

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

---

**Editor's note: Two values in Table 1 below (median monthly payment decrease for government loans, in both periods) were corrected on November 12, 2010.**

## Introduction

In spite of ongoing federal and state relief efforts, many Ohio homeowners are still facing the risk of foreclosure. Ohio is among five states chosen to receive monies from the second round of funding from the Obama Administration's Housing Finance Agency Innovation Fund for the Hardest Hit Housing Markets. Announced in August 2010, the second round of Hardest Hit Funds is aimed at helping struggling homeowners either to stay in their homes with mortgage payment assistance or modification support, or to receive assistance for a graceful exit from the home via a short sale or deed in lieu of foreclosure. As of fall 2010, these Hardest-Hit Funds have not yet reached Ohio homeowners.

Programs currently in place designed to avoid foreclosure include the Administration's comprehensive Making Home Affordable Program, launched in 2009, consisting of a loan modification program (Home Affordable Modification Program, or HAMP) and a refinance program (Home Affordable Refinance Program, or HARP). So far, the numbers indicate that these programs are addressing only a small part of the delinquency problem. Nationwide, as of the first quarter of 2010, less than 30 percent of seriously delinquent loans (60 or more days delinquent) were eligible for a modification under HAMP. By June 2010, the HAMP program reported that about 24 percent of eligible delinquent loans in the U.S. were currently in a trial or permanent modification.<sup>1</sup> Based on these two estimates, roughly 7 percent of seriously delinquent loans were being modified under HAMP. And within 6 months following a permanent modification, about 10 percent of loans are again seriously delinquent. More recently, the administration added a program that offers alternatives to modification, allowing borrowers to exit homeownership when a modification is not viable, called Making Home Affordable Foreclosure Alternatives (HAFAs).

In this report, we track Ohio mortgage delinquencies, loan modifications, and their performance with the use of loan performance data from Lender Processing Services, Inc. (LPS). Loan modifications were flagged according to changes in the terms of the loan, balance, and payments using an algorithm provided by researchers at the Atlanta and Boston Federal Reserve Banks.<sup>2</sup> Our analysis is complemented with results from an online survey of housing counseling agencies.<sup>3</sup>

## Preview of Findings

The percent of loan modifications that include a decrease in the monthly payment has gradually risen from less than 40 percent in 2008 to more than 80 percent as of mid 2010, with the steepest increase taking place before the second quarter of 2009. As of January 2010, portfolio loans had the highest percentage of payment-reduction modifications (compared to privately securitized, GSE, and government loans). This two-fold increase in the type of loan modification that specifically makes monthly payments more affordable is responsible in part for the lower re-default rates of modified loans in recent times. Still, for every loan modified between May 2009 and January 2010, there were 10 seriously delinquent loans in the sample that were not modified. This finding highlights the need to consider and track alternative loss-mitigation strategies in addition to modification programs.

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

---

## Data

The LPS data used in this analysis include first lien loans originated in Ohio from 2003 through July 2010.<sup>4</sup> The LPS data covers nearly 60 percent of the residential mortgage market and includes loan-level servicing data for both securitized loans and loans held in portfolio from the top 10 residential mortgage servicers in the nation, among others. We identify seriously delinquent loans as loans that have become 60 or more days past due. LPS does not provide information on loan modifications; however, the data are updated to indicate changes in the terms of the loan. These changes are used to flag possible modifications.

A loan is considered modified if it has been seriously delinquent sometime within the past 12 months **and** it has experienced a significant change in one or more of the following variables: interest rates,<sup>5</sup> remaining balance, monthly payment, and remaining terms. To examine the performance of loan modifications, we focus on modifications taking place during two time periods: May 2008 to April 2009 (pre-HAMP period) and May 2009 to January 2010 (post-HAMP period).<sup>6</sup> While we use May 2009 as a point of reference for our comparison (HAMP was announced between March and April 2009), it is not our intention to evaluate the HAMP program. We have no way of either identifying loans modified specifically under HAMP or estimating the fraction of loans that are HAMP-modified. That month merely provides a point of reference for when both the process for modifying loans may have become more streamlined and additional incentives were provided to servicers and investors to modify more loans.

To gain additional insights regarding loan modifications, we use information gathered from 14 housing counseling agencies within the Federal Reserve's Fourth District (which includes all of Ohio, western Pennsylvania, eastern Kentucky, and the panhandle of West Virginia), between January 2010 and May 2010. These agencies responded to questions about changes in demand for their services, changes in the demographics of their clientele, reasons for borrowers defaulting, barriers to loan modifications, and knowledge and use of various modification programs and alternatives.

## Main Observations

Our analysis led us to the following key observations about what's happening in Ohio.

