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**Finance and Economics Discussion Series
Divisions of Research & Statistics and Monetary Affairs
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**Designing Loan Modifications to Address the Mortgage Crisis and
the Making Home Affordable Program**

**Larry Cordell, Karen Dynan, Andreas Lehnert, Nellie Liang, and
Eileen Mauskopf**

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Designing Loan Modifications to Address the Mortgage Crisis and the Making Home Affordable Program

Larry Cordell, Karen Dynan, Andreas Lehnert, Nellie Liang, and Eileen Mauskopf

ABSTRACT

Delinquencies on residential mortgages and home foreclosures have risen dramatically in the past couple of years. The mortgage losses triggered a broad-based financial crisis and severe recession, which, in turn, exacerbated the initial financial distress faced by homeowners. Although servicers increased their loss mitigation efforts as defaults began to mount, foreclosures continued to occur in cases where both the borrower and investor would be better off if such an outcome were avoided. The U.S. government has engaged in a number of initiatives to reduce such foreclosures. This paper examines the economic underpinnings of the Administration's loan modification program, the Home Affordable Modification Program (HAMP). We argue that HAMP should help many borrowers avoid foreclosure, as its key features—a standardized protocol, incentive fees for servicers, and a requirement that the first lien mortgage payment be reduced to 31 percent of gross income—alleviate some of the previous obstacles to successful modifications. That said, HAMP is not well-suited to address payment problems associated with job loss because the required modification in such cases would often be too costly to qualify for the program. In addition, the focus of the program on reducing the payments associated with the mortgage rather than the principal of the mortgage may limit its effectiveness when the homeowner's equity is sufficiently negative. In this case, recent government efforts to establish a protocol for short sales should be a useful tool in avoiding costly foreclosure.

ABOUT THE AUTHORS

Cordell is from the Federal Reserve Bank of Philadelphia, Dynan is from the Brookings Institution, and Lehnert, Liang and Mauskopf are from the Board of Governors of the Federal Reserve System. We thank Phillip Comeau, Virginia Gibbs, Mark McArdle, Laurie Maggiano, and Clare Rowley as well as staff at servicers, mortgage insurance companies, asset managers, and various agencies for helpful discussions and comments. We are also grateful for research assistance from Michael Mulhall. The views expressed in this paper are those of the authors and do not necessarily represent the views of the Federal Reserve Board, the Federal Reserve Bank of Philadelphia, the Brookings Institution, or their staffs. Contact author: Nellie Liang at JNellie.Liang@frb.gov.

Designing Loan Modifications to Address the Mortgage Crisis and the Making Home Affordable Program

I. Overview

Large and uncertain credit losses on U.S. mortgages have contributed importantly to the global financial turmoil and economic slump of the past couple of years. As house prices began to fall from their record peaks in mid-2006 and mortgage delinquencies started to climb, the mortgage credit boom seen earlier this decade began to taper off. Conditions in housing finance became progressively worse as house price declines ate into housing equity and lending standards tightened. A subsequent collapse in the value of private mortgage-backed securities and their derivatives severely damaged perceptions about the solvency of financial institutions, which led to broad-based pullbacks in credit availability to each other, and to households and businesses. Delinquencies rose further as reduced spending and production led to job losses. Efforts to shore up the housing market and attenuate the surge in delinquencies (and thus eliminate a major factor in the deterioration of the macroeconomy) were impeded by the inability of mortgage servicers to cope with the scale of the problem. The result has been an unprecedented rise in home foreclosures.

Foreclosures have potentially serious negative economic spillovers, and can be costly not only to households but also to local and broader housing markets. Further, as has been painfully illustrated in recent years, foreclosures may cause outsized damage to the banking system, and, indeed, to credit markets more generally, with far-reaching implications for the functioning of the macroeconomy.

Although servicers increased their loss mitigation efforts as defaults mounted, foreclosures continued to occur in cases where both the borrower and investors would be better off if such an outcome were avoided. As discussed in Cordell, Dynan, Lehnert, Liang, and Mauskopf (2009), the costs of loss mitigation are high and servicers have little

financial incentive to invest heavily in the staff and technology to provide these services.¹ Moreover, lack of clear guidance about acceptable loan modifications, uncertainty about the success of modifications, conflicting interests of different investors, and the high incidence of junior liens have been important obstacles.

In response to rising foreclosures and servicer constraints, the U.S. government has engaged in a number of initiatives to reduce unnecessary foreclosures. The most comprehensive initiative to date is the Administration's Making Home Affordable (MHA) program, which is part of the Housing Affordability and Stability Plan (HASP) announced in February 2009. This paper examines the economic underpinnings of the loan modifications offered in the Home Affordable Modification Program (HAMP), one of two key MHA sub-programs, with a focus on how HAMP addresses many of the obstacles faced by servicers—in part by using government funds—in their earlier efforts to implement loan modifications.

The paper begins with some background on recent foreclosures and a summary of economic research on the private and social costs of foreclosures. It then discusses why borrowers default and enter foreclosure, why servicers have been slow to pursue alternatives to foreclosure, and it presents some evidence on the rate at which borrowers defaulted on loans modified prior to the introduction of the HAMP. It then describes how the design of HAMP was shaped by these considerations, for example, through the types of modifications provided and through fees paid to servicers, investors, and borrowers. Since loan modifications are only one tool used by policymakers to address the mortgage crisis, we also discuss briefly some other policies to provide attractive refinancing alternatives and lower mortgage rates, including the Home Affordable Refinance Program (HARP), the other key sub-program of MHA, and the latest effort to assist troubled borrowers, a provision for short-sales and deeds-in-lieu of foreclosure.

While servicers were initially slow to sign up for HAMP, 47 servicers covering the majority of eligible mortgages were offering modifications under the program by August

¹ Larry Cordell, Karen Dynan, Andreas Lehnert, Nellie Liang, and Eileen Mauskopf “The Incentives of Mortgage Servicers: Myths and Realities” in *Uniform Commercial Code Law Journal*, Spring 2009.

2009. The U.S. Treasury announced in August that the program is on track to reach 3 to 4 million homeowners over the next few years, and, as of early September, more than 570,000 trial modification offers had been extended and about 360,000 trials were started.² We believe that HAMP's streamlined and standardized protocol, incentive fees for servicers, and requirement that the first-lien mortgage payment be reduced to at most 31 percent of gross income will alleviate many of the obstacles to successful modifications that have plagued other modification schemes, and thus that the program will help many borrowers avoid foreclosure.

Nonetheless, millions of foreclosures are likely to occur over the next couple of years. House price declines have led to a sharp deterioration in the financial situation of many homeowners, leaving them less willing or able to afford even reduced mortgage payments. Further, HAMP modifications are not well-suited to address many cases where homeowners have suffered a large temporary decline in income, as might be the result of job loss. In particular, because the modification calls for a reduction in the ratio of payments to income based on the *current* level of income, a reduction that would not be reversed if income were to return to its previous level, the required modification in such cases will often be too costly to qualify the program.

In addition, the program may not be very effective when the value of the mortgage greatly exceeds the value of the home. Some borrowers who believe that there is little prospect for house prices to recover enough to put the mortgage "above water" within some reasonable period of time will not participate in the program and instead walk away from their mortgages. Worse yet, other borrowers may shift beliefs only after entering the program; these borrowers are likely to default after many of the costs associated with the modification have already been borne.

Notwithstanding these shortcomings, the Treasury Department is closely monitoring the progress of HAMP and considering adjustments and extensions. For example, features have recently been added to HAMP that should facilitate short sales and thus help to

² See http://makinghomeaffordable.gov/pr_08042009.html and http://www.financialstability.gov/latest/tg_279.html

avoid costly foreclosures. Thus, there is the potential for resources to be redirected as needed to further reduce the costs of foreclosures.

