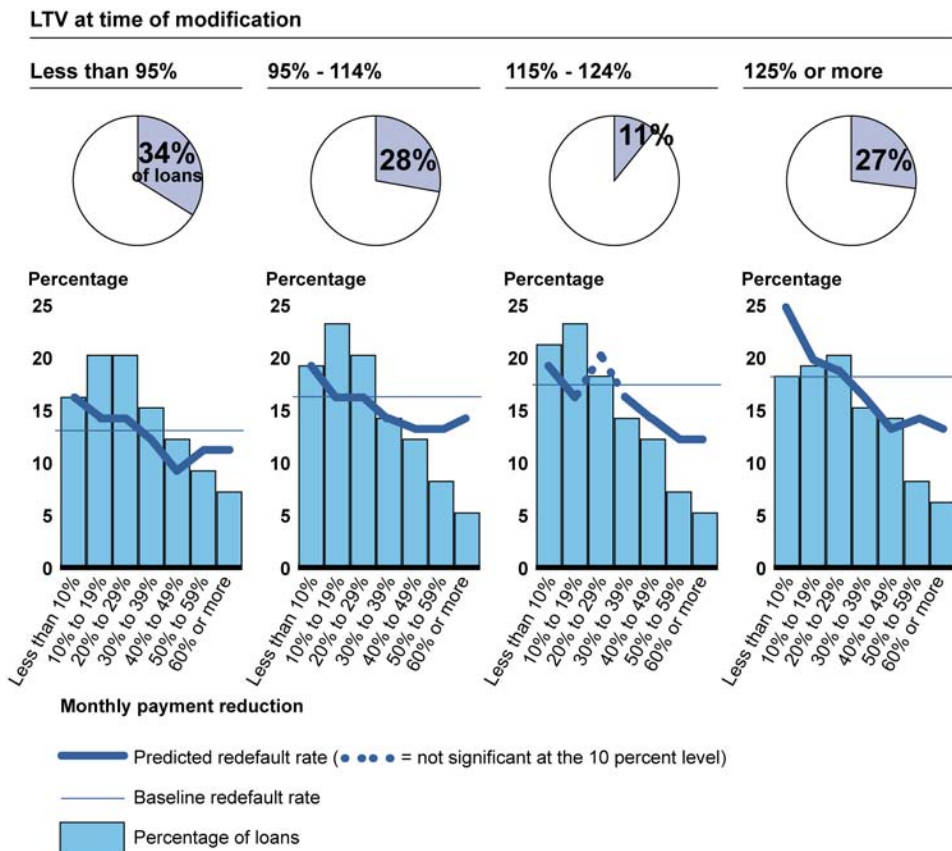
Monthly payment reduction	CLTV: less than 95% (1)		CLTV: 95%-114% (2)		CLTV: 115-124% (3)		CLTV: 125% or more (4)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	13%		16%		17%		18%	
Less than 10%	16%	16%	19%	19%	19%	21%	25%	18%
10% to 19%	14%	20%	16%	23%	16% ^a	23%	20%	19%
20% to 29%	14%	20%	16%	20%	20% ^a	18%	19%	20%
30% to 39%	12%	15%	14%	14%	16% ^a	14%	16%	15%
40% to 49%	9%	12%	13%	12%	14%	12%	13%	14%
50% to 59%	11%	9%	13%	8%	12%	7%	14%	8%
60% or more	11%	7%	14%	5%	12%	5%	13%	6%
Observations	24522 (34%)		20402 (28%)		7802 (11%)		19447 (27%)	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Note: CLTV = current loan-to-value ratio.

^aThe estimate is not statistically significant at the 10 percent level.

Figure 22: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification), by Borrowers' Home Equity Position and Size of Payment Reduction



Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Payment reductions are more effective in reducing redefault rates for borrowers in areas where the unemployment rate increased after modification (see table 29 and fig. 23). For instance, the baseline redefault rate is 18 percent for borrowers who are located in areas that experienced higher unemployment rates and 13 percent for those experiencing lower unemployment rates. With a payment reduction of between 50 to 59 percent, the redefault rate reduces to about 14 and 12 percent, respectively. Among the loans we analyzed, the proportion of loans located in areas with increases in or no change in unemployment rates was slightly lower than those located in areas with decreases in unemployment rates. For both unemployment categories, the majority of the loans received payment reductions of less than 30 percent.

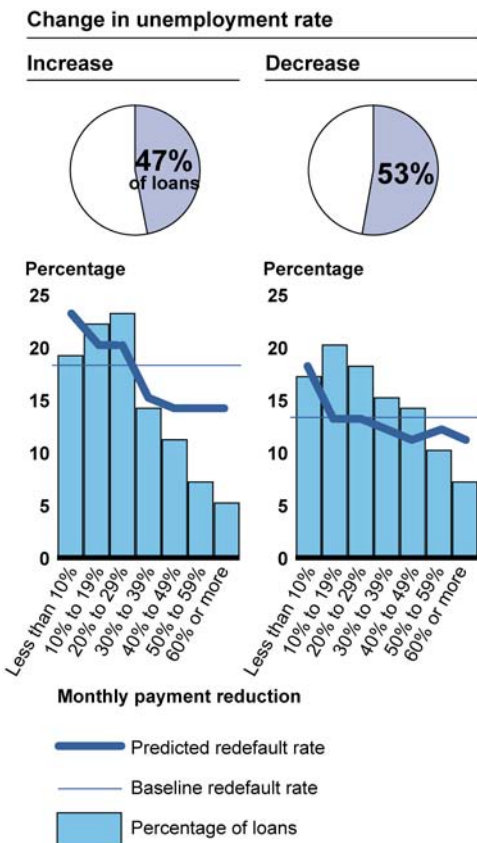
Table 29: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification), by Unemployment Rate and Size of Payment Reduction

