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## **A Loan Modification Approach to the Housing Crisis**

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### **Abstract**

The housing crisis threatens to destroy hundreds of billions of dollars of value by causing homeowners with negative equity to walk away from their houses. We advocate a legal reform that would allow homeowners to reduce principal while giving mortgage holders an equity interest. Such a plan would give homeowners an incentive to keep or resell their homes, thus reducing the market value loss of homes while protecting the effective value of creditors' interests. Two further elements of the plan are that it uses prices based on the average house price in a particular ZIP code; and it is automated.

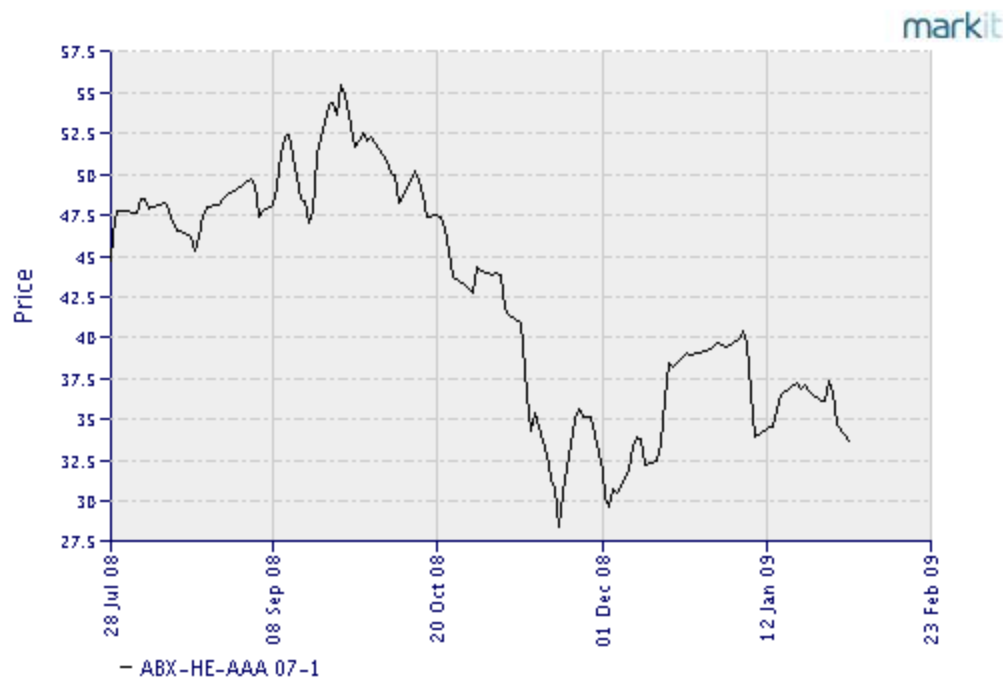
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## **I. Introduction: The Problem**

In 2008, banks commenced foreclosure proceedings on 2.2 million homes. The year 2009 appears to be worse and it has become clear that the real estate crisis is the worst since the Great Depression. Foreclosure is not just a human tragedy, it is an economic tragedy as well. Foreclosed houses are poorly maintained and sometimes looted (Quirk et al 2009). As a result, foreclosed properties lose a substantial fraction of their value, about 30 percent (Campbell et al 2009; Madar et al 2008; White et al 2008). If this was not enough, foreclosure has some very negative spillover effects. Forced sales depress the value of the surrounding properties (Campbell et al 2009; Immergluck et al 2006).<sup>1</sup> When forced sales become frequent, they undermine the value of a neighborhood, pushing other people to sell or default. Finally, widespread defaults reduce the social stigma of defaulting, leading to the possibility of a vicious circle of default causing other defaults, depressing real estate prices further and causing still more defaults (Guiso et al 2009).

The market seems to anticipate this doomsday scenario. Figure 1 reports the price of an index of AAA mortgage-backed securities in the period July 2008-February 2009.<sup>2</sup> In spite of the fact that all the components of this index were AAA rated at origination, meaning that the underlying loans were low-risk, prices in February oscillated around 35 cents on the dollar. Unless we attribute these prices to a deep illiquidity, it is hard to make sense of them without assuming a contagion effect on default and a large deadweight loss conditional on default.<sup>3</sup>

Figure 1: Price of an index mortgage



Even if we were to assume that all securities are backed by mortgages in Merced California (which with a 59 percent drop in prices is the most severely affected Metropolitan Statistical Area of the country) and 100 percent of the underlying mortgages defaulted, the price of this index should not be below 50 cent on the dollar. The holders of securities should expect banks to recover houses worth at least forty cents on the dollar, and so the securities should be valued at least that. The fact that the securities trade at 35 cents implies that the market expects the houses upon foreclosure to be worth significantly less than their current market value, especially if we recognize that less than 100 percent of the mortgages default.<sup>4</sup> Similarly, the fact that to rationalize these prices we need a 100 percent default rate, while even in the worst part of the country we are at 54 percent, implies that the market expects either a large contagion effect or a massive government intervention that forces debt forgiveness or both.