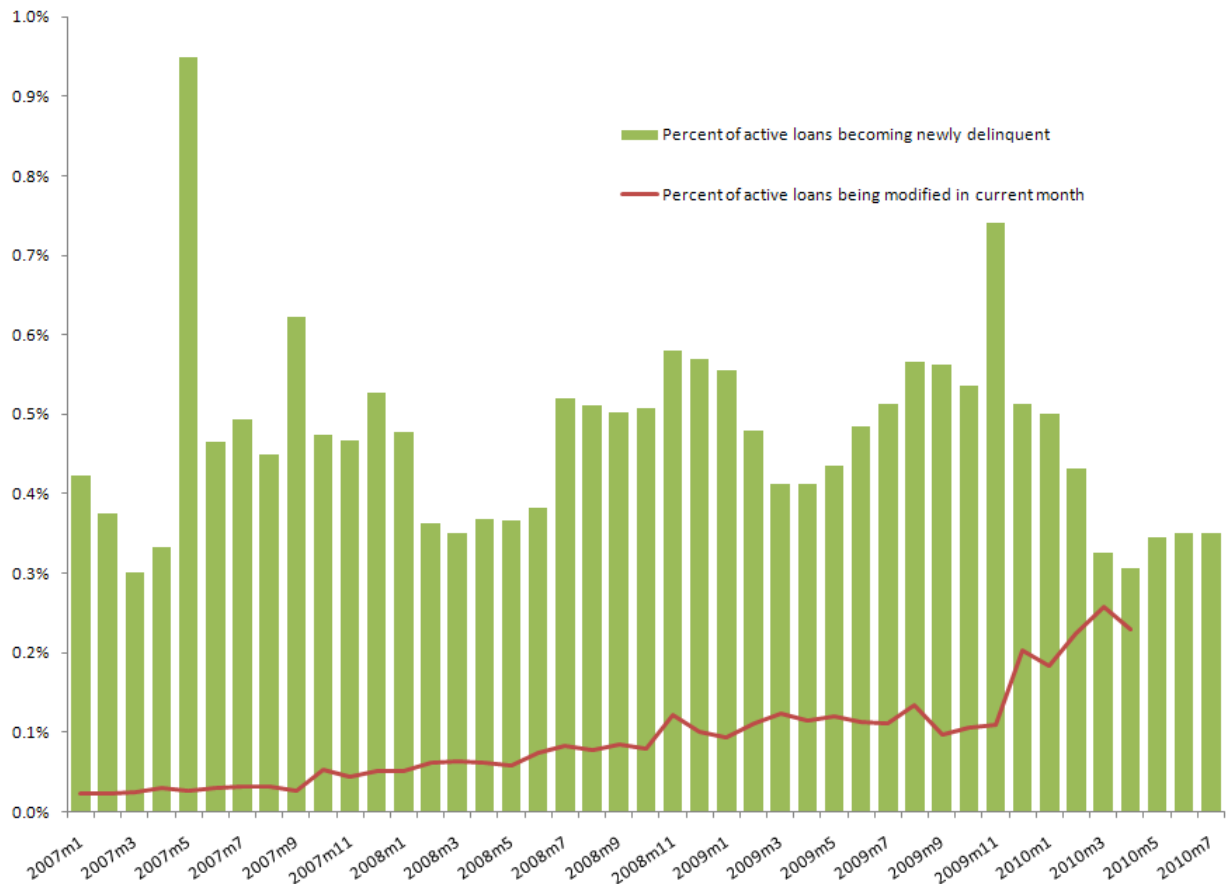
- I. The number of loan modifications per month is increasing, but not enough to keep up with existing and new delinquencies.**

The current stock of seriously delinquent loans makes up about 9 percent of all loans in our Ohio sample. This stock of problematic loans increases with each new delinquency and decreases—at least temporarily—as loans become current (or not more than 30 days delinquent), either on their own or with a modification. This stock also decreases as a result of some loans transitioning into real estate owned, or REO, status. As figure 1 illustrates, in 2010 the rate at which delinquent loans are being modified increased while the rate of new delinquencies has decreased. However, according to our estimates, *new* modifications performed each month in the first quarter of 2010 constitute a little less than 3 percent of the stock of seriously delinquent loans in that month.

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

**Figure 1: Ohio loans becoming newly seriously delinquent and being modified**



**SOURCE:** Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston.

Even at this relatively low rate of modifications servicers are not able to cope with the increasing demand for modifications, according to the counseling agencies surveyed.. Most respondents report that it takes between 120 and 240 days for borrowers to reach a loan workout with the servicer or lender. In addition, they find that process errors —multiple requests for paperwork, incorrect evaluation, lack of communication between departments, etc.—are common.

**II. In May 2008, the highest percent of delinquent loans was composed of privately securitized loans (42%, table 1). By May 2009 (the start of our post-HAMP period), seriously delinquent loans were more evenly spread between GSE-securitized and privately securitized loans (35% and 34% respectively).**

This shift is consistent with an increase in delinquencies in the prime sector (table 1).

