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Breaking it down: How to understand the impact of Obama's mortgage policies on portfolio values

By Jonathan Glowacki, Kyle Mrotek, Ken Bjurstrom

Several hundred thousand struggling borrowers have applied for assistance under President Obama's Making Home Affordable program—and 9 million may ultimately benefit.¹ But not all who apply will be eligible, and not all eligible borrowers will apply. For mortgage investors, sorting out the ultimate impact of the program on the value of their portfolios can be a daunting task.

This article illustrates a methodology that can help investors predict, and even influence, how these policies may affect cash flows in their loan portfolio.

Estimating the intrinsic value of this program requires consideration of the borrower's income and debt level in addition to other characteristics of the property and the loan.

The Making Home Affordable initiative offers two main options to prevent foreclosure: refinancing and loan modification. Each of these options comes with a detailed list of criteria that borrowers must satisfy. Estimating the program's impact involves estimating losses of the current portfolio, filtering the portfolio for eligible loans, filtering the eligible loans for likely participants, and re-estimating losses on the portfolio after taking into consideration loan modifications and refinances. To the extent that investors or servicers can influence borrower participation, they can also influence the impact of the programs on cash flows in their loan portfolios.

Providing homeowner refinancing opportunities

The refinancing portion of the program was created to help as many as 5 million qualifying borrowers get lower interest rates,

or change from balloon-payment or adjustable-rate mortgages (ARM) to more affordable 15-year or 30-year fixed-payment fixed-rate mortgages. These borrowers are in good standing, but their property values have depreciated substantially relative to the size of the loan, leading to a high current loan-to-value (CLTV) ratio. They typically have some equity in the home, but tightening credit has made it difficult to refinance.

Finding the intrinsic value of this program for a particular portfolio involves estimating the portfolio's total cash flow losses, i.e., future interest shortfalls and principal write-downs, with and without the program, and calculating the difference. The intrinsic value of the program is the added benefit an investor can expect to receive that is directly attributable to these two Obama housing initiatives. Databases with individual loan-level data typically provide the key variables for analysts to estimate the portfolio value without the program. Analysts can estimate the likelihood of default for individual borrowers and roll these up to the portfolio level to develop an estimated loss for the entire portfolio.

The portfolio value with the program depends on which loans are eligible, and analysts must first filter the portfolio according to program criteria. Some of the qualification criteria include that the loan must be owned by a government-sponsored enterprise (GSE), i.e., Freddie Mac or Fannie Mae; that it is no more than 30 days delinquent in the last 12 months; and that it has a CLTV ratio between 80% and 105% on a first mortgage (see Figure 1).

Borrowers with interest rates close to the current rates, or who face prepayment penalties, have less of an incentive to refinance even if they are eligible. Therefore, another filter must be applied to eliminate these borrowers, using a threshold interest rate on

¹ Making Home Affordable Progress Report: May 14, 2009. Retrieved May 29, 2009, from <http://www.treas.gov/press/releases/docs/05142009ProgressReport.pdf>

fixed-rate mortgages and assuming all non-fixed-rate mortgages will refinance. The portfolio remaining after all these filters consists of all loans that are eligible and have an incentive to refinance under the plan.

Last, not all eligible borrowers who could benefit will actually choose to refinance. Borrowers may be unaware of the program, may prefer their current monthly payment under a balloon-payment or ARM loan, or may not have the proper documentation to refinance under the plan. Servicer data can be used to estimate the percentage of remaining borrowers who will go through with the plan.

To illustrate with a simplified example, consider a hypothetical portfolio of 1,000 loans with estimated cash-flow losses of 10% of the original balance. Suppose that, using the filtering approach, we find that 150 of these loans are eligible and have an incentive to refinance under the plan. After looking at the individual characteristics of these 150 loans, we determine that 80% of them (or 120 loans) are likely to refinance under the plan.

The Making Home Affordable program will likely reduce losses on loan portfolios by expanding refinancing opportunities and by providing modification options for delinquent loans to avoid default.

We then remove these 120 loans from the original portfolio to create a filtered portfolio of 880 loans, and re-estimate the losses on the filtered portfolio. If these losses total 8% of the original balance, then the estimated value of the refinancing program is 2% of the original balance (the difference between the original portfolio's 10% expected losses and the 8% expected losses on the filtered portfolio).

