

Principal Reduction Modification Math

A Report by Rick Rogers, JD/MBA

Lenders will receive far more value from Principal Reduction modifications than from other mortgage modifications.

Intuitively, that statement doesn't sound right. How could a bank make more money by reducing a \$250,000 mortgage to \$200,000? Here's how:

If enforcing a \$250,000 mortgage is likely to result in foreclosure, the Lender will probably recover less than \$100,000. If reducing the principal balance to \$200,000 is likely to avoid foreclosure, the Lender will likely recover the entire new \$200,000 balance, which is more than double what it might recover if it refuses to reduce the principal balance.

In order to calculate the Lender's financial advantage or disadvantage of granting Principal Reduction modifications, numerical probabilities must be established for the likelihood of outcomes mentioned above.

This report will compare the Net Present Value (NPV), of standard Home Affordable Modification Program (HAMP) modifications with Principal Reduction Alternative HAMP (PRA HAMP) modifications. If the mortgage principal balance on a home exceeds 115% of its market value, PRA HAMP will reduce the principal balance by that difference over a three year period, if the borrower stays current on the mortgage during that time. PRA HAMP will also reduce interest rate, extend term, and include principal forbearance, if necessary, to reduce the monthly payment to 31% of gross income. Standard HAMP modification will do all but reduce principal balance.

Participating HAMP Lenders and Servicers, herein collectively referred to as Lenders, were required to start evaluating cases for PRA HAMP in the last quarter of 2010. Regardless of the outcome of those evaluations, no PRA HAMP modification would ever be required of the Lender. PRA HAMP modification is strictly optional. A Lender could reject the application for any reason or for no reason at all.

It's encouraging that some Lenders have issued PRA HAMP modifications with large principal reductions. That suggests those few Lenders understand the economic advantage of PRA HAMP, but it's too early to tell how many will embrace the concept and actively participate.

Re-default Rate: As it relates to mortgage modifications, this is the rate at which homeowners default after receiving a modification. Unless otherwise noted, re-default rate refers to the rate during the 12 months immediately following the modification. The impact of a re-default will have the same financial result for HAMP and PRA HAMP modifications.

Re-default rate is the single most important factor when comparing the NPV of a PRA HAMP with that of a standard HAMP modification. A lower re-default rate for Principal Reduction modification provides the Lender savings to offset the reduction in principal balance. The key question when comparing PRA HAMP to standard HAMP modification is whether the savings from a reduction in re-default rate will be more or less than the amount of the principal reduction. For the answer to that question, one can look to **The Federal Reserve Bank of New York Staff Report:**

Second Chances: Subprime Mortgage Modification and Re-Default by Andrew Haughwout, Ebiere Okah, and Joseph Tracy, *Federal Reserve Bank of New York Staff Reports*, no.417, December 2009; revised August 2010

This report, referred to herein as the FRB Report, was the result of no small effort. It is a 46-page, well researched and crafted report utilizing a sample of tens of thousands of mortgage modifications on which to draw conclusions. Principal reduction modifications were included in a sufficient number for the authors to state the following conclusion in the Abstract: "... the re-default rate declines relatively more when the payment reduction is achieved through principal forgiveness as opposed to lower interest rates."

On page 30, the report states "restoring the borrower's incentive to pay in this way (referring to principal reduction) nearly quadruples the reduction in re-default rates achieved by payment reductions through interest rate modifications and term extensions alone." It goes on to state the conclusions "confirm the findings from previous research that borrower equity is a critical determinant of loan performance..." The report concludes modifications will be more effective if program designs are more attentive to borrower incentives to pay, i.e., principal reduction.

HAMP vs. PRA HAMP: While the FRB Report does not specifically compare PRA HAMP with HAMP, it does provide an applicable estimate of the difference in re-default rates for principal reduction and non-principal reduction modifications.

Attached are NPV Test results with parameters of the above referenced typical case, comparing a HAMP to a PRA HAMP modification, utilizing the re-default rate differential used in the FRB Report. Following are the inputs used for the test:

Mortgage Balance	\$250,000	Market Value	\$175,000
Gross Income	\$ 4,000	Current House Payment	\$ 1,966
Re-default Rate		Principal Reduction	\$ 48,750
HAMP	40.0%		
PRA HAMP	10.7%		

The NPV of a single, successful standard HAMP modification (\$224,112 in the above case) will always be greater than the NPV of a single, successful PRA HAMP modification (\$188,955 in the above case), due to the PRA HAMP principal reduction. However, the FRB Report suggests

4 of every 10 standard HAMP modifications will fail, while only about 1 in 10 PRA HAMP modifications will fail. Due to low Lender recovery rates in foreclosure (\$69,043 in the above case), the average NPV for PRA HAMP modifications will exceed that of standard HAMP modifications.

Based on the above values, below is a simple calculation of the NPV of 10 standard HAMP modifications and that of 10 PRA HAMP modifications.

NPV Comparison of HAMP vs. PRA HAMP Modifications

NPV of 10 Standard HAMP Modifications:

6 successful modifications	6 x \$224,112 =	\$1,344,674
4 re-defaults with foreclosure	4 x \$ 69,043 =	<u>\$ 276,172</u>
Total NPV for 10 modifications		\$1,620,846

NPV of 10 PRA HAMP Modifications:

9 successful modifications	9 x \$188,955 =	\$1,700,598
1 re-default with foreclosure	1 x \$ 69,043 =	<u>\$ 69,043</u>
Total NPV for 10 modifications		<u>\$1,769,641</u>

NPV Advantage of 10 PRA HAMPs over 10 Standard HAMPs = \$ 148,794

NPV Average PRA HAMP Advantage per individual modification = \$ 14,879*

* Inflated estimate due to rounding. Actual advantage based on FRB Report re-default rate is \$14,164 in this case.