II. Rising foreclosures, costs, and spillovers

The performance of mortgages has deteriorated sharply and foreclosures have risen dramatically over the past few years (Table 1). In 2007, lenders initiated more than 1-1/2 million foreclosures, up from an average pace of less than 1 million over the preceding 3 years. In 2008, foreclosure starts jumped to more than 2-1/4 million. With various foreclosure moratoria expiring in early 2009, the pace at which foreclosures were initiated shot up further, averaging 750,000 per quarter, or 3 million at an annual rate, over the first half of the year. The rise in foreclosures was disproportionately accounted for by subprime mortgages in the early part of the crisis, but more recently has been driven by prime mortgages, as a broader swath of households has been affected by the tightening of credit conditions and especially by the elevated pace of job loss.

Table 1. Foreclosures Started and in Inventory, for Subprime and Prime Mortgages
(Thousands of loans)

Date	Foreclosures started during period			Foreclosure inventory at end of period		
	Subprime	Prime	Total	Subprime	Prime	Total
2004	362	307	928	256	198	623
2005	406	295	891	246	175	546
2006	549	322	1033	349	215	667
2007	871	564	1592	614	418	1,139
2008	1,109	1,056	2,359	885	801	1,824
2009:Q1	291	397	755	897	1,052	2,121
2009:Q2	251	425	750	913	1,262	2,371

Notes. Data are calculated based on foreclosure rates from the Mortgage Bankers Association National Delinquency Survey and staff estimates of the number of loans serviced. Not seasonally adjusted. Total includes FHA, VA, and loans not elsewhere classified.

The costs of this rise in foreclosures are substantial. Historically, about half of foreclosure starts have resulted in borrowers losing their properties, and—given the current weak financial situations of U.S. households and the strains facing mortgage servicers—the proportion is likely to be higher in the current crisis. Families that are displaced are likely to have depleted their financial resources and impaired their credit and thus likely to have difficulty relocating. If they are forced to move significant distances, they may lose their jobs and suffer other disruptions to family life.

Neighbors and communities can also suffer when a property is foreclosed upon. Clusters of vacant properties are often associated with higher rates of vandalism and crime, and lower house prices throughout the neighborhood. Municipal governments may have to spend more to address these problems and may be strained by the lower tax revenue associated with lower house prices. More broadly, high rates of foreclosure are adding to the oversupply of housing, reinforcing the weakness in the housing sector, and, in turn, presenting a significant hindrance to economic recovery.

The completion of a foreclosure can also impose costs on financial institutions. In the current environment, many such properties are either sold at a considerable loss or remain on lenders' books, adding to the already considerable strains faced by these institutions. Estimates of loss severities, that is, the percent of a loan's balance that is lost in a foreclosure, have increased significantly in the past 18 months and now are close to 50 percent for prime, 60 percent for near prime, and more than 70 percent for subprime mortgages (these figures exclude certain costs, so the actual loss is even higher).³ Even if government efforts successfully damp the rate at which foreclosures are initiated, many foreclosures are in the pipeline now; as seen in Table 1, the number of loans at some stage in the foreclosure process stood at 2.4 million in mid-2009, up from about 0.7 million at the end of 2006.

Quantifying the deadweight costs of a foreclosure is difficult and most studies, to date, focus only on selected aspects of the problem. Several recent papers provide analysis of

³ Amherst Securities Group LP. Amherst Mortgage Insight, September 10, 2009, page 2. See also Citi, "All the King's Horses – Will They Succeed this Time?" *MBS and Real Estate ABS*, June 26, 2009.

the effects of foreclosure on the prices of neighboring home prices. These papers attempt to quantify the so-called “foreclosure discount”—the degree to which foreclosed-upon properties fetch less than equivalent properties in a standard sale—as well as the effect on neighboring house prices of a foreclosure-related, rather than standard, sale. The foreclosure discount may be evidence of a deadweight social cost if it stems from suboptimal maintenance (or outright vandalism) of properties. If vacant and poorly maintained foreclosed-upon properties push down prices of nearby homes, this is a clear deadweight loss because these homeowners suffer a loss without any other party enjoying a corresponding benefit.

Campbell, Giglio and Pathak (2009) estimate both the foreclosure discount and spillover effects.⁴ Using a dataset of residential property transactions in Massachusetts from 1987 to 2008, they identify standard sales as well as forced sales resulting either from a foreclosure or from the death or bankruptcy of the homeowner. They find that the foreclosure stigma is significant; foreclosure-related forced sales take place at prices 28 percent below equivalent standard sales. (Forced sales from death have a smaller discount.) Campbell et al do not find that a large share of forced sales affects average price movements at the Zip code level. However, they find that forced sales do depress nearby house prices. That is, foreclosures depress prices of houses within a few blocks, but not those located farther away. The finding that foreclosures depress the value of nearby properties is consistent with the findings in several other studies, including Harding, Rosenblatt and Yao (2008), Duda and Apgar (2005) and Immergluck and Smith (2006).⁵

While most studies find relatively small, and highly localized, spillover effects of distressed sales on neighboring properties, these effects could still be quite large in the

⁴ Campbell, John Y., Stefano Giglio and Parag Pathak (May 2009) “Forced Sales and House Prices,” Joint Center for Housing Studies, Harvard University, Working Paper 09-4.

⁵ Harding, John P., Rosenblatt, Eric and Yao, Vincent W. (2008) “The Contagion Effect of Foreclosed Properties” *Journal of Urban Economics*, Forthcoming. Duda, Mark and William C. Apgar (December 2005) “Mortgage Foreclosures in Atlanta: Patterns and Policy Issues” Manuscript, NeighborWorks America, Washington DC. Immergluck, Dan and Geoff Smith (2006) “The Impact of Single-Family Mortgage Foreclosures on Neighborhood Crime,” *Housing Studies* 21, 851—866.

aggregate if foreclosures become sufficiently prevalent. In a study of housing transactions in California, Leventis (2009) documents that, as of 2009:Q1, close to half of all sales in California followed within a year of a foreclosure notice (thus these sales could be REO dispositions or short sales).⁶ Computing house price indexes excluding these forced sales produces values that range from almost zero to 5.8 percentage points higher than indexes including these forced sales. These effects can be thought of as lower bounds because the incidence of foreclosures is still rising, and non-distressed sellers may be holding their homes off the market until the transitory depressing effect of the California foreclosure wave passes.

As of early 2009, foreclosures still appeared to be occurring in cases where both the borrower and lender would be better off if such an outcome were avoided (Cordell, Dynan, Lehnert, Liang, and Mauskopf, 2009). The substantial deadweight losses associated with these foreclosures provide a justification for significant policy interventions.

III. The Underlying Problems

To design appropriate policies aimed at preventing avoidable foreclosures, one needs first to understand the forces behind the sharp rise in foreclosure starts over the past couple of years. We categorize these forces as economic problems of borrowers and of mortgage servicers.

A. Economic problems of mortgage borrowers. The foreclosure wave reflects increased payment problems owing to various factors. Some borrowers may have taken on mortgages with high payments relative to income—either borrowing at high rates or borrowing too much relative to their ability to pay—because they planned to cash out equity, refinance, or sell the house in short order. Any such plans were likely thwarted as declines in house prices sapped equity, lending standards tightened, and home sales fell sharply. Another group of borrowers with interest-only or pay-option ARMs have faced increases in their monthly mortgage payments as the loans have recast to fully

⁶ Leventis, Andrew (May 2009) “The Impact of Distressed Sales on Repeat-Transactions House Price Indexes,” manuscript, Federal Housing Finance Agency, Washington DC.

amortizing. Other borrowers have faced job loss or cutbacks in their hours worked, and the resulting reduction in their financial resources has forced them into delinquency status.