Monthly payment reduction	Increase in unemployment rate ^a (1)		Decrease in unemployment rate (2)	
	Redefault	Loans	Redefault	Loans
Baseline redefault	18%		13%	
Less than 10%	23%	19%	18%	17%
10% to 19%	20%	22%	13%	20%
20% to 29%	20%	23%	13%	18%
30% to 39%	15%	14%	12%	15%
40% to 49%	14%	11%	11%	14%
50% to 59%	14%	7%	12%	10%
60% or more	14%	5%	11%	7%
Observations	33435 (47%)		38421 (53%)	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

^aThe increase in the unemployment rate includes "no change."

Figure 23: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification), by Unemployment Rate 6 months after Modification and Size of Payment Reduction



Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Payment reductions are more effective for borrowers who are 90 days or more past due (see table 30 and fig. 24). For instance, the baseline redefault rate is 17 percent for borrowers who are 90 days or more delinquent. But with a payment reduction of at least 40 percent, the redefault rate reduces to 13 percent. The payment reductions are generally not very effective for the other borrowers, including those in foreclosure. Among the loans we analyzed, almost three-quarters were 90 days or more past due. For all loan performance categories, the majority of the loans received payment reductions of less than 30 percent.

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Table 30: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification), by Loan Performance at Modification and Size of Payment Reduction

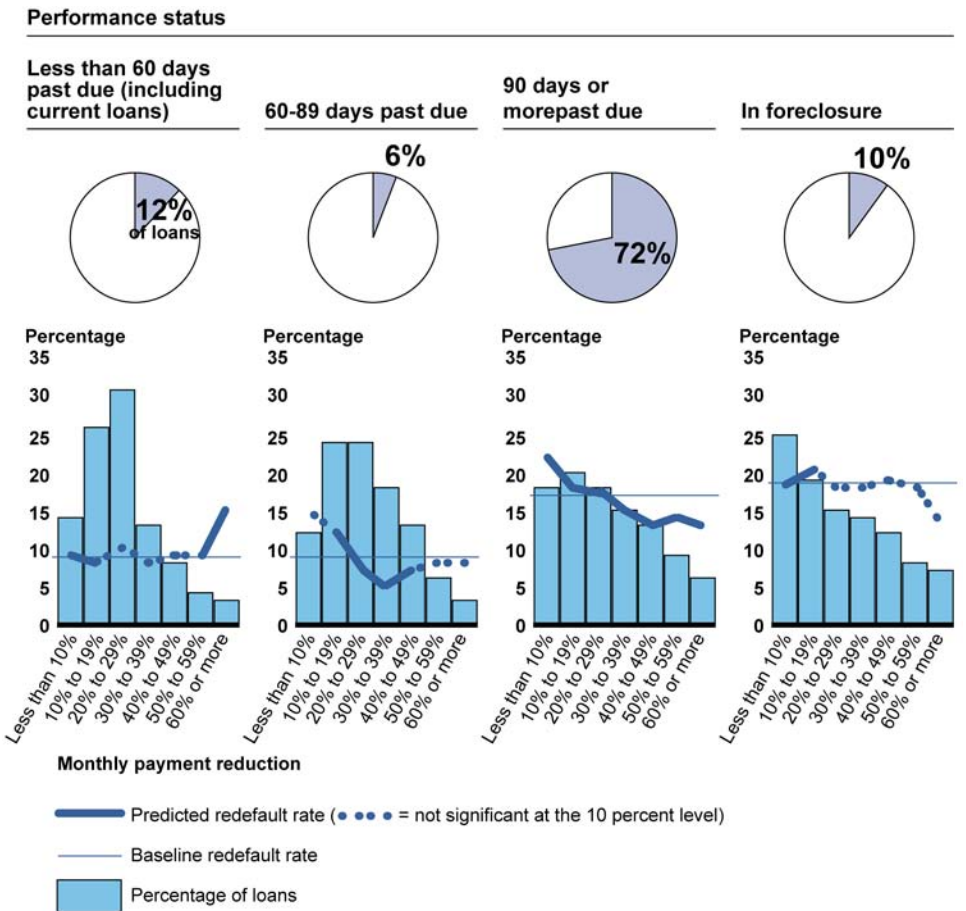
Monthly payment reduction	DPD: < 60 (1)		DPD: 60-89 (2)		DPD: >=90 (3)		DPD: FCL (4)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	9%		9%		17%		19%	
Less than 10%	9%	14%	15%	12%	22%	18%	19%	25%
10% to 19%	8% ^a	26%	12% ^a	24%	18%	20%	21% ^a	19%
20% to 29%	10% ^a	31%	7%	24%	18%	18%	18% ^a	15%
30% to 39%	8% ^a	13%	5%	18%	15%	15%	18% ^a	14%
40% to 49%	9% ^a	8%	7%	13%	13%	13%	19% ^a	12%
50% to 59%	9% ^a	5%	8% ^a	6%	14%	9%	18% ^a	8%
60% or more	15%	3%	8% ^a	3%	13%	6%	14% ^a	7%
Observations	8543 (12%)		4393 (6%)		51970 (72%)		6950 (10%)	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Note: DPD = days past due prior to modification. FCL = loan is in foreclosure.