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

### III. Loan modifications that involve a payment decrease have risen across all investor types. In the post-HAMP period, while portfolio-held delinquent loans are receiving more concessionary modifications, GSE-securitized loans are being modified with a larger reduction in median monthly payment.

While the increase in concessionary modifications occurs across all investor types, table 1 shows a steeper increase of private label and portfolio loans. Modifications of GSE-held loans, however, display the greatest percent decrease in the median monthly payment (26%).

**Table 1: Modifications in Ohio by investor type during the study periods and for loans originated since 2003**

	Investor type			
	Private label	Portfolio	GSEs	Government
<b>Pre-HAMP: 05/08 – 04/09</b>				
Share of delinquencies in month 05/08	42.2%	11.0%	28.7%	18.0%
% modifications with payment decrease	56.2%	65.0%	69.1%	32.1%
Median monthly payment decrease	\$ 207	\$ 117	\$ 215	\$ 11.50*
Median % monthly payment decrease	20.0%	14.1%	26.2%	1.4%
<b>Post-HAMP: 05/09 – 01/10</b>				
Share of delinquencies in month 05/09	34.4%	10.4%	35.4%	19.8%
% modifications with payment decrease	75.4%	87.2%	76.0%	56.1%
Median monthly payment decrease	\$ 190	\$ 85	\$ 264	\$ 46*
Median % monthly payment decrease	21.0%	11.2%	26.3%	9.7%

**SOURCE:** Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston.

\* Editor's Note: These two values in Table 1 (median monthly payment decrease for government loans, in both periods) were corrected on November 12, 2010.

Observations IV and V refer to figure 2, which compares the performance of seriously delinquent loans that were modified (blue) and not modified (red) in Ohio during the two periods of study. In order to compare relative magnitudes of loans in each category, all quantities are indexed to the number of delinquent, not modified loans during the pre-HAMP period, which appears as 100 percent in the charts.

### IV. About 18 percent of seriously delinquent, not modified loans recover on their own during the post-HAMP period (May 2009 to January 2010), although this recovery rate is lower in comparison to the previous period (see figure 2).

During the pre-HAMP period, about 22 percent of loans that had become seriously delinquent improved their status, or self-cured, within six months without a loan modification (see figure 2). We refer to self-

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

---

cured loans as loans that change their status from seriously delinquent to 30 days delinquent or current. More recently (in the post-HAMP period), however, there are no signs that distressed borrowers are

coping better on their own. In fact, the self-cure rate has gone down in our sample to about 18 percent due to an increase in delinquencies.

- V. For every modified loan, there were 10 seriously delinquent ones during the post-HAMP study period, compared to one in nine during the pre-HAMP period. However, the more recently modified loans experience lower re-default rates.**

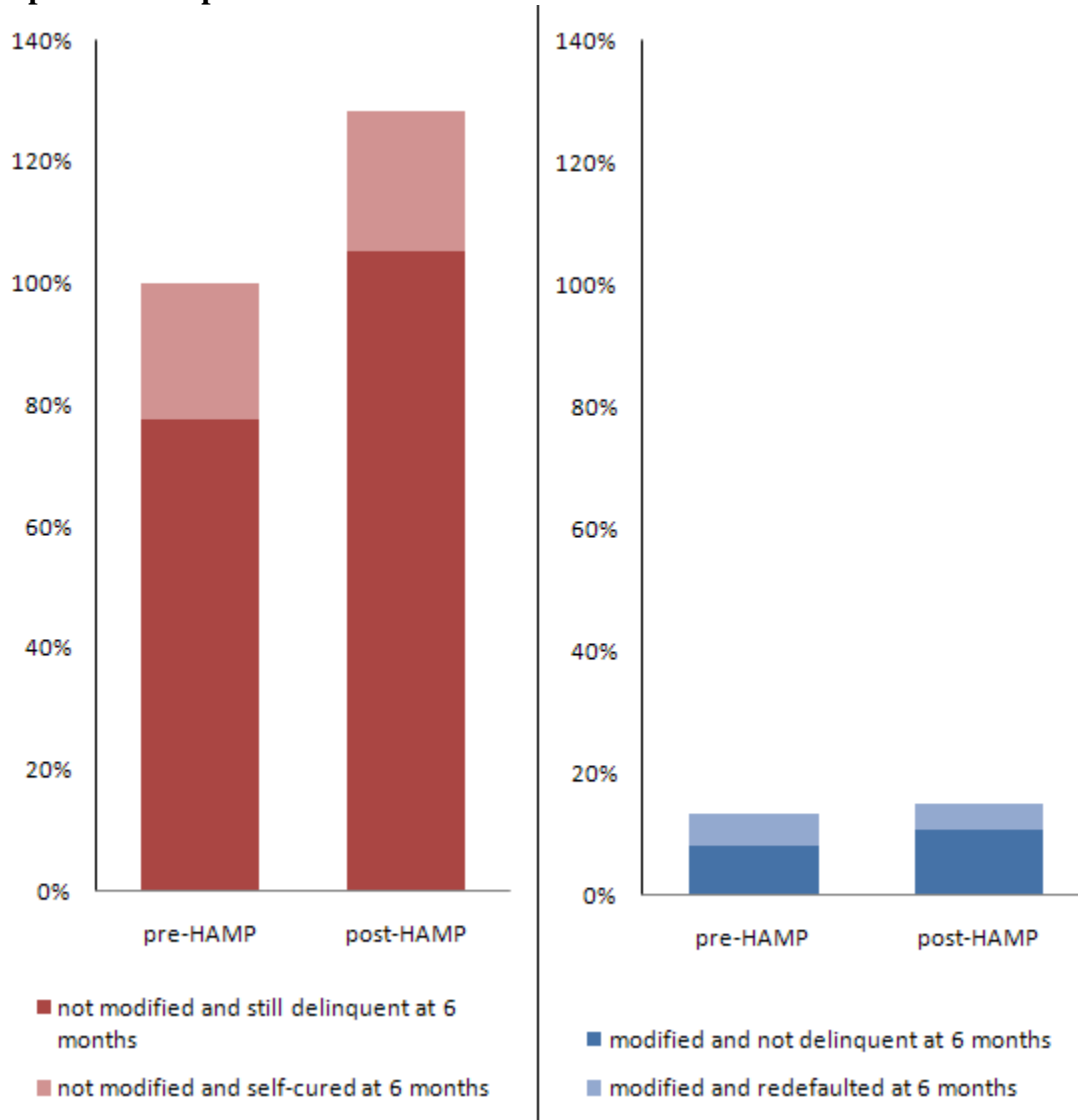
About 4 out of 10 loans modified during the pre-HAMP period (May 2008 to April 2009) had re-defaulted by the 6<sup>th</sup> month following modification (see figure 2). In the post-HAMP period (May 2009 to January 2010), although more loans are being modified, they nevertheless constitute only about 9 percent of seriously delinquent loans. On the plus side, the re-default rates of these modified loans decreased considerably in the post-HAMP period compared to pre-HAMP; just 28 percent (about 3 out of 10) of these modified loans become seriously delinquent by the 6<sup>th</sup> month, down from nearly 40 percent.