Another factor contributing to the rise in defaults and foreclosures has been a dramatic increase in the number of households with negative housing equity; that is, the combined balance of all of their mortgages exceeds the value of the underlying property. As of summer 2009, some estimates put the number of U.S. households that are “underwater” with their mortgages as high as 14 million, or 27 percent of U.S. homeowners with mortgages in 2009:Q1.⁷ In part, this striking figure reflects the very large declines in home prices—indeed, readings from the S&P/Case-Shiller home price indexes imply that aggregate U.S. home prices are now down more than 30 percent from their peak in 2006. It also reflects very low levels of initial equity for many mortgages originated at the height of the mortgage credit boom in 2006. For example, Mayer, Pence, and Sherlund (2009) find that the median combined loan-to-value ratio for subprime purchase loans rose from 90 percent in 2003 to 100 percent in 2005.⁸

Sherlund (2008) and Gerardi, Lehnert, Sherlund, and Willen (2008) and others find that the level of housing equity is an economically and statistically significant determinant of mortgage defaults.⁹ However, this finding does not imply necessarily that the rise in defaults was primarily driven by “investment” considerations as opposed to economic troubles among homeowners. Studies suggest equity positions matter most for default rates when they interact with other contributing factors. For example, Foote, Gerardi, Goette, and Willen (2009) found that borrowers are more likely to default when house

⁷ Deutsche Bank “Drowning in Debt- A Look at ‘Underwater’ Homeowners,” August 5, 2009.

⁸ Christopher Mayer, Karen Pence, and Shane M. Sherlund (2009), “The Rise in Mortgage Defaults,” *Journal of Economic Perspectives*, 23(1), pp. 27-50.

⁹ Shane M. Sherlund (2008). “The Past, Present, and Future of Subprime Mortgages” Finance and Economics Discussion Series 2008-63, Federal Reserve Board, Washington, DC. <http://www.federalreserve.gov/pubs/feds/2008/200863/200863pap.pdf> . Also Gerardi, Kristopher, Andreas Lehnert, Shane M. Sherlund, and Paul S. Willen (Fall 2008) “Making Sense of the Subprime Crisis” *Brookings Papers on Economic Activity* 69-145.

prices have fallen and incomes decline.¹⁰ Such “double trigger” defaults may reflect the difficulty of justifying continued payments on a mortgage whose balance significantly exceeds the value of the house when the family budget is strained.

B. Economic problems of mortgage servicers. Some foreclosures might have been averted if mortgage servicers had responded vigorously with mortgage modifications. Modifications have risen in recent years, but, as discussed in Cordell, Dynan, Lehnert, Liang, and Mauskopf (forthcoming), they have not kept pace with the increase in distress among homeowners.¹¹ Data from the Office of the Controller of the Currency show that the annualized pace of workouts at the largest banks increased by 540,000 to 1.3 million in the first quarter of 2009 relative to a year earlier, but that seriously delinquent loans at these banks increased over the same period by almost 800,000. Based on data extrapolated from surveys, HOPE NOW reports that the annualized pace of workouts for the industry as a whole increased about 800,000 to 2.5 million over the four quarters ending in 2009:Q1, while the pool of delinquent loans rose over the same period by 1.2 million, to 2.9 million.

Cordell, Dynan, Lehnert, Liang, and Mauskopf (2009) point to several factors that have damped the pace of modification in recent years. To begin, modifications traditionally have been costly to mortgage servicers, as they tend to be tailored to the individual borrower and thus are labor intensive. Moreover, neither the labor costs nor the overhead costs associated with modifications are billable back to investors. In contrast, foreclosures—the main alternative to modifications when the borrower is delinquent—are substantially less costly to servicers both because the process need not require direct contact with the borrower and because many of the expenses, such as property disposition

¹⁰ Christopher L. Foote, Kristopher S. Gerardi, Lorenz Goette, and Paul S. Willen “Reducing Foreclosures” Boston Fed Public Policy Discussion Papers 09-2. <http://www.bos.frb.org/economic/ppdp/2009/ppdp0902.htm>

¹¹ Larry Cordell, Karen Dynan, Andreas Lehnert, Nellie Liang, and Eileen Mauskopf “The Incentives of Mortgage Servicers and Designing Loan Modifications to Address the Mortgage Crisis” (forthcoming) in *Lessons from the Financial Crisis: Causes, Consequences, and Our Economic Future*, Edited by Robert W. Kolb: John Wiley & Sons, Inc., Hoboken, New Jersey, (2010)

and legal expenses are billable to investors.¹² In addition, for mortgages held in private-label MBS (the lion's share of subprime and near-prime mortgages originated in recent years), the governing pooling and servicing agreements (PSAs) *require* servicers to initiate foreclosures on defaulted loans yet often provide little or no guidance on conducting alternatives to foreclosure, further reducing the economic incentive to pursue modifications.

Another obstacle to mortgage modifications has been capacity constraints at servicers. In the years leading up to the mortgage crisis, many servicers did not invest in either the staff or the technology to conduct large-scale modifications because the incidence of delinquency and the size of past losses were not high enough to justify such investments. Even after it became clear that losses were going to be significant, many servicers did not make sufficient adjustments, in some instances lacking the financial resources to do so amid the broader losses hitting financial institutions or the incentive to do so, given the much weaker long-term prospects for the subprime industry.

Servicers' efforts to modify loans have also been hindered by the presence of junior liens on many distressed loans. More than one-third of subprime adjustable-rate loans originated in 2006 are estimated to have a junior lien present at origination (Cordell, Dynan, Lehnert, Liang, and Mauskopf, 2009). In many cases, homeowners took on extra leverage using a home equity line of credit (in response to rising home values) after originating the senior loan. Holders of senior liens reportedly have been reluctant to agree to significant modifications out of worries that the modified loans might, depending on state legal traditions and local case law, be considered new loans and thus subordinate to existing junior liens. Whether such fears are warranted is unclear, as we lack data on how often such subordination occurs.¹³

¹² In practice direct "out of pocket" expenses are reimbursable to servicers, but overhead expenses (like labor) are not. It is also the case that many large servicers provide REO and legal services in separate subsidiaries, so can be recipients of these reimbursable expenses.

¹³ Note that when house prices were rising, junior lienholders routinely agreed to resubordinate their claim when the borrower refinanced the senior mortgage.

Finally, some servicers may have opted not to modify simply because they were waiting for policymakers to offer inducements to do so. Given the attention that Administration officials, Congress, and other policymakers focused on the mortgage and foreclosure crisis in 2008, servicers likely placed significant odds on such an outcome.

IV. Evidence on re-defaults of modified mortgages

Knowing the historical evidence on rates of redefault could prove very helpful in designing loan modifications or in assessing the likely outcome of the government's HAMP modifications. But, characterizing the historical performance of mortgages that have been modified and filtering this information into useable policy prescriptions is difficult for several reasons. First, loan-level data from earlier periods are not easy to obtain. Second, the performance of modified mortgages, like the performance of all mortgages, is affected by changes in house prices, income and unemployment in addition to the revised terms of the mortgage and it is difficult to disentangle the influence of these factors from the design terms of the mortgage. And, third, until recently there has been little standardization in modification types. Indeed, modifications differed significantly across servicers and across time. For example, during the era of rising home prices, servicers commonly modified delinquent loans by rolling missed payments into the loan balance and then re-amortizing the loan, resulting in higher monthly mortgage payments. With house prices declining, servicers more recently have favored modifications that lower monthly payments, although with no standardization regarding either the amount of the payment drop or how it is achieved (e.g. via interest rate reductions, term extensions, principal forbearance, or other means).¹⁴

To evaluate the nature and success of mortgage modifications prior to the establishment of HAMP, we examined the roughly 5.5 million active loans in the First American CoreLogic LoanPerformance (FACL) ABS database as of March 2009. These data track the performance of loans sold into subprime or alt-A securities. Although no provision

¹⁴ For one careful study on redefault rates, see Manuel Adelino, Kristopher Gerardi, and Paul S. Willen, "Why Don't Lenders Renegotiate More Home Mortgages? Redefaults, Self-Cures, and Securitization," Boston Fed Public Policy Discussion Papers, 09-4. <http://www.bos.frb.org/economic/ppdp/2009/ppdp0904.htm>

was originally made to track or report modifications, FACL recently started reporting information on modified loans. However, not all servicers report modification information.