^aThe estimate is not statistically significant at the 10 percent level.

Figure 24: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification), by Loan Performance at Modification and Size of Payment Reduction



Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Robustness Checks

To ensure that the results were reliable, we performed several checks of robustness for the main results reported for the CoreLogic data set in column 1 of table 22 for payment reductions. We find that the results of the checks are generally consistent with what we have reported.

First, we estimated the model for different durations after the modifications—12 and 18 months—instead of 6 months.³⁴ The baseline redefault rate is 35 percent within 12 months of modification, and a 23-percent (the average) reduction in payments decreases the redefault rate by 8 percentage points to 27 percent. Similarly, within 18 months of modification, the redefault rate decreases from a baseline of 51 percent to 45 percent for a payment reduction of 18 percent (the average). Second, as already indicated some loans had multiple modifications. Similar estimates were obtained when we used only the latest modification action for loans that received multiple modifications. Third, as in other studies, the data were limited to loans that entered the CoreLogic database within 3 months of origination.³⁵ This would help to reduce potential survivorship bias.³⁶ Also, we restricted the sample to loans originated since January 2005, including those originated since the housing boom. For both of these cases, the results were similar to the main results. Fourth, the significance of the estimates was unchanged when we estimated robust standard errors. Finally, the results were unchanged when we clustered the standard errors by zip codes.³⁷

To check if there were unobserved borrower characteristics that have not been accounted for in our analysis, we estimated the model across loans with characteristics of different quality based on FICO credit scores and delinquency status.³⁸ We identified two groups of loans—relatively high-quality and low-quality loans. The rationale for this approach is that unobservable characteristics across the classes of loans of different quality should result in estimated redefault rates that differ in a predictable

³⁴This check recognizes that these borrowers are vulnerable and have elevated potential for subsequent redefault long after the initial cure; see, for example, Ambrose and Capone (2000).

³⁵See, for example, Adelino and others (2010).

³⁶Essentially, the default risk estimates for pools of mortgages that were originated long before they were included in the CoreLogic database may exhibit survivorship bias. That is, those estimates may be distorted because we cannot detect the loans that were originally in these pools but defaulted prior to their inclusion in the CoreLogic data set. We can only analyze the survivors, potentially resulting in bias in our estimates of default risk.

³⁷See, for example, Adelino and others (2010).

³⁸See, for example, Agarwal and others (2011a) which uses FICO credit scores and the documentation status of the loans at origination. Since the data are not available for documentation status, we used the delinquency status of the borrower and the FICO credit scores at the time of the modification, both of which are predictive of redefault.

way. For instance, low-quality loans would be more likely to redefault than high-quality loans, because screening on unobservable characteristics is less important for the latter pool of loans. But if the estimates show that the conditional redefault rates are similar or low-quality loans were less likely to redefault, then unobserved characteristics related to loan quality are likely not the reason for the redefaults. The robustness check suggests that the results are not likely to be biased by unobserved borrower characteristics.

We also excluded loans owned or guaranteed by the enterprises and estimated the models. Loans owned or guaranteed by the enterprises differ from private-label securitized loans in terms of underwriting standards, default risk guarantee, servicer incentives, and modification restrictions. We conducted this analysis for prime loans only due to data limitations. The results were similar with the Fannie Mae and Freddie Mac loans excluded.³⁹ We also provide predicted estimates of the redefault rates for payment reductions for different modification actions (payment reduction, rate reduction, balance reduction, capitalization and term extension) using data on subpopulations of loans—prime, subprime, enterprise, nonenterprise, FHA, and VA loans in tables 31 to 36 (see also fig. 25).⁴⁰

We note that since the modification terms are not randomly determined, but rather may reflect some unobserved borrower and loan characteristics, the results, as in previous studies, should be considered as describing the associative relationship between the modification terms and redefault.⁴¹

³⁹The CoreLogic data set did not contain complete information about loan investors (e.g., Fannie Mae or Freddie Mac, portfolio, and private label), especially among subprime loans. To conduct this analysis, we excluded loans that did not have information about the investor, and then excluded Fannie Mae and Freddie Mac loans.

⁴⁰Because of the challenge of identifying adjustable-rate and hybrid mortgages (ARM) that have received modifications, we estimated separate models for fixed-rate mortgages and ARMs. The results were generally consistent with our findings.

⁴¹See, for example, Agarwal and others (2011b). Furthermore, a complete evaluation of the modification process should include a cost-benefit (or net present value) analysis in addition to redefault. See, for example, Ambrose and Capone (1996). Also, we could not include certain borrower and loan characteristics that could affect redefault—for instance, the borrower's financial condition at the time of modification. Nonetheless, our analysis is consistent with previous research.

