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THE EFFECT OF THE PRINCIPAL REDUCTION ALTERNATIVE (PRA) ON REDEFAULT RATES IN THE HOME AFFORDABLE MODIFICATION PROGRAM (HAMP): EARLY RESULTS[1]

EXECUTIVE SUMMARY

Since the inception of the Making Home Affordable Program, over one million homeowners have had their mortgages permanently modified through the Home Affordable Modification Program (HAMP). As of May 2012, over 63,000 homeowners have received permanent modifications with loan principal reduction under HAMP PRA[2]. This document presents an analysis of the performance of HAMP modifications with and without PRA. To date, this analysis has shown the following results:

- Payment reduction is an important driver of HAMP modification performance.

- HAMP modification redefault rates also fall as the loan's after modification mark-to-market loan-to-value, or MTMLTV, ratio decreases (i.e. as the size of the loan's current principal balance relative to the home's value decreases).

- HAMP PRA participating servicers tend to use the principal reduction feature on loans that have relatively riskier credit characteristics than the overall HAMP population - borrowers with much lower credit scores and that are more seriously delinquent at time of modification.

- A logistic regression controls for these riskier characteristics. The regression shows that for a given payment reduction, homeowners who received a HAMP modification with principal reduction perform better than homeowners who receive a HAMP modification without principal reduction.

### EARLY EFFECTS OF HAMP PRA ON REDEFAULT RATES

In June 2010, the U.S. Department of the Treasury announced the HAMP Principal Reduction Alternative (PRA) program. HAMP PRA provides financial incentives to investors for reducing principal owed by homeowners whose homes are worth significantly less than the remaining balance owed on the mortgage. As of May 2012, homeowners have been granted over 63,000 HAMP PRA permanent modifications.

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[1]The logistic regression described in this paper was performed by Fannie Mae in its role as program administrator under Treasury's Making Home Affordable Program. The data points, figures and tables reflected herein were sourced from Fannie Mae as program administrator.

[2] Fannie Mae and Freddie Mac do not participate in the PRA program.