In Table 2 we compare modified mortgages to other active loans. The characteristics that differ significantly between the two sets are the contract interest rates and the delinquency status. In the month prior to modification, modified loans carried contract interest rates of 8.7 percent, almost 1.2 percentage points higher than unmodified loans, and 55 percent of modified loans were seriously delinquent, as opposed to about 25 percent of all loans. Both facts suggest that servicers are modifying loans in response to borrower financial distress.

Table 2. Selected Characteristics of Modified Mortgages as of March 2009

Characteristic	All unmodified loans	Modified loans
	(as of March 2009)	(all dates)
Unpaid principal balance (dollars)†	210,678	215,869
Monthly P&I payment (dollars)†	1,309	1,544
Contract interest rate (percent)†	7.55	8.72
FICO at origination	666	617
CLTV at origination (percent)	84.3	88.0
Percent in CA/FL/AZ	34.9	34.2
Percent seriously delinquent†	25.4	54.9
Number of observations	6,153,131	555,442

†. As of the month prior to modification.

Note. Data are from the First American CoreLogic LoanPerformance ABS data, which track securitized loans in subprime and alt-A securities. Modified mortgages are identified using supplementary information published by FACL based on data provided by servicers; not all servicers' loans are reflected in these statistics. Some mortgages are modified more than once. CLTV is the reported combined loan-to-value ratio of the first and any junior liens at origination or the time of security issuance.

Table 3 reports the key characteristics of the modifications identified in the data. At the time of modification, servicers have latitude to alter principal balances, contract interest rates and monthly payments. As shown in the first panel, loan balances typically increased or were unchanged, with balances falling in only 21 percent of cases (we cannot separate outright principal forgiveness from amortization or curtailment). In the majority of reported modifications, payments fell. Moreover, the contract interest rate increased in only a few modifications.

Table 3. Distribution of Types of Mortgage Modifications as of March 2009

Type of modification	Percent of modifications
Balance	
<i>Increased</i>	64.7
<i>Decreased</i>	21.1
Monthly P&I payment	
<i>Increased</i>	17.4
<i>Decreased</i>	58.3
Contract interest rate	
<i>Increased</i>	1.7
<i>Decreased</i>	66.0
Payment status at time of modification	
<i>Current</i>	24.8
<i>Seriously delinquent</i>	54.9

Note. Balances, payments and contract rates could have remained unchanged, an excluded category not reported here. Data are from the First American CoreLogic LoanPerformance ABS data, which track securitized loans in subprime and alt-A securities. Modified mortgages are identified using supplementary information published by FACL based on data provided by servicers; not all servicers' loans are reflected in these statistics. Some mortgages are modified more than once.

Table 4 presents key modification terms for modifications that resulted in payment decreases, left the payment unchanged, or resulted in payment increases. As shown by the first set of rows, regardless of the payment change, the principal balance increased on average from before to after modification. Modifications that resulted in a payment increase had an average increase in the principal balance of 3.6 percent, from about \$220,000 to \$228,000, compared to a 2.3 percent increase for modifications that lowered monthly payments.

Table 4. Selected Characteristics of Mortgage Modifications as of March 2009

Characteristic	Type of Modification by Payment Change			
	All	Increase	No Change	Decrease
Unpaid principal balance (dollars)				
<i>Before modification</i>	215,869	220,507	211,492	216,314
<i>After modification</i>	221,408	228,338	216,861	221,239
Monthly P&I payment (dollars)				
<i>Before modification</i>	1,440	1,347	1,497	1,623
<i>After modification</i>	1,336	1,497	1,497	1,220
Contract interest rate (percent)				
<i>Before modification</i>	8.72	8.00	8.39	9.08
<i>After modification</i>	6.65	7.57	7.81	5.90
Percent current				
<i>Six months after modification</i>	40.9	32.7	40.2	44.3
<i>12 months after modification</i>	31.7	25.7	31.6	34.5
Percent seriously delinquent				
<i>Six months after modification</i>	29.3	37.3	30.4	25.9

<i>12 months after modification</i>	41.0	47.9	40.0	38.4
Number of observations	555,442	96,618	135,275	323,549

Note. Data are from the First American CoreLogic LoanPerformance ABS data, which track securitized loans in subprime and alt-A securities. Modified mortgages are identified using supplementary information published by FACL based on data provided by servicers; not all servicers' loans are reflected in these statistics. Some mortgages are modified more than once.

As shown by the next set of rows, modifications can substantially decrease payments. On average, modified mortgages that resulted in a payment decrease saw their monthly payments fall from \$1623 to \$1200, about a 25 percent reduction. Modified mortgages that resulted in a payment increase saw their monthly payments rise about 10 percent.

Interestingly, as shown by the next set of rows, mortgages that had their payments decreased had relatively high contract interest rates before modification—almost 9.1 percent on average. After modification, the average contract rate on these mortgages fell to 5.9 percent. Even modifications that resulted in payment increases saw a slight decrease in contract interest rates.

The final sets of rows display performance information on modified loans six months and 12 months after modification. Given the relatively short history of modifications, only a few modified loans have seen their twelfth month, and those that have were modified relatively early in the current modification wave. We track two measures of performance: the fraction of loans current and those seriously delinquent. (Borrowers who were one or two payments behind at 6 months or 12 months after modification would likely not fall into either of these categories.)

Two results stand out: First, the performance of loans modified as of March 2009 was poor, as only 40 percent of modified loans were current at 6 months after modification, and 29 percent were seriously delinquent. Given that loans are marked as seriously delinquent if they have missed three or more payments or are in foreclosure, such borrowers likely made only one or two payments on their modified loan.

Second, modifications resulting in a payment reduction show significantly better performance than modifications resulting in a payment increase. About 44 percent of modified loans are current if the payment decreased, while 33 percent are current if the

payment increased. However, this result should be treated with caution because there may be reasons why a modification results in a payment increase or decrease that this analysis does not take into account.

V. Initiatives to Encourage Loan Modifications before HAMP

Congress, the Bush and Obama Administrations, and industry associations offered various plans aimed at stemming the surge in foreclosures before implementing HAMP.

A. The FHASecure Program. Congress's first attempt to stabilize the subprime market after the onset of the mortgage crisis was through the FHASecure program, approved in August 2007. Borrowers with subprime adjustable-rate mortgages (ARMs) who were current or had been current on their mortgage prior to the interest rate or payment reset but were delinquent after, were offered the opportunity to refinance into an FHA fixed-rate loan. FHASecure had many complicated features that proved difficult to put into practice, such as creation of new junior liens equal to the principal forgiven on the original first-lien. Although the goal of the program was to allow 80,000 eligible loans to refinance, only 4,212 refinancings were made through November 2008 and the program was allowed to expire in December 2008.

B. The "Teaser Freezer" Program. Late in 2007, HOPE NOW, working closely with the American Securitization Forum and the U.S. Treasury, introduced a fast-track plan to help borrowers avoid interest rate resets. The "Teaser Freezer" plan allowed servicers to extend the initial, lower interest rates for an additional five years to certain borrowers with subprime adjustable-rate loans.. These streamlined modifications could be implemented easily even by servicers that did not have the staff or technology to modify the mounting number of distressed loans on a case-by-case basis. And, because the plan was designed with broad-based support from investors, the plan reduced the threat of investor lawsuits that contributed to the servicer reluctance to modify loans.