This approach gives the investor some room to optimize the portfolio value in response to the plan by increasing the percentage of qualifying borrowers who participate. If our hypothetical portfolio includes 15 ARM loans on schedule to reset in the next six months, the investor can encourage these 15 borrowers to take advantage of the program, thereby reducing their probability of default and the potential losses on the portfolio.

Facilitating loan-modification arrangements

The loan-modification plan is a \$75 billion initiative designed to facilitate modifications for up to 4 million at-risk borrowers, and share the cost with loan servicers, whose participation is voluntary.² The servicer determines if a borrower is at risk—either at or near

default, or experiencing extraordinary hardship—and if a reasonable reduction in his monthly payment could prevent the borrower from going into foreclosure.

Estimating the intrinsic value of this program requires consideration of the borrower's income and debt level in addition to other characteristics of the property and the loan. Investors must also consider the degree of modification that each loan may require, as well as the expected cash-flow losses on modified loans. However, the methodology is similar: estimate losses on the original portfolio, apply participation filters, and re-estimate losses on the filtered portfolio.

The value of this program comes from avoiding defaults on delinquent loans. So estimating portfolio losses without the program involves calculating the expected losses from delinquencies. Delinquency status is used along with other variables to estimate the probability of default (e.g., a loan 30 days delinquent is less likely to default than a loan 60 days delinquent). Multiplying the default probability by the severity of the loss gives the expected loan-level losses, which are rolled up to the portfolio level to give an estimate of future losses.

The portfolio value with the program depends on eligibility, as before, but also on what modifications are actually performed. The eligibility criteria are somewhat different from the refinancing plan. For example, there is no CLTV limit, but eligibility hinges on the borrower's debt-to-income (DTI) ratio, or the ratio of mortgage payments (including interest, taxes, and insurance) to gross monthly income.

The program shares the cost with the servicer of reducing the DTI ratio from 38% to 31%. If the initial DTI ratio is above 38%, then the borrower and the servicer must work together to reach this eligibility threshold. The servicer is not obligated to make this reduction, but the plan provides additional incentives to both borrowers and servicers who participate. The details of these incentives can be found on the Making Home Affordable Web site.

Servicers apply a sequence of modifications to reach the target 31% DTI ratio. An iterative loan-by-loan program can be designed for each step in order to estimate which loans qualify and will go through with modification. The first red arrow in Figure 2 indicates the start of the process for eligible loans. First, servicers must reduce the interest rate to as low as 2% for five years, after which the rate is increased by 1% per year up to the current rates offered. If this does not achieve a 31% DTI ratio, then the servicer will extend the loan term up to 40 years. Next (if necessary), the servicer will forbear principal with no interest; this could result in

² Fourteen servicers, including the nation's five largest, are currently participating. Combined with Fannie Mae and Freddie Mac, this means that 75% of all loans in the United States may be covered (although only some of these will meet the other eligibility criteria). As of May 14, these 14 servicers had made 55,000 modification offers and sent 300,000 modification information letters to borrowers. (Making Home Affordable Progress Report: May 14, 2009). Retrieved May 29, 2009, from <http://www.treas.gov/press/releases/docs/05142009ProgressReport.pdf>