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Table 31: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification) for Prime Loans (Excluding Government-Guaranteed and Enterprise Loans), by Modification Action and Size of Payment Reduction

Monthly payment reduction	Payment reduction (1)		Rate reduction (2)		Balance reduction (3)		Capitalization (4)		Term extension (5)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	14%		13%		10%		15%		17%	
Less than 10%	19%	12%	18%	10%	11%	4%	21%	13%	26%	9%
10% to 19%	16%	16%	16%	17%	16% ^a	3%	17%	17%	20%	10%
20% to 29%	16%	21%	15%	22%	19% ^a	2%	17%	22%	22%	20%
30% to 39%	13%	18%	12%	18%	7% ^a	4%	13%	20%	14%	14%
40% to 49%	11%	15%	10%	16%	9% ^a	12%	11%	16%	13%	18%
50% to 59%	11%	10%	11%	11%	9% ^a	37%	11%	8%	13%	20%
60% or more	11%	7%	10%	7%	11% ^a	38%	8%	4%	14%	9%
Observations	49526		47677		3809		39727		16694	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

^aThe estimate is not statistically significant at the 10 percent level.

Table 32: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification) for Subprime Loans (Excluding Government-Guaranteed and Enterprise Loans), by Modification Action and Size of Payment Reduction

Monthly payment reduction	Payment reduction (1)		Rate reduction (2)		Capitalization (3)		Term extension (4)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	17%		17%		16%		19%	
Less than 10%	18%	17%	17%	13%	23%	20%	18%	20%
10% to 19%	20% ^a	22%	19% ^a	22%	20% ^a	18%	33%	14%
20% to 29%	18% ^a	22%	17% ^a	23%	16%	18%	19% ^a	18%
30% to 39%	17% ^a	14%	16% ^a	14%	14%	15%	18% ^a	16%
40% to 49%	16% ^a	11%	16% ^a	11%	12%	12%	14% ^a	17%
50% to 59%	16% ^a	7%	16% ^a	8%	11%	9%	15% ^a	12%
60% or more	14% ^a	7%	14% ^a	8%	8%	9%	4% ^a	3%
Observations	11470		10921		9166		3725	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Note: Estimates are not available for balance reduction due to insufficient data.

^aThe estimate is not statistically significant at the 10 percent level.

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Table 33: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 months of modification) for Enterprise Prime Loans, by Modification Action and Size of Payment Reduction

Monthly payment reduction	Payment reduction (1)		Rate reduction (2)		Balance reduction (3)		Capitalization (4)		Term extension (5)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	15%		15%		9%		16%		18%	
Less than 10%	20%	11%	20%	9%	0%	1%	22%	13%	29%	7%
10% to 19%	17%	15%	17%	15%	16% ^a	2%	18%	17%	23%	9%
20% to 29%	16%	20%	16%	21%	12% ^a	2%	17%	22%	23%	19%
30% to 39%	14%	18%	14%	18%	7% ^a	3%	15%	20%	16%	11%
40% to 49%	12%	16%	12%	17%	6% ^a	11%	12%	17%	14%	18%
50% to 59%	13%	11%	12%	12%	8% ^a	39%	13%	8%	14%	24%
60% or more	12%	8%	12%	8%	11% ^a	43%	8%	4%	15%	11%
Observations	32950		31811		3078		27463		11426	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

^aThe estimate is not statistically significant at the 10 percent level.

Table 34: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 Months of Modification) for Non-Enterprise Prime Loans (Excluding Government-Guaranteed Loans), by Modification Action and Size of Payment Reduction

Monthly payment reduction	Payment reduction (1)		Rate reduction (2)		Balance reduction (3)		Capitalization (4)		Term extension (5)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	12%		12%		11%		13%		14%	
Less than 10%	17%	13%	15%	10%	14%	7%	20%	13%	31%	9%
10% to 19%	13%	19%	13%	19%	16% ^a	4%	14%	17%	18%	12%
20% to 29%	15%	24%	14% ^a	25%	0% ^a	4%	15%	22%	20%	24%
30% to 39%	11%	17%	10%	18%	0% ^a	8%	12%	20%	10%	21%
40% to 49%	8%	14%	7%	14%	17% ^a	20%	8%	15%	6%	20%
50% to 59%	9%	8%	8%	9%	19% ^a	35%	9%	7%	7%	10%
60% or more	10%	5%	9%	5%	12% ^a	23%	9%	4%	9%	4%
Observations	14448		13928		568		10900		4470	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

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^aThe estimate is not statistically significant at the 10 percent level.

Table 35: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 Months of Modification) for FHA Loans, by Modification Action and Size of Payment Reduction

Monthly payment reduction	Payment reduction (1)		Rate reduction (2)		Capitalization (3)		Term extension (4)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	22%		22%		21%		19%	
Less than 10%	26%	45%	26%	44%	26%	45%	27%	31%
10% to 19%	20%	40%	19%	41%	19% ^a	40%	18%	48%
20% to 29%	16%	11%	16%	11%	15%	10%	15%	15%
30% to 39%	11%	3%	11%	3%	12%	3%	7%	4%
40% to 49%	4%	1%	5%	1%	7%	1%	5%	1%
50% to 59%	0%	0% ^b	0%	0% ^b	0%	0% ^b	0%	0% ^b
60% or more	12% ^a	0% ^b	13% ^a	0% ^b	12% ^a	0% ^b	NA	NA
Observations	9939		9728		9770		5946	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Notes:

Estimates are not available for balance reduction due to insufficient data.

NA = not available.

^aThe estimate is not statistically significant at the 10 percent level.

^bThe values are less than 1 percent.