C. The Hope for Homeowners Program. Congress passed legislation in the spring of 2008 creating the Hope For Homeowners (H4H) refinancing program. The program

permitted borrowers who were delinquent to refinance into an FHA-guaranteed loan if the original lender would forgive the principal balance by an amount sufficient to achieve an LTV of 90 percent, later revised to 96.5 percent, based on new appraisal values. The incentive to the lender was pitched as one of avoiding the possibility of later and more costly default on the mortgage. The borrower would agree to share any future house price appreciation with the FHA. The plan also provided that second liens would be extinguished, either by an upfront payment or through a share of the FHA's take on house price appreciation. The program had an extremely low take-up rate, largely because lenders and investors were not willing to write down principal. In addition, servicers complained about the complexity of the program, and the mortgage rates offered were relatively high. The program was subsequently revised, most recently in the Helping Families Save Their Homes Act, signed on May 20, 2009. The revised program provides the Department of Housing and Urban Development (HUD) with significantly more discretion in program design. Among the changes, HUD may now permit the original lender or investors to share in any future house price appreciation in return for the required writedown of the current balance.

D. The Streamlined Modification Program. In November 2008, Fannie Mae and Freddie Mac, working with HOPE NOW, offered the Streamlined Modification Program (SMP) for loans that they guaranteed. The program defined uniform borrower eligibility requirements and a specific protocol for modifying loans.¹⁵ Payments were to be reduced to 38 percent of income through a “waterfall” that included interest rate reductions, extending the term, and (as a last resort) principal forbearance. The program also paid servicers \$800 for each mortgage that was modified.

Despite these efforts, foreclosures that appear to be neither in the borrowers nor investors' interests continued to climb. The Obama Administration launched a comprehensive initiative, Making Homes Affordable (MHA) in February 2009 to increase loan modifications through HAMP and refinancings through HARP. The Administration estimated that three to four million borrowers could be helped by

¹⁵ The protocol built off a similar protocol developed earlier in the year by the FDIC for IndyMac bank.

modifications through HAMP and an additional four to five million borrowers could be helped with access to refinancing through HARP. We discuss HAMP in detail in the next section, and briefly discuss HARP, in conjunction with some other initiatives to increase mortgage credit, in the subsequent section.

VI. Key Features of the MHA/HAMP Loan Modification Program

At its core, the HAMP provides a standardized waterfall of modification procedures to reduce a borrower's payment-to-current income ratio (known as the "DTI") on his first lien to an affordable level and a uniform test to determine if the resulting loan modification is in the best interests of lenders and investors. It also offers fees and incentive payments to servicers, investors, and borrowers.

Two key design features will determine the extent to which HAMP leads to modifications and reduces foreclosures. The first is its emphasis on the long-term affordability of the mortgage. The program includes many of the features of the FDIC/Indymac "Mod in a Box" program and the SMP offered by Fannie Mae and Freddie Mac. As in these earlier programs, the modifications target a DTI that is judged to be affordable; in HAMP, the target ratio is set at 31 percent. In HAMP, the initial reduction in monthly payments is in effect for five years. The payments may rise after five years, with the interest rate on the loan increasing by one percent per year up to the interest rate on fixed-rate conforming loans in place at the time of modification.

The second key feature of HAMP is that it recognizes the limitations and constraints of mortgage servicers, by introducing a protocol for modification, a standardized test for determining whether the modification should be implemented, and a schedule of fees to compensate the servicer for the costs involved in the modification effort. Adoption of the program is voluntary for servicers of private-label securities or loans not guaranteed or insured by the government-sponsored agencies (GSEs), but the financial incentives offered to the servicer should enhance the expected return from modifications that conform to the HAMP guidelines. In addition, mortgage servicers have reported a significant dose of moral suasion by the Administration, including public reports on the

modification efforts of individual servicers, something that will likely boost the servicer participation rate and the number of modifications offered.

To be eligible for HAMP, the collateralized property must be an owner-occupied, single-family 1-4 unit property, and the primary residence of the borrower. First-lien loan balances cannot be larger than the conforming limits that apply to GSE-guaranteed loans and the DTI on these loans must be above 31 percent. The mortgage must be 60 days or more past due, or in foreclosure or bankruptcy, or--if the loan is less than 60 days delinquent-- the mortgage must be judged to be in imminent default. No minimum or maximum LTV ratio is required for eligibility so, in principle, homeowners with positive equity in their homes may apply for modifications. Such homeowners will likely not represent a significant share of those receiving modifications because the odds of defaulting on a loan decrease with equity in the property, a factor taken into account by the net present value test for modification under HAMP. Treasury reports that as of July 31, 2009, about 3 million loans at the 47 servicers participating in HAMP met the eligibility requirements.¹⁶

The HAMP guidelines have been expanded and refined since the program was first announced in February 2009 in order to further address the complexity of the mortgage market and mortgage products, the differing circumstances of distressed homeowners, and whether the loan is in portfolio, a private-label pool, GSE-owned or guaranteed, or FHA-guaranteed. Treasury continues to expand and release additional guidelines as it responds to feedback from servicers, borrowers, housing counselors and other interested parties. For example, HAMP guidelines for second liens were released in August, along with clarifications and revisions to earlier rules. HAMP guidelines for short sales and deed-in-lieu of foreclosure were released in early October.

A. Reduction in monthly payments and net present value. The HAMP protocol requires servicers to lower monthly mortgage payments, which include principal, interest, taxes and insurance (PITI), to 38 percent of the borrower's gross income, through any method they choose, with investors bearing the losses implied by the reduced payments.

¹⁶ This figure excludes loans that are current or less than 60 days delinquent but in imminent default; it also excludes FHA and VA loans.

Servicers are then required to reduce the DTI from 38 percent to 31 percent by using the waterfall provided by the plan; the losses associated with the additional reductions in the DTI are shared equally by the government and the investors.¹⁷ The waterfall is as follows:

1. The first step requires the interest rate on the loan to be reduced to as low as 2 percent (re-amortizing the outstanding balance over the remaining lifetime of the loan).¹⁸
2. If the DTI remains above 31 percent even when the interest rate is cut to 2 percent, the loan is re-amortized over a longer term, up to 40 years.¹⁹
3. If the DTI still is higher than 31 percent, the lender forbears part of the principal at no interest for the life of the loan.²⁰ A servicer may choose to forgive principal but the HAMP does not require this.

For mortgages that are in private mortgage-backed securities, the modification must satisfy any restrictions on modifications that are specified in the Pooling and Servicing Agreements (PSAs). If it does not, the servicer may ask for a waiver of such restrictions but the investor is not compelled to grant the waiver.²¹

¹⁷ The government cost-sharing is limited to five years.

¹⁸ The resulting interest rate is fixed for five years and then rises by 1 percentage point per year until it reaches the interest rate cap, determined as the Freddie Mac 30-year fixed-rate conforming loan interest rate prevailing at the time of modification.

¹⁹ Note that the extension means that a borrower could be making payments for more than 40 years since the extension is from the time the loan is modified. If the PSA does not permit a term extension, the loan still is reamortized over whatever length period (up to 40 years) is necessary to get the DTI down to 31 percent, but a balloon payment would be due at the end of the original term of the loan.

²⁰ Servicers are not required to forbear more than the greater of (a) 30 percent of the unpaid principal balance of the mortgage loan or (b) an amount resulting in a modified, interest-bearing balance that would create a current mark-to-market LTV ratio of less than 100 percent.