Figure 1

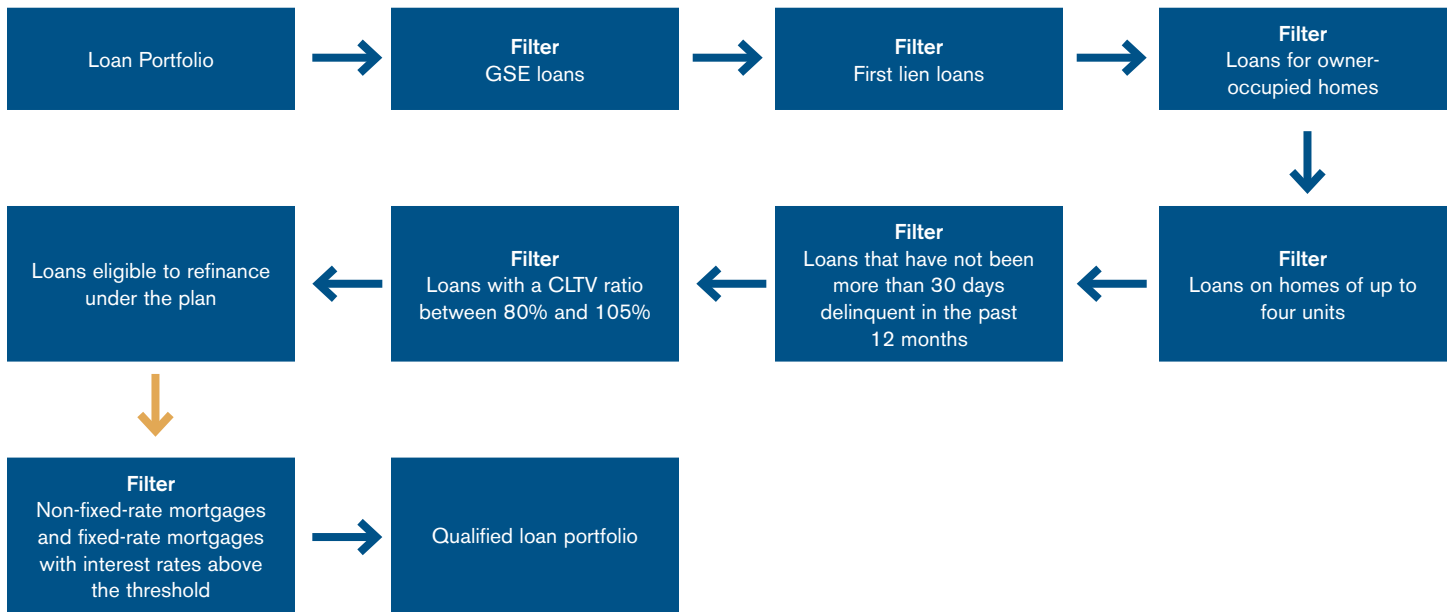
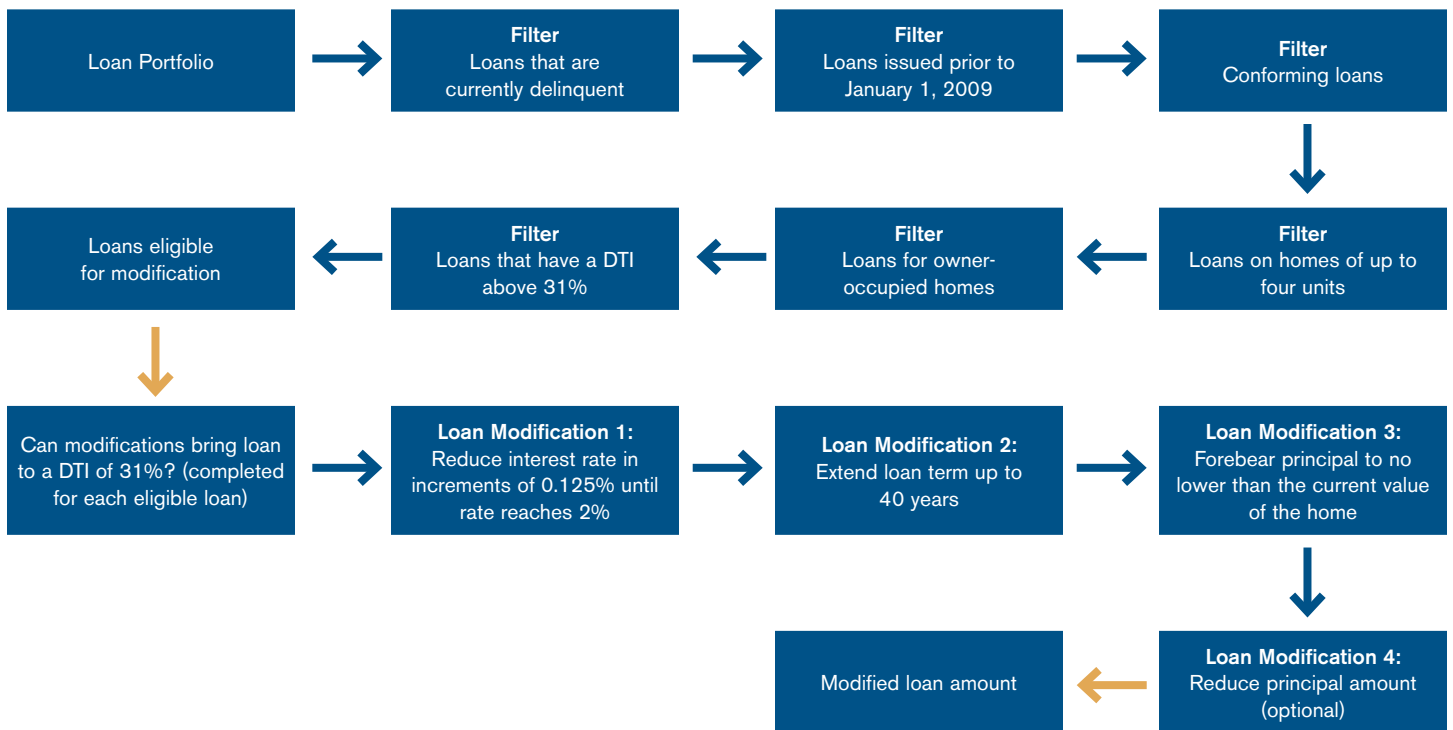