Since about 10 percent of the \$10 trillion mortgages are currently delinquent or in the foreclosure process,<sup>5</sup> the expected deadweight loss for the delinquency started so far will be at least \$300 billion or \$1,000 per person throughout the United States. Avoiding this loss should be a top legislative priority.

A major puzzle is why the market does not avoid these losses. Lenders can do better if they renegotiate loans than if they foreclose on them. To see why, suppose that the outstanding

debt on a house is \$200,000, the market value of the house is now \$150,000, and the foreclosure value of the house is \$100,000. If the lender forecloses, it obtains \$100,000 at best. Alternatively, it could renegotiate the loan with the homeowner for, say, \$140,000. The homeowner now owns a house worth \$150,000, and the bank owns a loan worth \$140,000. The homeowner could resell the house and obtain a profit for \$10,000, or keep the house—in either case, the foreclosure inefficiency of \$50,000 is avoided, as are the negative effects on neighboring houses. With millions of houses currently in foreclosure or close to it, the cost savings from loan renegotiations could be enormous.

However, if loan renegotiation is desirable from an ex post perspective, it can nonetheless create problems for banks and other mortgage investors, which must take into account the effect of loan renegotiations for future credit transactions. If borrowers with outstanding mortgages observe that other borrowers benefit from loan renegotiations, then they will realize that they, too, may be able to renegotiate their mortgage if otherwise they would default. If homeowners anticipate the possibility of renegotiation, they might deliberately maintain thin equity margins so that they can credibly bargain for a loan renegotiation if the value of the house declines. As a result, many banks appear to have a policy of either not renegotiating loans or doing so only in unusual circumstances.

Another reason that loan renegotiations are rare is that the transaction costs of renegotiating loans are high when loans are securitized. Few banks maintain the loans on the books that they originate.<sup>6</sup> Loan originators immediately sell their loans to investment banks and other institutions that pool them and then divide the combined stream of principle and interest payments into securities that are sold on the market. The holder of a security receives payments from a particular pool of loans until the debts are paid off. A loan servicer collects mortgage payments from the homeowner and passes them on until they end up in the pockets of the holders of mortgage-backed securities. Thus, when it comes time to renegotiate the loan, the homeowner cannot communicate with the owners of the loans—there are thousands of them dispersed throughout the world—but must deal with the loan servicer (Ferrell 2009).

The loan servicer probably has no financial incentive to renegotiate the loan. It does not lose if the homeowner defaults. The loan servicer may have a contractual obligation to the MBS holders to renegotiate the loan as foreclosure nears, but the MBS holders will usually not be in a position to enforce these rights. Indeed, when loan servicers do renegotiate loans, they face the

risk of lawsuits from MBS holders who claim that the loan servicer was too generous to the homeowner. MBS holders today may also believe or hope that the government will purchase their MBS's, maybe at par or above-market value, and thus prefer to avoid renegotiations that will lower their value (Larry Cordell et al. 2008).<sup>7</sup> And none of these parties has much interest in ensuring that a borrower's neighbor's house maintains its value rather than being dragged down by a foreclosure.<sup>8</sup> Consistent with these claims, Piskorski, Seru, and Vig find that seriously delinquent mortgages controlled by servicers of securitizations enter foreclosure much more quickly than portfolio loans (Piskorski et al. 2008).

One of the great challenges of the financial crisis, then, is to discover a way to ensure that houses are either kept or sold by their owners, rather than foreclosed, when the owners default on their mortgages because the mortgage exceeds the value of the house. In the jargon, the homeowners have “negative equity” or their loan is “underwater.” The goal is to force a renegotiation between the homeowner with negative equity and the owner or owners of the mortgage.

The system should satisfy a number of criteria. First, and most important, the plan should help those with (1) negative equity and (2) the ability to pay a mortgage on the actual value of the house—and not other people. Homeowners with positive equity will not walk away from their homes or suffer a foreclosure; if they cannot afford their mortgage, they will simply sell the house and either rent or purchase a cheaper house. Homeowners with negative equity *and* with inadequate income for paying an adjusted mortgage should also not receive help, since they will default on the adjusted mortgage.<sup>9</sup>

Second, the plan should be easy to understand and easy to implement. Third, the plan should not make any of the contracting parties worse off. Fourth, the plan should minimize the negative long term effects on the credit market. Fifth, the plan should minimize the burden to taxpayers. Sixth, the plan should be fair, not only for political and moral considerations, but for economic ones too. If the perception of unfairness undermines the moral pressure to pay the debt, it can have disastrous economic consequences as more and more homeowners will walk away from their loans.