Table 36: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 Months of Modification) for VA Loans, by Modification Action and Size of Payment Reduction

Monthly payment reduction	Payment reduction (1)		Rate reduction (2)		Capitalization (3)	
	Redefault	Loans	Redefault	Loans	Redefault	Loans
Baseline redefault	15%		15%		15%	
Less than 10%	15%	39%	13%	38%	14%	40%
10% to 19%	18% ^a	42%	19% ^a	43%	20% ^a	42%
20% to 29%	11% ^a	14%	9% ^a	14%	6% ^a	14%
30% to 39%	10% ^a	3%	27% ^a	3%	16% ^a	3%
40% to 49%	0%	1%	0%	1%	0%	1%
50% to 59%	21% ^a	0% ^b	0% ^a	0% ^b	NA	NA
60% or more	19% ^a	0% ^b	2% ^a	0% ^b	0% ^a	0% ^b
Observations	921		900		894	

Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

Notes:

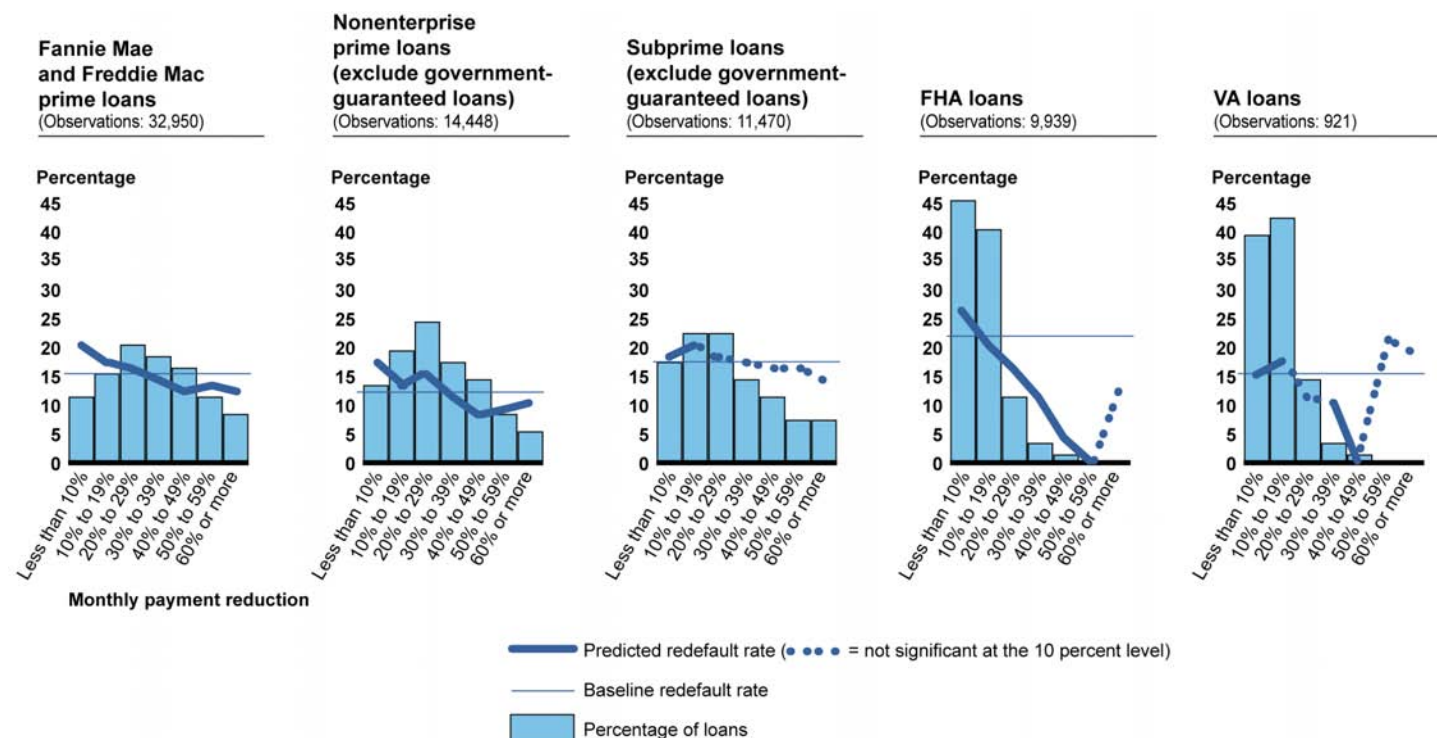
Estimates are not available for balance reduction and term extension due to insufficient data.

NA = not available.

^aThe estimate is not statistically significant at the 10 percent level.

^bThe values are less than 1 percent.

Figure 25: Predicted Redefault Rates and Distribution of Payment Reductions (within 6 Months of Modification), by Loan Type and Size of Payment Reduction



Source: GAO analysis of data from CoreLogic and its Home Price Index and the Bureau of Labor Statistics.

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Appendix VI: Comments from the Department of Treasury



DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220

ASSISTANT SECRETARY

June 19, 2012

Mathew J. Scire
Director
Financial Markets and Community Investment
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Scire:

The Department of the Treasury (Treasury) welcomes the opportunity to comment on your draft report regarding foreclosure mitigation titled "*Foreclosure Mitigation, Agencies Could Improve Effectiveness of Federal Efforts with Additional Data Collection and Analysis*" (Draft Report).