²¹ If a waiver is not granted, the servicer may, for non-GSE loans, seek an exception to the standard modification waterfall from Fannie Mae in its capacity as financial agent of the United States. In addition, subject to the PSA, the servicer may offer more generous terms than required by the standard waterfall. For example, servicers may substitute additional principal forbearance in lieu of extending the term of the loan as needed to achieve the target monthly mortgage payment. Non-GSE servicers may also reduce the interest rate below 2 percent or keep it there longer than five years. These actions do not affect the size of the incentive payments to borrower, servicer, or investor.

HAMP requires a modification only when it is in the best interest of the lenders and investors associated with the mortgage. To make this determination, HAMP provides a base net present value model for servicers to use, giving the servicer only limited discretion in the choice of parameter values. The key parameters in the net present value calculation are the discount rate, the expected default rate for the unmodified loan and the expected default rate for the modified loan, and the expected value of the property collateral at the time of foreclosure. If the net present value to the investor of the modified revenue stream exceeds the net present value of the revenue stream with no modification—taking into account the differences in the default probabilities for the modified and unmodified loan and the expected value of the property collateral at disposal—the modification proceeds.²²

For loans owned or guaranteed by the government-sponsored entities, the modification may proceed even if the present value of the modified revenue stream is less than that expected to be obtained under foreclosure. In all cases, the GSE buys the loan out of the pool, the investor is made whole with respect to the remaining balance on the loan. Under the Treasury's commitment to maintain a positive net worth for the GSEs, the cost of the modification may ultimately be borne by the taxpayer.²³ Servicers of private-label pools must act in accordance with the results of the net present value test unless investors assent to a modification.

Modifications are offered initially on a trial basis, for a period of three months. The modification becomes permanent only after the borrower makes the reduced payments over the trial period and completes all of the required paperwork, which includes documentation of the borrower's income and proof of financial hardship. As of the writing of this paper, a one-time, two-month extension of the trial period was granted for

²² The present value of the modified revenue stream takes into account the government cost-sharing and other incentive payments to the investors. Note that if the default probability is set to one when the loan is not modified, the net present value of the revenue stream for the unmodified loan is simply equal to the net present value of the disposal value of the property (net of costs such as unpaid interest) secured by the loan.

²³ These modification costs are over and above the Treasury incentive payments under HAMP. Given the Treasury's commitment to the GSEs, a modification that lowers the borrower's payments means that the taxpayer receives a lower return than he would under the terms of the original loan when the loan is owned or guaranteed by the GSEs.

borrowers whose loans were in the trial period at the end of August but had not yet submitted the required documents.

While the servicer is gathering information to determine the eligibility of the borrower for a modification, he is also required to assess the borrower's eligibility for refinancing into an FHA H4H loan. If the servicer knows that the mortgage investor does not permit principal forgiveness, which is required under H4H, no evaluation of the borrower's eligibility for an H4H refinance need be made. Otherwise, consideration for a HAMP modification and an H4H refinance are to take place simultaneously, so that the servicer does not delay the offer of a HAMP modification while the borrower is being considered for an H4H refinancing.

In addition to the modification waterfall and the net present value test, the HAMP includes various other innovative provisions that encourage modification and make the modified loan more sustainable. These include payments to servicers (see below), a program for modifying second liens, payments in the form of balance reductions for up to five years to borrowers who keep current on their modified loans, a payment to investors (over and above the payment-sharing described above) of \$1500 if the borrower is current at the beginning of the trial period and current at the end of the trial period, and an initiative to encourage modification of loans in markets hardest hit by falling prices.²⁴ When modification is still out of reach, HAMP authorizes payments for short sales and deeds-in-lieu done instead of foreclosure.

B. Addressing servicer constraints. In designing the HAMP, the Administration addressed many of the problems highlighted in Cordell, Dynan, Lehnert, Liang, and Mauskopf (2009) that have damped servicers' ability or willingness to modify loans and have resulted in foreclosures that, if avoided, would have benefited both the borrower and the investor. First, in recognition that loss mitigation and loan modifications are often

²⁴ A "*de minimis*" test, whereby the loan payments under the modified stream are at least 6 percent lower than the original payments, must be satisfied before the borrower or servicer receives pay-for-performance payments, before the investor receives an incentive payment, and before the Home Price Decline Protection Incentive applies.

more costly to servicers than foreclosures, HAMP authorizes government payments to servicers of \$1,000 for each completed modification where the borrower was delinquent at the time of modification. The servicer receives an annual fee (the lesser of \$1000 or one-half the reduction in the borrower's annualized monthly payment) for up to three additional years as long as the loan is in good standing. HAMP also encourages modification while the borrower is still current but has a high likelihood of defaulting in the near future, with the servicer receiving a one-time fee of \$1,500 in this case.

Second, the provision of a standard loan modification waterfall and a net present value model with limited discretion in the choice of parameters make loan modifications easier to execute at the substantial volumes necessary in the current crisis.²⁵ Equally important, these standardizations mitigate the likelihood that servicers will be accused by investors of violating the terms of the PSAs. Some PSAs delegate to servicers the ability to make modifications as long as they are "in the best interest of the investor." Other PSAs give the servicer latitude to pursue loss mitigation actions consistent with the "usual and customary" industry standards. The HAMP procedures are intended to represent new industry standards for loan modification and to ensure that the investor's interest is upheld; as a result, following these procedures should eliminate much of the legal risk that servicers face in modifying loans. Even so, the servicers asked for and received *safe harbor* assurance for modifications that conform to the HAMP guidelines in the *Helping Families Save Their Homes Act*, signed into law on May 20, 2009.²⁶

HAMP includes a voluntary modification program for second liens when the first lien has already been modified in line with the HAMP guidelines. As noted earlier, servicers'

²⁵ Of the critical parameters in the net present value calculation (the discount rate, the default rates, property price projection, and the REO discount) the most recent version of the NPV model offers no servicer discretion on two of these: the projected price of the property is provided by the FHFA and the REO discount is based on analysis of sale prices of foreclosed homes sold by the GSEs. Servicers have the ability to raise the discount rate above the rate provided in the base NPV model and some servicers have the right to choose projected default and redefault rates based on their own experience, subject to Treasury approval (see later discussion).

²⁶ Servicers were also concerned about the prohibition in many PSAs against the servicer initiating contact with borrowers who were current in their payments and offering them modifications. The safe harbor also likely protects the servicers from any legal liability on this account.

ability to modify loans has been adversely affected by the presence of junior liens on mortgages, a not-uncommon characteristic of many mortgages originated during the most recent mortgage boom. The presence of junior liens greatly complicates modifications because holders of first liens generally want servicers to get junior lienholders to agree to resubordinate their liens to the modified first lien. Negotiations with junior lienholders add additional time and expense to the servicer workloads. In addition, because many of the first liens are serviced by big banks that hold the second mortgage, the servicer may face a conflict of interest in how the first lien is modified.

The second lien program recognizes these difficulties and provides a modification waterfall for the second lien and payments to extinguish the lien if junior lienholders prefer this second option. By raising the expected rate of return to second lienholders, the program reduces their relative gain from blocking first-lien modifications and thus the perceived threat they present to first lienholders. The industry has also prepared a voluntary program to deal with second liens and is currently working on a data-sharing protocol to inform second lien holders on a timely basis of modifications to the first lien.

In past years, investors do not appear to have been concerned that servicers were choosing to foreclose too often. Instead, investors have expressed concern that modified loans may still end up in default so that, in an environment of declining house prices, losses from delaying foreclosure would be larger than losses if foreclosures were initiated immediately. Under HAMP, the substantially reduced mortgage payments as well as the incentives to borrowers who stay current on their modified loans should help allay investor concerns about redefault. Also, incentive payments to investors, linked to the rate of recent home price decline and payable for two years, will also increase the investor's relative profitability from modification compared to foreclosure.