In this paper, we propose such a plan. Each household which purchased or refinanced houses located in ZIP codes where house prices dropped more than a certain threshold (let's say 20 percent) from their peak has the right to obtain a reduction in the mortgage to the current

value of its house in exchange for a percentage (let's initially say 50 percent) of the future appreciation of the house above the current level. To determine both the current and the future house prices we shall use the initial purchase price adjusted by the variation in the ZIP code level index. This plan will help reduce the costs from foreclosure by, in effect, giving the homeowner the option to force a renegotiation on the owner or owners of the loan. The biggest problem encountered by all attempts to help homeowners is the slowness of servicers in making any change. Our proposal bypasses this bottleneck by empowering the borrower to start the process.

This process could take place through a loan modification procedure under judicial supervision or through what we will call a prepackaged bankruptcy under Chapter 13 of the U.S. Bankruptcy Code.<sup>10</sup> The homeowner ends up with positive equity in his house, so that he will either maintain the house or sell it outside foreclosure, and the creditor ends up with a claim of greater value than the foreclosure price of the house.

An important feature of this plan is that it should not raise the long-term cost of credit. Because the creditor receives more than the foreclosure value of the house, the creditor is better off than it would be in the absence of this plan. Thus, creditors would not raise interest rates in order to compensate themselves for increased future risk of loss. This feature of the plan distinguishes it from other types of homeowner relief—such as foreclosure moratoria—which do increase the cost for creditors. The plan is premised on the assumption that a large percentage of default today is due to the fact that borrowers have a large negative home equity. This premise is supported by Guiso et al. who estimate that 26 percent of the current defaults are strategic, i.e. of people who could afford to pay the mortgage (Guiso et al. 2009; Bajari et al. 2008; Zandi 2008).

## **II. Legal Responses**

The problem we describe is not unique to financial crises. It is a routine problem that arises whenever someone defaults on a secured loan. And, as we will see, bankruptcy law addresses the problem in routine situations, albeit in an inadequate fashion since homeowners cannot take advantage of the mortgage-stripping provisions of the Bankruptcy Code.<sup>11</sup> Before we discuss bankruptcy law, however, we will address crisis measures that governments take when the scale of mortgage default is high.

### *A. Crisis Responses*

Governments have adopted various crude measures for slowing or halting foreclosures during crises such as the Great Depression. Foreclosure moratoriums require banks to wait a period of time after a default before initiating foreclosure proceedings.<sup>12</sup> Because the foreclosure rate declines, the negative effects of foreclosure should be mitigated. Homeowners who have lost jobs may be able to use the moratorium to find new jobs or raise money so that they can pay back the arrears and retain their houses. And a moratorium might give some homeowners some leverage, enabling them to renegotiate their loan with the bank. But moratoriums are extremely crude. They benefit anyone who owns a house, including people who should lose their houses because they can't afford them, and people who have no trouble making payments. This raises costs for banks and other mortgage investors and hence the cost of credit.

Another response, much discussed during the election campaign, is for the government to buy up loans and then renegotiate those loans with borrowers.<sup>13</sup> Where loans are securitized, the government would need to purchase all or most of the MBS's that are based on the loans in question. For this approach to work, the government would need to price an enormous number of loans and MBS's, and then to enter negotiations with millions of people. The government officials who conduct these negotiations would need to be able to determine the market value of the house, the risk of default, and so on—and to the extent that they err, they will end up being too generous (at taxpayer expense) or insufficiently generous (so that renegotiations fail). The task is just too large, the chances of success remote.

The Obama administration has taken a third approach, which involves paying loan servicers to renegotiate loans (Bernard 2009). In return for reducing interest payments, the loan servicers obtain a sum of money from the Treasury Department. If properly designed and administered, the program could give loan servicers and homeowners the correct incentives to renegotiate loans—when the mortgage is underwater but not when the homeowner could not afford to finance the house at the current market value. And, in theory, the gain from avoided loss in the market value of houses could exceed the cost to the taxpayer.<sup>14</sup> But this program assumes that loan servicers' incentives can be properly calibrated. There is a serious danger that loan servicers will figure out a way to recycle old loans so as to obtain the fee in cases where foreclosure should go forward, putting off the problem to another day. There is also the opposite concern that loan servicers are not sophisticated enough to take advantage of the plan.<sup>15</sup> And even if the plan works as intended, it will cost taxpayers billions of dollars and potentially

exacerbate moral hazard by revealing to market participants a standing government willingness to subsidize lenders and borrowers when financial crises strike.