GAO's Draft Report provides constructive insight to the current condition of the U.S. housing market and foreclosure mitigation efforts by federal and nonfederal entities. Treasury appreciates GAO's acknowledgement of the leading role that Treasury's Making Home Affordable (MHA) program has played in helping to repair the housing market, including actively engaging with other federal and nonfederal agencies. As you note in the report, the Home Affordable Modification Program (HAMP) has helped over one million struggling families permanently modify their mortgage loans and remain in their homes, and has set standards that have helped change the mortgage servicing industry. The Draft Report also recognizes that servicers have modified nearly one million additional loans under programs administered by the Departments of Agriculture and Veterans Affairs, Federal Housing Administration (FHA), and Fannie Mae and Freddie Mac. Between 2009 and 2011, servicers modified a total of about four million mortgages under federal and proprietary programs.

HAMP has established important benchmarks for the mortgage industry that have greatly improved the level of assistance provided to homeowners. Data shows that HAMP offers some of the most sustainable modifications available to homeowners today, and since its launch has improved the affordability and sustainability of modification programs throughout the mortgage industry.

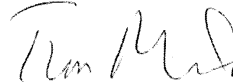
The Draft Report recognizes that Treasury's programs have proven to be critical foreclosure prevention tools. However, Treasury realizes that the housing market remains fragile and there is still much work to be done. This is why we recently enhanced MHA by extending the deadline for the program to allow borrowers still in need of relief more time to take advantage of available opportunities and expanding eligibility requirements to reach a broader pool of distressed borrowers. These enhancements, along with additional expanded opportunities made available by the Obama Administration, will help the housing market recover faster from an unprecedented crisis.

While the Draft Report notes that for as many borrowers who received a permanent HAMP modification (approximately 933,000 through December 2011), just about as many homeowners have either been unable to receive a HAMP permanent modification or have had their trial or permanent loan modification cancelled, we believe it is important to highlight that the vast majority of trial modifications cancelled occurred before Treasury implemented guidance in June 2010 requiring servicers to obtain full income documentation prior to beginning a trial period plan. Since June 2010, 86 percent of trial modifications started have converted to permanent modifications. In addition, our survey data indicates that less than one-third (28 percent) of cancelled HAMP trial modifications entered the foreclosure process, with 40 percent beginning an alternative modification or payment plan, and 9 percent obtaining a short sale or deed-in-lieu of foreclosure.

The Draft Report also notes that with respect to the FHA Short Refinance Program, Treasury should update its participation estimates to reassess the terms of its letter of credit facility with FHA and consider seeking modifications to ensure that it meets Treasury's needs in a cost-effective manner. The FHA has recently changed the FHA Short Refinance Program guidance to alter the amount that can be refinanced and this change may impact program participation. Treasury is currently evaluating the impact of this change and we will take your recommendation into consideration.

Treasury values GAO's analysis of the condition of the housing market and efforts to mitigate foreclosures, and looks forward to continuing work with you and your team as we strive to address these difficult matters.

Sincerely,



Timothy G. Massad
Assistant Secretary for Financial Stability

Appendix VII: Comments from the Department of Housing and Urban Development



ASSISTANT SECRETARY FOR HOUSING-
FEDERAL HOUSING COMMISSIONER

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
WASHINGTON, DC 20410-8000

JUN 15 2012

Mr. Mathew J. Scirè, Director
Financial Markets and Community
Investment
Government Accountability Office
441 G Street, NW
Washington, DC 20548-0001

Dear Mr. Scirè:

Thank you for the opportunity to comment on the draft GAO-12-269 Report entitled, "Foreclosure Mitigation: Agencies Could Improve Effectiveness of Federal Efforts With Additional Data Collection and Analysis." This letter conveys HUD's response to the audit. Technical comments on this draft have already been sent to GAO.

With regards to the recommendations found in the report, FHA's specific responses to each are below. But at the outset, it should be noted that FHA agrees with the GAO's recommendations and is either currently working toward the achievement of those recommendations, or has plans to do so in the very near future.

Recommendation:

To help ensure Treasury is making effective and efficient use of its resources, Treasury and FHA should update their estimates of participation in the FHA Short Refinance program given current participation rates and recent changes to the program.

HUD Response:

FHA agrees with the recommendations that relate to the Short Refinancing. However, the audit indicates that through December 2011, there were only 646 endorsed Short Refi loans (page 32). Since then as a result of changes HUD has made to the program, activity in this program has increased and in less than 6 months, the number of loans has more than doubled. FHA has endorsed 1303 loans as of June 1, 2012.

Recommendation:

To more fully understand the strength and risks posed by foreclosure mitigation actions and protect taxpayers from absorbing avoidable losses to the maximum extent possible, we recommend that FHA, VA and USDA conduct periodic analyses of the effectiveness and the long-term costs and benefits of their loss mitigation strategies and actions. These analyses should consider:

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(a) the redefault rates associated with each type of home retention action and
(b) the impact that loan and borrower characteristic have on the performance of different home retention actions. The agencies should use the results from these analyses to reevaluate their loss mitigation approach and provide additional guidance to servicers to effectively target foreclosure mitigation actions. If FHA, VA and USDA do not maintain data needed to consider this information, they should require services to provide it.

HUD Response:

FHA agrees with the recommendations pertaining to loss mitigation.