Overall, the picture of delinquent loans in Ohio remains dim. Figure 2 illustrates the magnitude of the problem. While it is encouraging that more recent modifications experience fewer re-defaults, most of the troubled loans are neither being successfully modified nor recovering on their own.

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

**Figure 2: Status at 6 months of delinquent, not modified loans and modified loans for the pre-HAMP and post-HAMP periods**



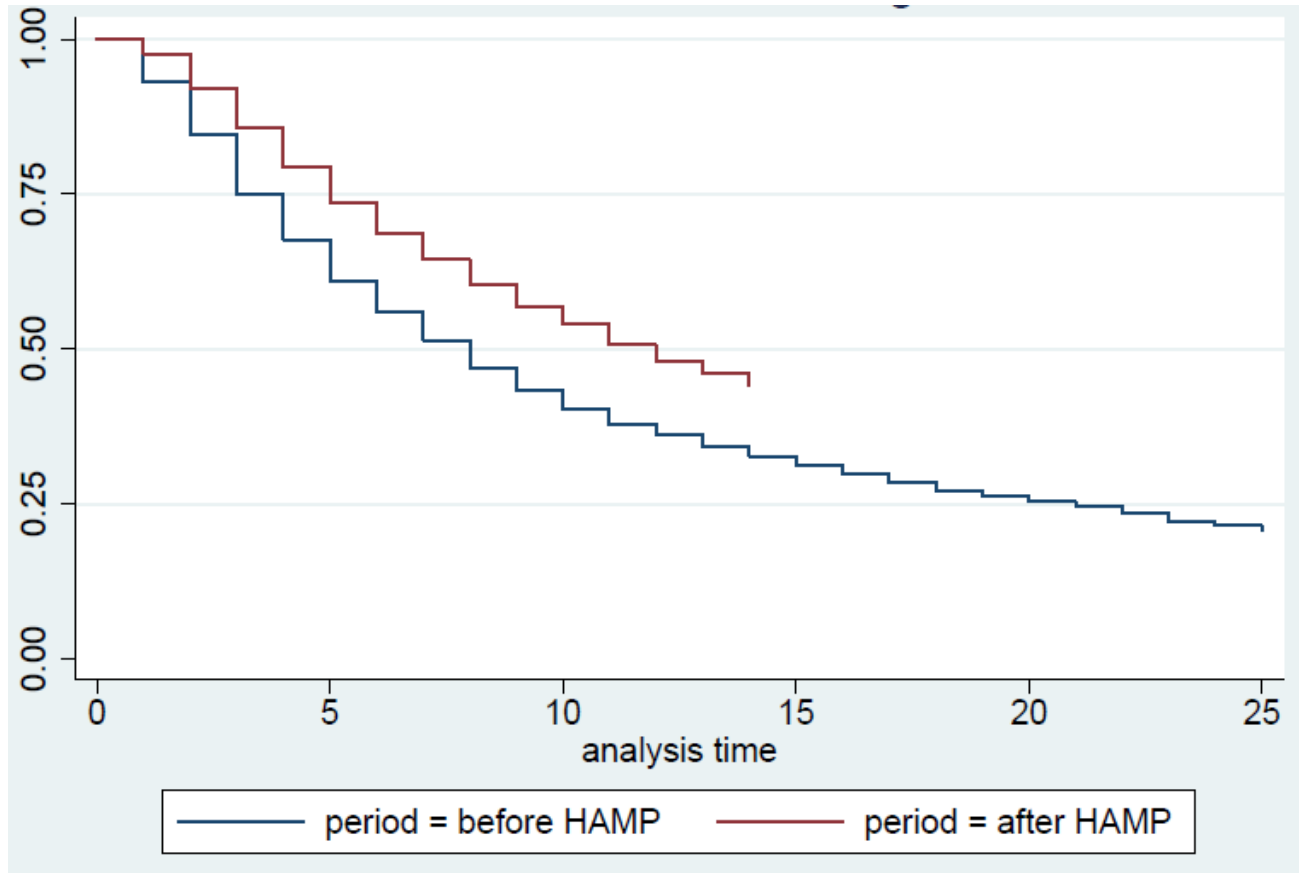
**SOURCE:** Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston. Values indexed to pre-HAMP delinquent, not modified loans=100.