### *B. Chapter 13*

When individuals can no longer pay their bills, they may file for bankruptcy. In a Chapter 7 bankruptcy, individuals lose all their assets that are not exempt under the law of the state in which they live and emerge with their debts wiped clean.<sup>16</sup> Because most people who default on debts do not have any assets beyond their states' exemptions, typically creditors receive nothing at all, and the bankruptcy process is quick and cheap. If a person in Chapter 7 owns a house subject to a mortgage, the bank has the right to foreclose on the house. If the person has equity in it, and the equity is protected by state exemption law from other creditors, it might be possible to renegotiate the mortgage with the bank; otherwise, the house is sold and the person receives the value of the equity up to the state's exemption limit. For these reasons, Chapter 7 does not address the negative equity problem.

In a Chapter 13 bankruptcy, individuals have a better chance of keeping their homes. They have a right to prevent foreclosure and maintain ownership and they may adjust certain terms of the mortgage agreement with the approval of a bankruptcy judge, even if the mortgage holder does not consent.<sup>17</sup> However, the debtor must agree to pay the full value of the mortgage, and so the mortgage after bankruptcy should have the same value as it did before the bankruptcy. Chapter 13, then, has no appeal to debtors when they have negative equity, and thus it cannot be used to address the inefficiencies caused by large-scale foreclosures.

Nonetheless, Chapter 13 is a useful place to start for thinking about reform. Its key element is that the homeowner has the option to compel the mortgage holder(s) to accept new terms. When mortgage holders are numerous and dispersed, and loan servicers have weak incentives to renegotiate on their behalf, a system of "forced renegotiation" at the initiation of the homeowner, one that does not require the consent of the mortgage holders or loan servicer, has obvious appeal. Indeed, some existing reform proposals try to exploit this idea.

### **III. Reform Proposals**

The most prominent reform idea is contained in a bill sponsored by Senator Durbin (American Bankruptcy Institute 2008). The chief effect of the bill would be to allow debtors to

strip down mortgage claims. To understand what this means, suppose that outstanding debt is \$200,000, the market value of the house is now \$150,000, and the foreclosure value of the house is \$100,000. Under current law, the debtor in Chapter 13 would have to agree to a \$200,000 mortgage even though the house itself is worth only \$150,000. Under Senator Durbin's approach, the mortgage holder(s) would obtain a new mortgage of around \$150,000, with the details—the term, the interest rate, and so forth—determined by the bankruptcy judge. The strip-down provision would be available only for subprime loans secured by primary residences and only in cases where the debtor has a low income.<sup>18</sup>

Senator Durbin's bill is a step in the right direction. It avoids the ex post renegotiation problem by allowing the debtor to unilaterally modify the mortgage loan with the bankruptcy judge's consent. Homeowners should be less likely to walk away from homes in which they have negative equity, especially when they have high idiosyncratic value for their home, and thus are willing to keep it when they have no equity at all. Creditors will gain because they obtain mortgages worth the market value of the house rather than much lower proceeds from foreclosure.<sup>19</sup>

But Senator Durbin's bill also falls short in several respects. First, it guarantees the debtor no more than zero equity, though it leaves open the possibility that the bankruptcy judge may approve more generous terms. If the house is worth \$150,000, the debtor emerges from bankruptcy with a \$150,000 mortgage. For many debtors, this will be insufficiently attractive to use Chapter 13's burdensome procedures. The zero equity cushion also means that the Chapter 13 resolution will be fragile: if housing prices continue to decline, the debtor will abandon the house or reenter Chapter 13.

Second, by entirely stripping away the creditor's unsecured claim, the bill gives the debtor what many would call a windfall if housing prices rise. In the example above, if the price of the house increased from \$150,000 to \$200,000—the original debt—the buyer will earn \$50,000 in profits at the expense of the creditor. For many people, this will appear unfair. Of course, this problem is the opposite of the first problem. Senator Durbin's bill will be politically controversial because advocates for homeowners will consider it insufficiently generous if housing prices do not recover, while opponents will point out the possibility of windfall.