There are also significant Lender tax benefits of PRA HAMP. In this case, the tax savings could amount to almost \$20,000 in the first three years following the modification. Without tax benefits, the PRA HAMP NPV advantage over standard HAMP is more than \$14,000 per typical modification. With tax savings, that Lender NPV advantage could double to over \$30,000. Tax

benefits may vary widely among Lenders, and may provide no benefit at all for those with no profit to shelter. With or without tax savings, the financial gains from PRA HAMP modifications are considerable.

Even if PRA HAMP re-default rates were twice that indicated in the FRB Report, or if the Lender received no tax savings, or if both of those unlikely events transpired, the NPV for PRA HAMP modifications would still exceed the NPV for standard HAMP.

Reserve Requirements: A PRA HAMP will give rise to an increase in Lender cash reserve requirements. One could argue reserve requirements should be lowered by PRA HAMP, since those modifications are four times less likely to suffer re-default. Reserve requirements may be of little or no concern to large Lenders, but it should be recognized as a by-product of PRA HAMP.

Accounting Treatment and Reserve Requirements are “paper” issues, if Lenders believe they are issues at all. The solutions to these problems do not require Lender sacrifice of revenue, federal funding, jobs creation, or cutbacks in spending. A couple of waves of the appropriate federal wands could nicely resolve these issues, if they are important to Lenders. Principal Reduction modifications are far too important to the economic resurgence of this country to allow “accounting and administrative” issues to block the way.

Conclusion: The FRB Report demonstrates Principal Reduction modifications will significantly reduce re-defaults, thereby creating substantially more value to Lenders than other modifications. When considering the Lender’s potential tax benefits, the already significant benefit of PRA HAMP is further increased. In the unlikely event the Lender receives no tax savings and the re-default rate for PRA HAMP is double that projected in the FRB Report, the NPV for PRA HAMP modifications will still be greater than the NPV for standard HAMP modifications.

Under HAMP, a participating Lender is required to modify when doing so generates the most value for itself. Consistent with the HAMP concept, a PRA HAMP modification should be mandatory for participating Lenders whenever its NPV exceeds that of both the standard HAMP modification and the “No Modification” alternatives.

For purposes of NPV calculation, the estimated PRA HAMP re-default rate should be 29.3 percentage points less than the standard HAMP re-default rate, as in the FRB Report. Over time, historical re-default rates should replace this proposed initial rate.

Under PRA HAMP, Lenders will achieve far greater financial benefits than with any current modification program, and borrowers will have a fighting chance to regain equity and security in their home. Even if prices remain flat and borrowers make no improvements to their homes, HAMP Principal Reductions combined with scheduled payments will reduce mortgage balances to within 5% of home values in just three years. That fact will reinvigorate homeowners and

provide inspiration to stay current on mortgage payments for the many who today have no incentive nor rational hope to save the home they once cherished.

About the Author: Rick Rogers, JD/MBA is Executive Director of the Rogers Law Group, NFP, a firm dedicated exclusively to Home Preservation. For over 20 years, he has composed, utilized, and trained others in the use of NPV Tests for the purpose of comparing real estate alternatives nationally and internationally. For the last 10 years, his practice has been devoted to foreclosure, mortgage default, and related matters. He may be contacted at rrogers@therogerslawgroup.com or through www.therogerslawgroup.com .

Attachment: PRA HAMP Standard Waterfall Process with Summary of HAMP and PRA HAMP NPV Results Based on Re-Default Rate Differential in FRB Report

Comparison of PRA HAMP vs Standard HAMP

NPV for PRA HAMP Loan Modification	\$176,354
NPV for Standard HAMP Loan Modification	<u>\$162,190</u>
PRA HAMP Advantage (Disadvantage) over HAMP	<u><u>\$14,164</u></u>
NPV for No Loan Modification	\$65,922

NPV Test Recommendation:	Modify using PRA HAMP
---------------------------------	------------------------------

	Current Amounts	Desired Amounts
Mortgage Balance	\$250,000	\$201,250
Principal Forbearance to be converted to Reduction		\$48,750
Additional Forbearance Necessary to reach 31% PITIA		\$0
Estimated Market Value	\$175,000	\$175,000
Loan-to-Value Ratio	143%	115%
Borrower Total Gross Income	\$4,000	\$4,000
Target PITIA - 31%		\$1,240
Principal + Interest	\$1,499	\$774
Taxes	\$417	\$417
Insurance	\$50	\$50
Assessments & Other	\$0	\$0
PITIA	\$1,966	\$1,241
DTI	49%	31.02%
Desired Loan % Rate		2.000%
Months Remaining on Mortgage	330	341

For an affordable, sustainable mortgage, the borrowers request the following modified terms:

- Loan re-amortized to 341 0.000%
- \$0 Principal Forbearance without interest until end of loan or pay-off
- Initial interest rate for years 1 - 5 2.000% with P&I of \$774
- Interest rate in year 6 3.000% with P&I of \$840
- Interest rate in year 7 4.000% with P&I of \$920
- Interest rate in year 8 4.740% with P&I of \$984
- Interest rate in years 9 - 40 4.740% with P&I of \$984