A closer look into those loans that are modified confirms that fewer are re-defaulting. Figure 3 shows consistently higher estimated survival rates of modified loans for the post-HAMP period.

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

**Figure 3: Estimated survival rates of loans modified in the two study periods**



**SOURCE:** Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston. Analysis time is in months. Before HAMP includes loans modified in the May 2008-April 2009 period; after HAMP includes loans modified between May 2009 and January 2010.

## A Look into the Improved Performance of More Recently Modified Loans

A number of factors may explain this improvement in the performance of modified loans. We outline three non-exclusive hypotheses below and make use of our data to consider the likelihood of each possibility.

### **Hypothesis 1: Hardships that affect borrowers' ability to pay may have declined.**

If a reduction in hardships affecting borrowers' ability to pay were the case, we would expect to see higher self-cure rates among non-modified loans. That is not the case here, as we see lower self-cure rates. At the same time, counseling agencies that responded to our survey reported higher numbers of clients experiencing job loss in recent times along with increased demand for the agencies' services.

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

## **Hypothesis 2: Riskier loans have already defaulted and left the pool; therefore, loans more recently modified have better chances of performing well.**

This explanation may have held true in a comparison that included modifications made in 2007 and 2008. When comparing year-to-year changes, for instance, counseling agencies do report changes in the typical client base. “Although we continue to see clients in the low- to middle- income levels, we are starting to see more educated, suburban, married couples as opposed to the traditional single heads of households,” shared a Cincinnati housing counselor. A few counseling agencies reported seeing more rural and older borrowers as well.

However, when we restrict our analysis to the periods just before and after May 2009, we find that at origination, loans in the two periods are not too different from each other. Table 2 shows means and medians of credit scores at origination, loan-to-value ratios, and origination amounts. In the pre-HAMP period, median FICO scores were slightly lower, but on average there is virtually no difference in the sample. Origination amounts are similar as well. Loan-to-value ratios, however, are higher in the post-HAMP period, although there is no way of knowing how many of these loans had a second lien loan attached to the mortgage. When looking at types of loans being modified, we find that FHA loans are much more likely to include a payment decrease in the post-HAMP period than in the pre-HAMP period (77% and 40%, respectively).<sup>7</sup> Conventional loans are also more likely to involve a payment decrease in post-HAMP than in the pre-HAMP period (66% and 76%, respectively), but the difference is not as large.

**Table 2: Summary statistics of loans modified in the two study periods**

	Pre-HAMP (May 2008 to April 2009)		Post-HAMP (May 2009 to January 2010)	
	Mean	Median	Mean	Median
FICO score at origination	637.90	616	638.51	637
Loan-to-value ratio	82.26	80	86.58	90
Origination amount	\$ 137,921	\$ 106,200	\$114,873	\$105,100

**SOURCE:** Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston.

## **Hypothesis 3: Loan modifications have become more sustainable.**

Could the improved performance of modified loans be due to changes in the way loans are modified? To find out, we took a look at changes in loan modifications by type over time. Figure 4 shows that non-concessionary modifications—those that capitalized late fees and thus increased the principal balance without any other changes (reducing monthly payments, lowering interest rates or changing terms)—have declined considerably. This kind of modification may be suitable for borrowers who experience a short-term disruption in their ability to make otherwise-affordable monthly payments. But a non-concessionary loan modification is not meant to assist borrowers who could not afford increasing loan payments in the long run due to loan terms and resets, and for whom decreasing home prices leave them