When the net present value calculation favors foreclosure over loan modification, or when the borrower does not successfully complete the trial period or defaults on a HAMP modification, servicers will receive incentives to take other alternatives to foreclosures,

most notably short sales or deeds-in-lieu (DIL) of foreclosure.²⁷ The newly released HAMP guidelines simplify and streamline the use of short sales and DIL options for first lien mortgages that are not owned or guaranteed by the GSEs. Although servicers are not required to offer such options, these alternatives generally ensure a better financial outcome for lenders and investors than would occur with a foreclosure sale. Estimates of loss rates on short sales run an estimated 15 to 20 percent below those associated with foreclosure sales.²⁸ Servicers are eligible for a payment of \$1000 and investors will be reimbursed one dollar for every three dollars paid to secure release of a subordinate lien, with a maximum reimbursement of \$1000. Borrowers are eligible for \$1500 in relocation expenses. Although the loss of the house is not prevented in these cases, the deadweight losses associated with foreclosure are mitigated when these options are pursued.

C. Evidence on the take-up rate. As of August 2009, 47 servicers, including the five largest, had signed up for HAMP.²⁹ The available data suggest that more than 85 percent of all mortgage loans in the U.S. are now covered by the program. Since its inception, about 1.9 million letters have been mailed to borrowers providing information about the program. More than 570,000 HAMP trial modification offers have been extended, representing 19 percent of the eligible pool of loans and about 360,000 trial modifications are underway. Because the trial modification period runs for three months, completed modifications have only recently started to be recorded. Because a 60-day extension period was granted for borrowers who have not yet filed all the necessary documentation, the recording of completed modifications will likely understate the number of “effectively” completed modifications for several months.

When the program was announced in February, the Administration’s target was to offer assistance to up to 3 to 4 million homeowners over the following three years. The

²⁷ Servicers are supposed to first consider other non-HAMP-type loan modifications or retention programs for such borrowers prior to offering a short sale or DIL.

²⁸ Amherst Securities Group LP. *Amherst Mortgage Insight*, September 10, 2009, page 2.

²⁹ See “*Stabilizing the Housing Market*” by Michael S. Barr, Written Testimony before the House Financial Services Committee, Subcommittee on Housing and Community Opportunity.

Administration convened a meeting of servicers in Washington in July 2009 and asked servicers to commit to starting 500,000 trial modification by November 1. The Administration is releasing a monthly report on individual servicer activity to increase transparency and thereby pressure lagging servicers to increase their efforts. An August press release stated that the program was on track to meet its goals.

Despite greater standardization, uncertainty remains about which borrowers will receive help, as servicers and investors retain some discretion in executing HAMP guidelines. Importantly, servicers on non-GSE loans have discretion to adjust the discount rate in the present value calculations by up to 2½ percentage points from the rate provided for in the basic NPV model—the Freddie Mac rate on 30-year, fixed-rate conforming loans—and may also use a discount rate for portfolio loans that differs from the rate used for loans serviced for a third party investor. Also, large servicers—those with a servicing book exceeding \$40 billion—may use default and redefault rates based on their own experience rather than those from the default model embedded in the Treasury NPV model. All servicers retain discretion in assessing whether a borrower appears to be at risk of imminent default, and this assessment figures prominently into the default estimate produced by the Treasury model. In addition, the mortgages being modified are subject to varying PSA agreements with different restrictions. For example, some PSAs prohibit term extensions while others prohibit interest rate reductions, prohibitions that may make a HAMP modification impossible to achieve. Finally, as noted previously, an investor can decide to waive PSA restrictions or to pursue a modification even if it is not the more profitable option. Thus, as the Treasury guidance recognizes, the discretion left to the servicer and the investor, however limited, may produce different modification outcomes for households who have very similar financial circumstances.

D. Limitations of HAMP. In our assessment, HAMP is a well-designed program to effectively address the problems of borrowers whose mortgage payments relative to their income are unsustainable over the long run. But it is less well-suited to helping borrowers whose immediate financial hardship is severe, but limited in duration. Specifically, one shortcoming of the program is that it may not reach many households

for which the mortgage distress owes to a job loss by the primary earner.³⁰ These households are at greater risk of failing the NPV test required to qualify them for a modification because their reduced income stream will likely mandate a large reduction in their monthly payments which, by HAMP guidelines, is not withdrawn when the earner becomes employed again. Thus, modifying the loan may substantially lower the net present value of the revenue stream to the investor. In addition, the probability of mortgage default associated with job loss in the current environment is likely to be underestimated by a default model like that used by the Treasury because the model does not include information on the average duration of unemployment, which is now significantly longer than in past recessions. By understating the likelihood of default on a loan that is not modified (that is, overstating the likelihood that the loan will self-cure), a servicer would overstate the present value of not modifying the loan.³¹

In some cases where the program does provide a modification to a household that has experienced job loss, there may be concerns about fairness. In particular, because the size of the reduction in payments depends on current income, it will be more generous than needed when employment resumes. Lenders, investors, and taxpayers will all bear the costs of what is then perhaps an unduly large modification. In general, if financial distress is likely to be temporary, programs that provide mortgage help only during the period of distress would be preferable on equity considerations and could be designed to be at least as effective in avoiding unnecessary foreclosures.³²

³⁰ An early problem in qualifying unemployed workers for loan modifications was the requirement that these homeowners prove that they were eligible for at least nine months of unemployment benefits.

³¹ Offsetting, at least in part, the probability that too few loans will be offered modifications is that the default models may also underestimate the probability that a modified loan will redefault in this recession. When redefault probabilities are underestimated, too many modifications are offered. We think the risk of underestimating the probability of default (or, equivalently, the risk of overestimating the probability of self-cure) is the greater risk in this environment.

³² Two such programs are “*A Proposal to Help Distressed Homeowners: A Government Payment-Sharing Plan*,” Foote, Fuhrer, Mauskopf and Willen, Boston Fed Public Policy Brief 09-1 <http://www.bos.frb.org/economic/ppb/2009/ppb091.htm> and “*The Wisconsin Foreclosure and Unemployment Relief Plan*,” Davis, Malpezzi and Ortalo-Magnu, <http://www.bus.wisc.edu/wcre/wi-fur>

Lenders, investors, and taxpayers will also bear the costs of loans that redefault after receiving a HAMP modification, which highlights another limitation of the HAMP rules for modifications. The loans that are most likely to redefault are those with large amounts of negative equity. Such losses would be mitigated if mortgages with combined LTVs that are well above 100 percent were not eligible for modifications. Of course, some borrowers with negative equity may turn down HAMP modifications, particularly if they recognize that they are so deeply underwater that no reasonable trajectory for house prices will leave them with positive equity in the next few years. While this spares the costs of implementing an unsuccessful modification, it increases the likelihood of foreclosure. The recently introduced incentives for short sales and DIL are meant to mitigate costs in cases where the mortgage cannot be saved, but it remains to be seen how well the new guidelines and incentive payments work.