We appreciate the efforts of the GAO to review our progress and suggest future recommendations to strengthen our foreclosure mitigation process.

Sincerely,



Carol J. Galante
Acting Assistant Secretary for Housing-
Federal Housing Commissioner

Enclosure

Appendix VIII: Comments from the Department of Veterans Affairs



DEPARTMENT OF VETERANS AFFAIRS
Washington DC 20420

June 15, 2012

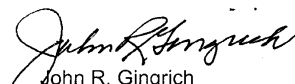
Mr. Mathew J. Scire
Director
Financial Markets and Community Investment
U.S. Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Scire:

The Department of Veterans Affairs (VA) has reviewed the Government Accountability Office's (GAO) draft report, ***"FORECLOSURE MITIGATION: Agencies Could Improve Effectiveness of Federal Efforts with Additional Data Collection and Analysis"*** (GAO-12-296) and concurs with GAO's findings.

The enclosure specifically addresses GAO's recommendation and provides an action plan. VA appreciates the opportunity to comment on your draft report.

Sincerely,


John R. Gingrich
Chief of Staff

Enclosure

Enclosure

Department of Veterans Affairs (VA) Comments to
Government Accountability Office (GAO) Draft Report:
***FORECLOSURE MITIGATION: Agencies Could Improve Effectiveness of
Federal Efforts with Additional Data Collection and Analysis***
(GAO-12-296)

GAO Recommendation: To more fully understand the strengths and risks posed by foreclosure mitigation actions and protect taxpayers from absorbing avoidable losses to the maximum extent possible, we recommend that VA conduct periodic analyses of the effectiveness and the long-term costs and benefits of their loss mitigation strategies and actions. These analyses should consider (a) the redefault rates associated with each type of home retention action and (b) the impact that loan and borrower characteristics have on the performance of different home retention actions. The agencies should use the results from these analyses to reevaluate their loss mitigation approach and provide additional guidance to servicers to effectively target foreclosure mitigation actions. If VA does not maintain data needed to consider this information, they should require servicers to provide it.

VA Response: Concur. Regarding recommendation (a), the Veterans Benefits Administration (VBA) will collect and analyze data on redefault rates and determine how those results would be appropriately coordinated into the Home Loan program's loss mitigation approach, and into the guidance that the program provides to servicers in that regard. VBA will determine the level of effort and associated costs required to conduct such periodic analyses, and then baseline the schedule for the remainder of the work. VBA expects that the determination of the level of effort and costs will be completed by October 31, 2012.

Regarding recommendation (b), VBA expects a higher and very significant level of effort would be required to design and implement the recommended analysis. VBA also notes that the end product of such analysis may likely be data, which would suggest or support program policy that would segment and negatively impact Veteran borrowers in a manner incongruous with VA's mission. An assessment of the correlation between borrower and loan characteristics and effective loss mitigation options may yield data which show, for example, that low income Vietnam Veterans in Michigan have a markedly lower success rate for completion of repayment plans, or a markedly higher rate of frequent, repeated loan modifications. From a purely fiscal perspective, such data would suggest that the policy option would be to discontinue offering repayment plans and loan modification options to Vietnam Veterans in Michigan, and instead, push such Veterans into short-sale or deed-in-lieu options from the onset of default and loss mitigation intervention. This is problematic for VA. If lenders knew that from the onset, VA's policy for loss mitigation was to encourage short-sales and deeds-in-lieu for a segment of borrowers (Vietnam Veterans in Michigan), those lenders would create automatic credit-overlays in their loan underwriting process. This would penalize a segment of the Veteran population, merely for their period of service and choice of state residence. This would be antithetical to VA's mission to serve all Veterans equally, and to ensure that all Veterans have the ability to obtain a home using their earned home

Enclosure

Department of Veterans Affairs (VA) Comments to
Government Accountability Office (GAO) Draft Report:
***FORECLOSURE MITIGATION: Agencies Could Improve Effectiveness of
Federal Efforts with Additional Data Collection and Analysis***
(GAO-12-296)

loan guaranty benefit, and for them to retain that home during times of financial hardship. Additionally, as VA administers one of the only non-downpayment loan programs in the marketplace, any additional credit overlays would unduly restrict Veterans' access to use of their earned benefit.

As such, the Home Loan program will first conduct a formal assessment of the parameter and scope of analysis, as well as the resources needed to undertake an analysis of loan and borrower characteristics, and the impact those elements may have on loss mitigation options. VBA expects that the analysis of scope, parameters, resources and potential benefit will be completed by December 31, 2012.

Appendix IX: Comments from the Federal Housing Finance Agency



Federal Housing Finance Agency

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June 15, 2012

Mathew J. Scire
Director
Financial Markets and Community Investment
Government Accountability Office
441 G Street, NW
Washington, DC 20548

Dear Mr. Scire:

Thank you for the opportunity to comment on the Government Accountability Office (GAO) draft study, Foreclosure Mitigation: Agencies Could Improve Effectiveness of Federal Efforts with Additional Data Collection and Analysis. Having also devoted substantial time and resources to studying, developing, and improving a range of approaches to addressing the mortgage crisis, the Federal Housing Finance Agency (FHFA) appreciates GAO's extensive work to understand the complexity and challenges. FHFA generally agrees with GAO's findings and its recommendation for FHFA. As GAO suggests, FHFA is moving expeditiously to complete its analysis and make a final decision about Enterprise adoption of Principal Reduction Alternative (PRA) modifications under Treasury's Home Affordable Modification Program (HAMP).