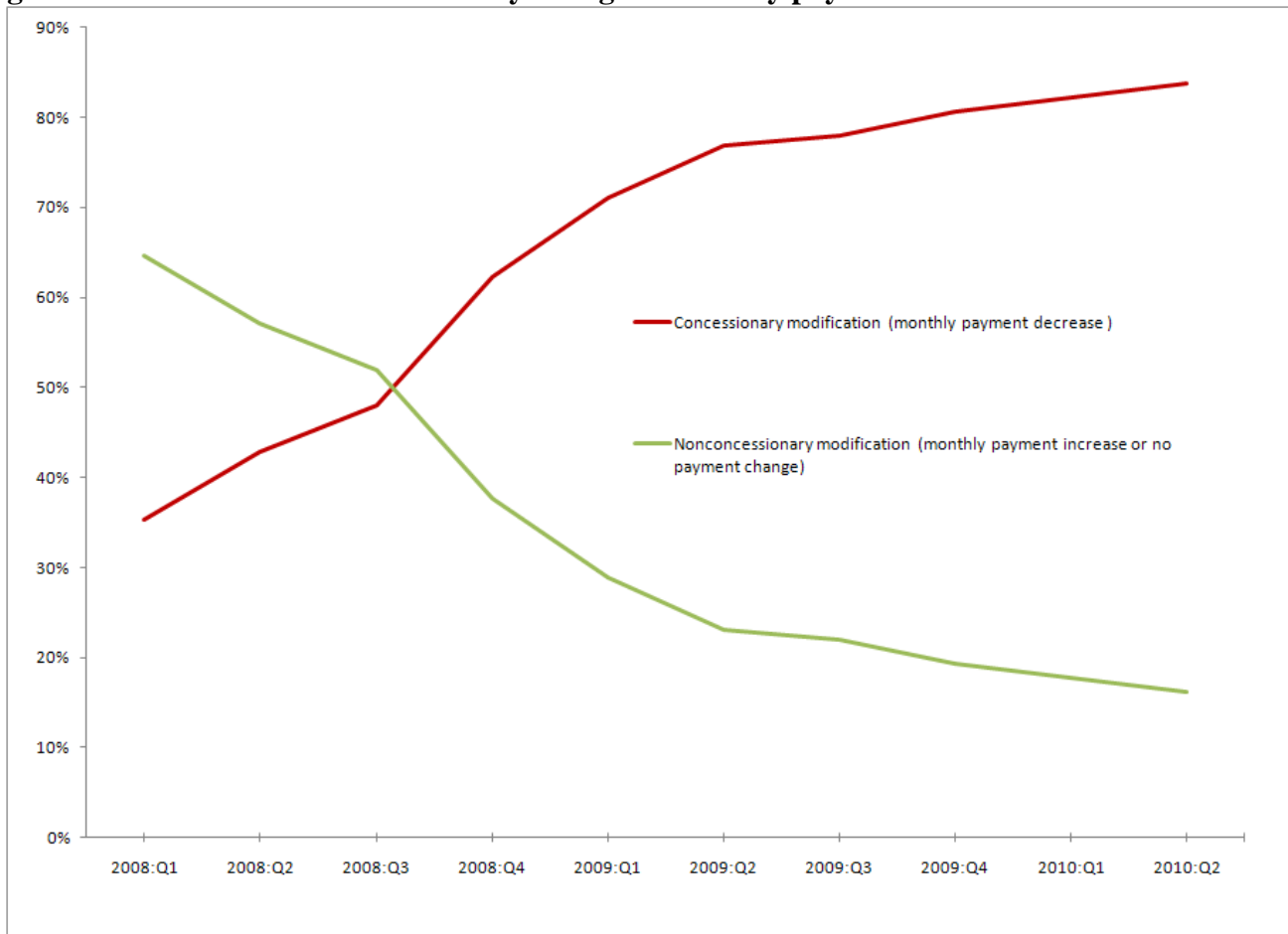


# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

with little chance of selling the home. Servicers' realization that this type of modification is not sustainable under the circumstances of this crisis may have contributed to the decreased use of this option. The decrease in non-concessionary modifications takes place gradually throughout the period, with most of this decrease occurring in the pre-HAMP period, before the second quarter of 2009.