Figure 2



a balloon payment that does not accrue interest. Finally, servicers may, but are not obligated to, reduce the principal as low as the current home value. The mortgage owner must agree to each potential modification. Once the DTI reaches 31% the loan is considered modified; if all of these steps fail to reach that target, then the loan is written off as a loss.

For a simplified example, consider again our hypothetical portfolio of 1,000 loans and suppose 100 of these loans are delinquent. If we multiply the probability of default for these delinquent loans by the potential severity of these defaults, we arrive at a total expected loss on the original portfolio balance—say 5% for this example. After applying the program participation filters to the delinquent loans, suppose 40 of the borrowers modify their loan terms, leaving 60 delinquent loans. The estimated cash-flow loss is then calculated on the filtered portfolio of 960 loans.

Assume the new expected loss is 3% of the original balance. However, modified loans have a high probability of re-defaulting, so losses on modified loans must also be estimated and added back to the new loss rate. If the estimated losses on modified loans are 0.5% of the original portfolio value, then the intrinsic value of the loan-modification portion of the Making Home Affordable program is 1.5% of the original balance (5.0% - 3.0% - 0.5%).

The total intrinsic value of the program for this hypothetical portfolio of 1,000 loans would be 3.5% of the original balance, or the sum of the values from the refinancing and loan-modification portions.

The loan modification analysis also gives the investor some room to optimize the portfolio value in response to the plan. The filter could be organized to select loans that would most benefit the portfolio via loan modification. As before, the investor could focus on encouraging these borrowers to join the program. For example, a filter could select all qualifying loans with a 35% DTI that have been current for most of the loan's life. These borrowers may be going through a short-term hardship, but a modification may be enough to keep them current on payments and reduce the portfolio's losses.

Conclusion

The Making Home Affordable program will likely reduce losses on loan portfolios by expanding refinancing opportunities and by providing modification options for delinquent loans to avoid default. However, it is difficult to determine the exact impact the plan will have on loan portfolios. This article presents a simplified version of a rigorous methodology to estimate the intrinsic value of the program; a more robust analysis on an actual portfolio of loans would be required for a more thorough and realistic illustration of the methodology. The process discussed here is intended to lay the groundwork for a more detailed analysis of the program's value for specific portfolios.

Jonathan Glowacki, Kyle Mrotek and Ken Bjurstrom all work in the Milliman Milwaukee office. To contact them please email respectively:

jonathan.glowacki@milliman.com

kyle.mrotek@milliman.com

ken.bjurstrom@milliman.com

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Inquiries may be directed to:

P&C Perspectives Editor
1301 Fifth Avenue, Suite 3800
Seattle, WA 98101-2605

(206) 624-7940
pnc.perspectives.editor@milliman.com