That said, FHFA believes it important that GAO clarify that HAMP PRA would not expand the numbers of borrowers who are eligible to obtain modifications under HAMP programs. The eligibility requirements for both the original HAMP modifications and HAMP PRA are the same. HAMP PRA would change modified loan terms, but not the required monthly payments, nor program effectiveness from the standpoint of numbers of eligible borrowers.

FHFA intends to release its updated analysis of principal forgiveness in the near future. As GAO states, FHFA will address many of the issues raised about earlier versions of that analysis. The analysis initially focused on simple comparisons of the relative costs of principal forgiveness and principal forbearance as modification approaches. In April 2012, FHFA provided new analysis that looked specifically at standard HAMP and HAMP PRA modifications. A standard HAMP modification provides for principal forbearance if rate reductions and term extensions are not sufficient to reduce a borrower's housing debt-to-income ratio (DTI) to 31 percent. HAMP PRA initially provides for principal forgiveness, which is potentially augmented with rate reductions, term extensions, and principal forbearance to achieve the same reduction to a 31 percent DTI.

While GAO cites as FHFA's estimate that nearly 700,000 severely underwater borrowers could potentially benefit, FHFA believes the actual number of borrowers that would receive such modifications would be substantially lower. The 700,000 figure assumes a 100 percent take-up rate, and a debt-to-income ratio above 31 percent as the only eligibility criterion. FHFA believes that with the application of additional HAMP eligibility criteria and expected take-up rates, the number of borrowers would be approximately one-third of that figure.

FHFA continues to work with the Enterprises to focus resources on the most effective approaches to helping borrowers remain in their homes, through

- improvements in the Home Affordable Refinance Program (HARP), to allow more borrowers who are current on their mortgages to refinance at favorable rates and reduce their housing costs,
- improvements in the requirements for servicers' handling of borrowers in the early stages of delinquency, to provide appropriate remedies on a timely basis, and
- use of standardized Enterprise proprietary modifications to provide alternatives for borrowers who don't qualify for HAMP.

Additionally, FHFA is working to expedite short sales and deeds-in-lieu programs for borrowers where home retention is not a viable option.

The table that illustrates the various types of modifications provided since the inception of HAMP does not distinguish between Enterprise and non-Enterprise HAMP modifications. As a result, the graphic suggests that the only modifications supported by the Enterprises are proprietary modifications. In fact, more than half of HAMP loan modifications are on Enterprise loans. Collectively, Enterprise HAMP and Enterprise proprietary modifications represent the majority of modifications performed today. The distinction between the two types of HAMP modifications is simply that the Enterprises pay HAMP program incentives to servicers and borrowers for their HAMP modifications, while the Treasury pays them to the non-Enterprise investors.

FHFA also wishes to highlight the importance of the recently aligned Enterprise proprietary modification programs. The proprietary modifications primarily target payment reductions for borrowers who have not qualified for trial or permanent HAMP modifications. The proprietary modifications are designed to assist those borrowers who cannot qualify for or take advantage of HAMP, including issues of documentation and debt-to-income ratios. Recognizing the value of Enterprise proprietary modifications, Treasury has announced a similar alternative modification program for non-Enterprise loans, known as HAMP Tier 2.

FHFA agrees that the extent of payment reduction for the borrower is the most important factor affecting the success of loan modifications, lowering the probability of default on the modified loan. As GAO recognizes, while the effectiveness of payment reductions--the objective of standard HAMP modifications--is clear, the specific effectiveness of principal forgiveness is uncertain.

Page 3

FHFA's April analysis considered the impact of Treasury payments to subsidize the cost of principal forgiveness, previously available only to investors other than the Enterprises. In this analysis, to be supplemented by information FHFA will soon release, Treasury subsidy payments offset the Enterprise cost of principal forgiveness, but provide negligible savings, at best, from the standpoint of the federal government, since Enterprise losses reflect a potential draw on the Treasury, and Treasury payments are equivalent.

In its forthcoming release, FHFA will also discuss further the expense and risks of, and time required for, implementation of a modification program involving principal forgiveness. A model-based economic analysis cannot address these crucial considerations.

Recognizing the GAO's focus on principal forgiveness, FHFA notes that GAO does not raise the issue in connection with FHA, VA, and USDA programs. GAO may wish to explain the different emphasis for the Enterprises, or provide additional discussion with respect to the other programs.

Again, thank you for the opportunity to comment on this study. Please contact me if you have any additional questions.

Sincerely,



Meg Burns
Senior Associate Director
Office of Housing and Regulatory Policy

Appendix X: GAO Contact and Staff Acknowledgments

GAO Contact

Mathew J. Scirè, (202) 512-8678, or sciremj@gao.gov

Staff Acknowledgments

In addition to the individual named above, Harry Medina, Assistant Director; Anne Akin; Serena Agoro-Menyang; Don Brown; Steve Brown; Tania Calhoun; Emily Chalmers; DuEwa Kamara; John Karikari, Patricia MacWilliams; John McGrail; Marc Molino; Christine Ramos; Beverly Ross; Jessica Sandler; Andrew Stavisky; and James Vitarello made key contributions to this report.

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