**Figure 4: Loan modifications in Ohio by change in monthly payment**



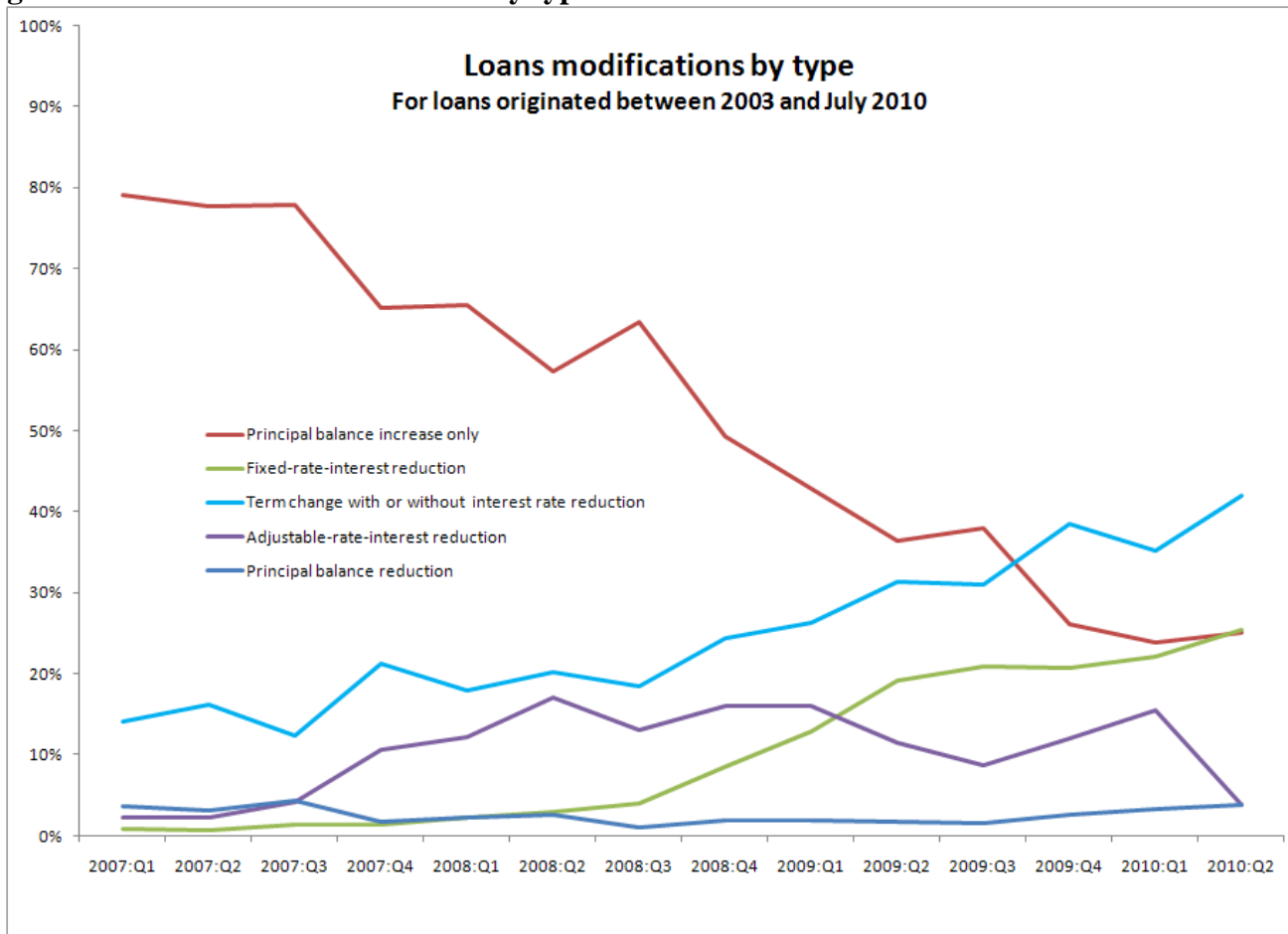
SOURCE: Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston.

In our examination of changes in the types of modifications, we also see that loan modifications involving term changes and fixed-interest-rate reductions have increased, while modifications that reduce the principal balance continue to be almost non-existent (see figure 5). However, as with non-concessionary modifications, those concessionary modifications that increase the principal balance without making any additional changes to the loan terms have reduced dramatically. Modifications with increases in the principal balance possibly result from capitalizing late fees and missed payments. Increases range from 3 to 7 percent of the remaining balance at the time of modification.

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

**Figure 5: Loan modifications in Ohio by type**



**SOURCE:** Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston.

We further look into the possibility that differences in the loan modification process may have decreased the probability of re-default. For this, we perform a basic survival analysis (Cox regression) on modified loans. Loans enter the process at modification and exit if they fail—that is, once they hit 60 days of delinquency post-modification—or if they are paid off, liquidated, or transferred. Explanatory variables include FICO score and loan-to-value ratio at origination; monthly payments; whether the loan is privately securitized or government- or portfolio-held; and whether or not the modification reduces the monthly payment.

The regression analysis is performed for the overall data set, and then for the smaller combined pre-HAMP and post-HAMP time periods. Estimates for the overall sample only are presented in table 3. Our results confirm that loan modifications with payment decreases perform significantly better than those that either maintain or increase the monthly payment. Hazard ratios are a measure of the relative likelihood of re-default for modified loans according to their characteristics. For instance, the hazard

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

ratio corresponding to payment decrease modifications is 0.700 in the overall period model (and the reduced period as well). This means that re-default chances are about 30 percent ( $100 \times [0.70 - 1] = -30$ ) lower for concessionary modifications, holding all other variables constant. And this feature—a reduction of monthly payment—is the one that most influences re-default probabilities.