VII. Complementary Efforts to Support Mortgage Credit

In addition to HAMP efforts to encourage loan modifications, there are a number of complementary efforts to support housing markets by mitigating the rapid constriction in credit supply to creditworthy borrowers. Credit losses and high risk premiums led to sharply tighter lending standards across the board. The problems were particularly severe among so-called private-label mortgage-backed securities, i.e. those without government guarantees, which collapsed completely by late 2007. These securities had been an important source of funds to prime borrowers seeking jumbo mortgages, with about \$1.1 trillion in issuance in 2005 and 2006. At the same time, banks sharply tightened standards on all types of residential mortgages, including prime loans.³³

In the second half of 2007, this tightening in credit supply was mitigated by the presence of Fannie Mae and Freddie Mac in the loan market. However, as house prices continued to deteriorate and losses began to mount on the securities that they owned or insured, the

³³ Board of Governors of the Federal Reserve System, The July 2009 Senior Loan Officer Opinion Survey on Bank Lending Practices, page 9.
<http://www.federalreserve.gov/boarddocs/snloansurvey/200908/fullreport.pdf>

GSEs also tightened credit.³⁴ FHA-insured mortgages expanded sharply, and GNMA as a share of total securitizations rose substantially from less than 3 percent during the 2005 to 2006 boom to almost one-third of total issuance in the fourth quarter of 2008. Indeed, Avery et al (2009) show that FHA-insured mortgages accounted for 5.6 percent of originations in 2007 but 21.5 percent of originations in 2008.³⁵

The severe constriction in mortgage credit was an impetus for a number of policy efforts. Of special note, the Obama Administration increased refinancing options through the GSEs, Congress raised the limits on conforming and FHA-insured mortgages and the Federal Reserve began to purchase agency MBS and GSE debt to reduce mortgage rates.

A. Refinancing options in HARP. Tighter underwriting standards significantly reduced the ability of homeowners to refinance into more affordable mortgages. In addition, borrowers with LTVs that had risen above 80 percent because of house price declines could refinance into agency-backed mortgages only by purchasing mortgage insurance (MI), which has been more difficult and costly to obtain in recent years. The Obama Administration addressed this problem by raising the maximum allowable LTV that qualified a borrower to refinance into an agency-backed mortgage without MI. The maximum was raised to 105 percent initially, and was later raised to 125 percent. Borrowers with existing MI could refinance and retain their existing MI terms. The Administration estimated that up to four to five million borrowers could be helped by the rise in the allowable LTV.

³⁴ According to Abraham (2009, p. 5), these delivery fees ranged from a discount of 25 bps on top quality low LTV business to as high as 300 points, translating into roughly -6 to +75 bps in yield. See Jesse Abraham, “An Updated Assessment of President Obama’s Home Ownership Affordability and Stability Plan,” Wells Fargo Research Report, 2009-02.

³⁵ Avery, Robert, Neil Bhutta, Kenneth P. Brevoort, Glenn B. Canner and Christa N. Gibbs (2009) “The 2008 HMDA Data: The Mortgage Market during a Turbulent Year” *Federal Reserve Bulletin* 95. Available at <http://www.federalreserve.gov/pubs/bulletin/2009/pdf/hmda08draft.pdf>

While the program is still somewhat new, initial results suggest that HARP has not generated the refinancing volumes anticipated.³⁶ Several factors have been cited to explain the low refinancing volumes: shortages in the capacity of mortgage lenders to do the refinancing, time needed for mortgage insurers to work out procedures under the plan, and the HARP requirement for strong payment histories at a time when a rising proportion of borrowers have become delinquent.³⁷

B. Increasing conforming loan limits. Because borrowers seeking jumbo mortgages, i.e. loans with balances above the conforming loan limit, were not eligible for GSE-based programs such as HARP, credit availability became increasingly problematic for borrowers seeking jumbo loans, even when their creditworthiness was not in question. Metropolitan areas with relatively high house prices were especially affected by this

Congress chose to support a portion of the jumbo market by raising the conforming loan limit for agency-insured loans. Congressional response began with the Economic Stimulus Act, passed in February 2008, which raised the conforming loan limit to 125 percent of metropolitan area median income, up to a cap of \$729,750, for originations made through year-end 2008. The Housing and Economic Recovery Act of 2008 permanently raised the limit to 115 percent of the metropolitan area median, with a cap at \$625,500. Under the February 2009 HAMP Plan, the initial 125 percent limit (up to the \$729,750 cap) was reinstated for originations made through year-end 2009. Legislation is pending in Congress to either extend the limits further or make them permanent.

In order to implement the new limits, the GSEs had to assess and price the risk posed by these high-balance loans, many of which were originated in areas experiencing the largest declines in house prices. Investors in agency MBS had to model the behavior of a novel group of borrowers in uncertain times; in fact, they initially resisted including MBS

³⁶ The FHFA reported in early October that the GSEs completed 93,070 refinancings under HARP, around 4 percent of the 2.3 million GSE refinancing completed between April – August 2009.

³⁷ See “Mortgage Insurers’ Rules Make It More Difficult to Refinance with Other Lenders, by Alexander Hasha and Mikhail Teytel, Citigroup, May 12, 2009.

containing such mortgages in the most liquid set of MBS (the so-called “to be announced” or TBA market).³⁸ Ultimately, investor groups permitted these new high-balance conforming loans in pools destined for the TBA market as long as they did not exceed 10 percent of the pool’s balance.

Because originators, GSEs and investors had to value these so-called “conforming jumbo” loans in the midst of a housing-related financial crisis, they proceeded cautiously; in turn, originations of these loans have gotten off to a slow start. By the middle of 2009, Fannie Mae reported holding roughly \$36 billion of such loans. Freddie Mac has largely avoided the business having done less than \$3 billion in conforming jumbo since 2008. The FHA has insured around \$7 billion so far in 2009.³⁹

C. Direct Purchases of Securities. In the midst of the late-2008 financial crisis, yields on agency MBS relative to those on comparable maturity Treasuries began to widen, leading to higher mortgage rates even for prime conforming borrowers. On November 25, 2008 the Federal Reserve announced that it would begin outright purchases of GSE and Federal Home Loan Bank securities in an effort to decrease the cost and increase the availability of credit for the purchase of houses.⁴⁰ As of September 2009, the Federal Reserve had committed to purchase up to \$1.25 trillion of agency MBS and \$200 billion of agency debt by the end of the first quarter of 2010.⁴¹ This program appears to have lowered borrowing costs, with 30-year fixed mortgage rates declining 100 to 150 basis points.⁴²

VIII. Conclusion

³⁸ TBA execution means that securities can be issued before all loans in a pool close. This has been credited with adding substantial liquidity to agency securitizations, and, some contend, give the agencies competitive advantages relative to the private label, or nonagency, market.

³⁹ See *Inside Mortgage Finance*, August 21, 2009, pp. 3-4.

⁴⁰ See <http://www.federalreserve.gov/newsevents/press/monetary/20081125b.htm>

⁴¹ See <http://www.federalreserve.gov/newsevents/press/monetary/20090923a.htm>

⁴² See Bernanke “The Federal Reserve’s Balance Sheet”, April 3, 2009
<http://www.federalreserve.gov/newsevents/speech/bernanke20090403a.htm>

It is too early to judge how successful HAMP will be. In principle, the program appears to mitigate several obstacles to modifications that we identified in earlier work, including the high cost to mortgage servicers of pursuing modifications rather than foreclosure, legal concerns among servicers, and complications associated with second liens. And, indeed, take-up appears to be substantial, with the Administration meeting its initial goal of having 500,000 trial modifications started by November 1, 2009.

That said, the number of foreclosures prevented by the program will likely be limited by two factors. First, for unemployed homeowners, the required reduction in the payment stream might be so large that the potential modification does not qualify for the program because it would yield a lower return to the mortgage lenders and investors than that obtainable under foreclosure. Thus, additional initiatives to address the problems of job losers may be needed. Second, the focus of the program on reducing the payments associated with the mortgage rather than the principal of the mortgage may limit its attractiveness to borrowers whose equity is sufficiently negative that a reasonable trajectory of future home prices is unlikely to put the homeowner “above water” in the foreseeable future. The recent addition to HAMP of streamlined procedures for short sales and “deed in lieu” transactions should help with this shortcoming and reduce the incidence of costly foreclosures, even if it does not keep homeowners in their homes.