HAMP data show that the amount of the monthly payment reduction affects the performance of HAMP modifications. Twenty-four months after converting to a permanent modification, there is a 28 percentage point difference in the redefault rate between loans that received a 20% or less monthly payment reduction and loans that received more than a 50% monthly payment reduction. Figure 1 shows the redefault curves by the percent of monthly payment reduction.
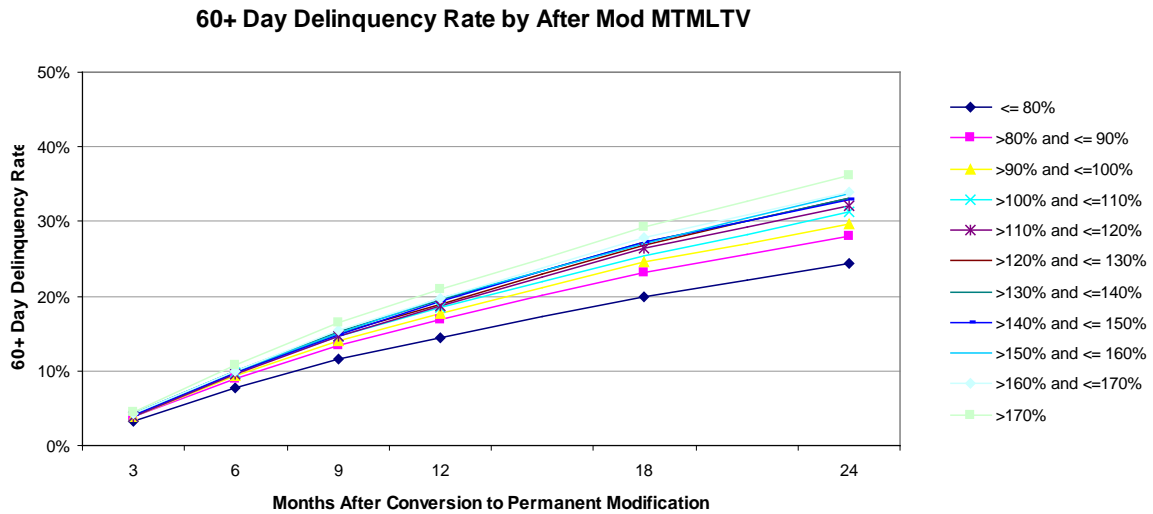
Figure 1. 60+ Day Delinquency Rate by Payment Reduction
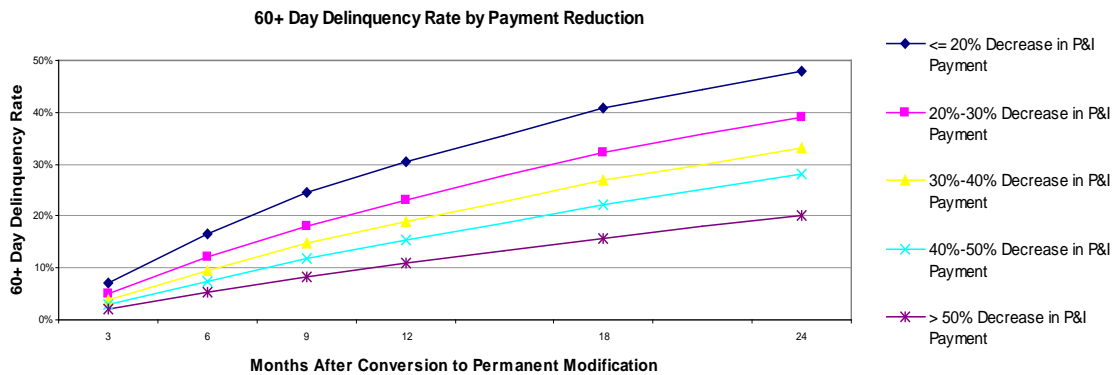
Source: Making Home Affordable Program System of Record - data through March 2012

The redefault rate of HAMP modifications also decreases as the after-modification MTMLTV ratio decreases. At 24 months, loans with less than or equal to 80% MTMLTV redefault at a rate that is 12 percentage points lower than loans with more than 170% MTMLTV. Figure 2 shows the redefault curves by MTMLTV. The gap in the redefault rate between loans with higher and lower post-modification MTMLTVs increases as the loans age. This gap is smaller for the redefault rate after 6 months than for the redefault rate after 24 months.

Figure 2. 60+ Day Delinquency Rate by After Mod MTMLTV

60+ Day Delinquency Rate by After Mod MTMLTV

Legend:
- <= 80%
- >80% and <= 90%
- >90% and <=100%
- >100% and <=110%
- >110% and <=120%
- >120% and <= 130%
- >130% and <=140%
- >140% and <= 150%
- >150% and <= 160%
- >160% and <=170%
- >170%

Y-axis: 60+ Day Delinquency Rate (0% to 50%)
X-axis: Months After Conversion to Permanent Modification (3, 6, 9, 12, 18, 24)

Source: Making Home Affordable Program System of Record – data through March 2012

To date, participating servicers have selected loans with riskier credit characteristics to receive the principal reduction feature under HAMP PRA – loans that are more seriously delinquent at the time of modification and borrowers with lower overall credit scores than all HAMP modifications.

If one were to look only at the early redefault performance of HAMP PRA versus all HAMP modifications without controlling for these riskier characteristics, it would appear that loans modified with the principal reduction feature under HAMP PRA are performing slightly worse than overall HAMP modifications, as shown in Table 1.