Other variables matter as well, as expected, but have less effect on the chances of re-default. Who services or holds the loan seems to matter. The hazard ratio for the privately securitized dummy is 1.13, meaning that privately securitized delinquent loans that are modified are about 13 percent ( $(100 \times [1.13 - 1]) = 13$ ) more likely to re-default than portfolio loans.<sup>8</sup> As one might expect, lower FICO scores and larger monthly payments pre-modification increase the chances of re-default. Loan-to-value ratios, on the other hand, do not significantly influence the survival rates in the sample.

**Table 3: Cox regression on survival of modified loans in Ohio**

	Hazard ratio	Robust standard errors	z	p-value
Private-securitized dummy	1.129	0.0290	4.70	0.000
Government/GSE held dummy	0.953	0.0244	-1.89	0.059
FICO*	0.881	0.0094	-11.89	0.000
Loan to Value*	1.005	0.0116	0.42	0.677
Monthly payments*	1.160	0.0110	15.58	0.000
Payment decrease dummy	0.700	0.0145	-17.16	0.000
Dependent variable: Probability of re-default No. subjects = 20 824 No. observations = 154 343 Std. err. adjusted for location (zip-code) clusters *Variables are standardized				

**SOURCE:** Calculations based on loan modification flagging algorithm on LPS data. Algorithm provided by researchers at the Federal Reserve Banks of Atlanta and Boston.

## Conclusions

While our examination shows that relatively few delinquent loans in Ohio are being modified, recent modifications appear to be more successful than past ones. Loans modified within the 10 months following HAMP (from May 2009 onward) are performing better than those that were modified within a year of HAMP’s launch. This recent uptick in performance of modified loans can be attributed in part to a steady move toward more concessionary modifications and away from modifications that did not take affordability into account.

Still, the small percentage of seriously delinquent loans being modified in Ohio, coupled with declining self-recovery rates, suggests that current policy efforts have not been able to effectively cope with the

Written by Francisca Richter (research economist), Lisa Nelson (senior policy analyst), and Youngme Seo (visiting scholar)  
 Produced by the Community Development Department of the Federal Reserve Bank of Cleveland  
 For additional research, go to [www.clevelandfed.org/CommunityDevelopment](http://www.clevelandfed.org/CommunityDevelopment)

# A Look Behind the Numbers: Mortgage Delinquencies in Ohio: Are Loan Modifications Stemming the Tide?

Volume 3 Issue 1

---

foreclosure crisis to date. The administration and some large servicers have recently placed more emphasis on programs directed to borrowers for whom a modification is not viable. These programs range from facilitating short sales or deed- for-lease actions to allowing former owners to stay in the homes as renters. But unlike loan modification programs, these alternatives are relatively new and less familiar to borrowers and counselors. According to our survey, most counselors report having heard about them, although few had used them as of May 2010.<sup>9</sup>

This report's findings highlight the need to pay closer attention to programs that offer alternatives to loan modifications in the months to come. Periodic reports on HAFA, similar to those that are produced for HAMP, ought to provide feedback for better policy on loss mitigation strategies and practices.

---

<sup>1</sup> Percents calculated from the June and July Making Home Affordable Program Reports respectively. Reports can be found at [FinancialStability.gov](http://FinancialStability.gov).

<sup>2</sup> The algorithm to flag possibly modified loans was generously provided by Kristopher Gerardi and Paul S. Willen at the Federal Reserve Banks of Atlanta and Boston, respectively. Description of the algorithm is available at <http://www.bos.frb.org/economic/ppdp/2009/ppdp0904.pdf>

<sup>3</sup> This survey tool was developed by Jeffrey Gatica, a colleague at the Federal Reserve Bank of Cleveland.

<sup>4</sup> In this analysis, we include loans that are owner-occupied and those that are not owner-occupied. Approximately, 93 percent of the loans included in this analysis are owner-occupied.

<sup>5</sup> The algorithm accounts for changes in both fixed- and adjustable-interest-rate loans.

<sup>6</sup> For both periods, loans are flagged as modified if they experience one or more changes in their terms, and have been delinquent at least once within the year prior to modification.

<sup>7</sup> Prior to August 2009, borrowers with FHA loans were not eligible for HAMP modifications. Only loans owned by Fannie Mae and Freddie Mac were eligible for HAMP. This may help explain some the increase in modifications of FHA loans.

<sup>8</sup> For the reduced pre and post HAMP sample, the difference in re-default rates between privately securitized and portfolio loans is estimated at 7 percent.

<sup>9</sup> One reason given for the lack of use was that servicers were not providing these possible alternatives to modifications.