Table 1. HAMP modification performance after 6 months without controlling for risk characteristics

All modifications		Modifications with PRA forgiveness	
Number of permanent modifications	Percent 90+ days delinquent at 6 months	Number of permanent modifications	Percent 90+ days delinquent at 6 months
800,613	5.80%	30,345	6.30%

Source: Making Home Affordable Program System of Record – data through March 2012

The standard approach in statistical analysis for disentangling the impacts of different factors influencing an outcome is called regression analysis. In this case, a logistic regression controls for risk characteristics, which allows a better comparison of the performance of HAMP modifications with and without the principal reduction feature. These loan characteristics include MTMLTV, origination loan-to-value ratio, percent monthly payment change, credit score at modification, age of the loan, delinquency of the loan at time of modification, investor type, vintage of the modification, unpaid principal balance of the loan at time of modification (including all past due amounts), delinquency number of months in trial, whether the loan received principal reduction, whether the modification was done under the HAMP PRA program or received principal reduction under traditional HAMP, whether the loan received principal forbearance, geography, servicer, and home price forecast following the modification.

This analysis indicates that for loans with similar characteristics, there is a measurable improvement in performance when the HAMP modification includes principal reduction.

This result is consistent with an assumption of the HAMP net present value (NPV) default model that a homeowner who receives a modification with principal reduction will perform similarly to a homeowner at the same post-modification MTMLTV who receives a modification without principal reduction.

Some have wondered if principal forbearance has a similar effect on modification performance as principal reduction. These results indicate that a homeowner receiving a HAMP modification with principal forbearance performs slightly better than a homeowner who receives a HAMP modification without forbearance as well as without principal reduction. This improvement, though, is smaller than the improvement seen for a HAMP modification with principal reduction.

The regression analysis allows us to separate the impact of the principal reduction from other characteristics that influence default. For illustrative purposes, we constructed a hypothetical homeowner with a pre-modification MTMLTV of 165% and a 10% chance of redefault (90+ days delinquent) within six months without a payment reduction. We then consider the redefault rate after 6 months implied by the same regression model for three different modifications, each of which provides a 30% payment reduction. The three different modifications provide the 30% payment reduction in the following ways, via:

- Rate reduction and term extension to achieve a 30 percent payment reduction, an example of a standard HAMP modification: The model shows that the homeowner would have a 4.6% chance of redefault.

- Forbearance (no rate or term adjustment) to achieve a 30 percent payment reduction: The model shows that the homeowner would have a 4.4% chance of redefault.

- Principal reduction (no rate, term, or forbearance adjustments), to achieve a 30 percent payment reduction and an after-modification MTMLTV of 115%: The model shows that the homeowner would have a 3.5% chance of redefault.

Table 2 illustrates these results for our hypothetical borrower with an MTMLTV of 165%.

Table 2. Estimated Default Outcomes by Modification Structure for Hypothetical Borrower with 10 percent initial default probability.

Modification Structure	Probability of advancing to 90-day delinquency within 6 months
No modification	10.0%
Rate reduction and term extension to achieve a 30 percent payment reduction (no change in MTMLTV)	4.6%
Forbearance to achieve a 30 percent payment reduction (no change in MTMLTV)	4.4%
Principal reduction to achieve a 30 percent payment reduction and MTMLTV of 115 percent	3.5%

Note that these early redefault rates are just a fraction of expected redefault probabilities over the loan's lifetime, and so the absolute differences in probabilities that we see here would be expected to increase over time.

CONCLUSION

While it is still early, data show that there is a measurable improvement in borrower performance when the HAMP modification includes principal reduction. The outcome of the regression test is consistent with the assumption in the HAMP NPV default model that a homeowner who receives a modification with principal reduction to a certain MTMLTV will perform similarly to a homeowner getting a modification at that MTMLTV without principal reduction. In summary, the table above demonstrates that principal reduction leads to a 20% reduction in redefault probabilities as compared to a modification utilizing forbearance, and principal reduction leads to a 24% reduction in redefault probabilities as compared to a modification that receives payment reduction, but neither forgiveness nor forbearance.