Third, the bill requires that the bankruptcy judge oversee the loan renegotiation and provides little guidance to the judge. There are fewer than 400 bankruptcy judges, while millions

of houses are threatened by foreclosure (Administrative Office 2009). A better bill would reduce the bankruptcy judge's involvement, so as to minimize administrative costs and delay. And, ideally, the bill would distinguish routine mortgage defaults from those that occur in massive numbers during financial crises. Crises call for greater bankruptcy protections because of the negative feedback from foreclosures.

#### **IV. An Alternative Approach**

##### *A. Who should be helped?*

If the goal of the initiative is to minimize the deadweight loss caused by otherwise avoidable foreclosures, the plan should not be aimed at eliminating foreclosures, but only at minimizing those foreclosures that would not have taken place in a world where renegotiation is frictionless. In other words, the plan should not try to keep in their houses people who cannot afford to live in their current residence, but should apply only to situations in which at the current price the homeowner can afford to finance her house but is burdened with a pre-existing mortgage that she cannot or does not want to pay.

To clarify the distinction between these two situations, consider the following examples. If the Smith family, making \$100,000 per year, burdened itself with debt to buy a property worth \$700,000 with no money down, counting on future price appreciation to allow them to refinance it at lower rates, there is nothing the government should do. Even if the value of the property had dropped 20 percent and mortgage rates were at 5 percent, the annual mortgage payments needed to finance the purchase of this house at the current price (\$560,000) would be 36 percent of the Smith family's pre-tax annual income (without considering property taxes and insurance), an amount that they cannot afford.<sup>20</sup> Trying to keep the Smiths in their house is bound to fail. Unless the government forces a redistribution of wealth from the lenders to the borrowers or transfers a significant amount of taxpayers' money to them, the Smiths cannot afford to stay in their house and will eventually default. As we will discuss later, the long term cost of either of these remedies will be very large and thus bailing out the Smiths would be bad economic policy.

Contrast the case of the Browns. They make the same amount but stretched their budget less because they bought a house that was worth only \$500,000, with no money down. After the 20 percent drop in house prices they find themselves with a house worth \$400,000 and a mortgage worth \$500,000. The Browns, like the Smiths, have negative equity, and they may

well ask themselves why they should keep stretching their budget and make enormous sacrifices to keep paying a mortgage that exceeds the value of their house by \$100,000. If they walk away from their house, they have an instant saving of \$100,000, more than they could probably save in a lifetime. Why should they stay? In a recent survey, 39 percent of the families living in ZIP codes with high rates of foreclosures declared that they would walk away from their house if the mortgages exceeded the house value by \$100,000 (Guiso et al. 2009). These are the families which a renegotiation can help. If the value of the mortgage is readjusted to the value of the house, the Browns will see their monthly payments drop from 33 percent of their annual income to a comfortable 26 percent. Unlike the Smiths, then, the Browns would be able to pay their adjusted mortgage.

The more problematic case would be the Greens. They spent the same amount of money to buy the house as the Browns, but with a \$100,000 down payment. In a normal situation they would be doing just fine, but in the current weak economy Ms. Green lost her job and so their combined income dropped by 40 percent. Had the house prices not dropped the prudent Green family could have tapped their home equity to help them face the temporary difficulties. Unfortunately, the 20 percent drop in house prices has wiped out all their home equity value. Should the Greens be helped? It depends on how likely it is that Ms. Green will find another job. If the drop in the combined income is temporary, there is a compelling reason to avoid the inefficiency of a foreclosure. But if the drop is permanent, because Ms. Green is 55 and not highly educated and she was hanging on to her job by miracle and she will never find another job in the same pay scale, then any temporary help will be wasted. What is worse, the promise of help will reduce the incentives of all the Ms. Greens who can find a job to look for one.

In sum, from an economic point of view the case to help the Browns avoid foreclosure is overwhelming, the case for the Greens highly debatable, the case for the Smiths nonexistent. So, we will focus our attention on a proposal to help the Browns and only toward the end will we make a suggestion as to what can be done for the Greens.

### *B. Criteria*

In the old days, when the mortgage was issued and held by the local bank, there was a simple solution to the inefficiency of unnecessary foreclosures. The bank would renegotiate with the Browns a reduction in the value of the mortgage. While the bank carries this mortgage at a

book value equal to \$500,000, it knows there is a significant risk it will default (let's say that it has at least a 50 percent). If it does default, since foreclosed houses sell at a 30 percent discount or more, the bank would recover at most \$280,000 (recall that the value of the Browns' house is \$400,000, having declined from the \$500,000 purchase price). Renegotiating the mortgage down to \$400,000 would save the bank \$120,000 or, in expectation, \$60,000. This renegotiation is not costless for the bank. If the Browns do not default and the house price recovers the bank can possibly get more. By renegotiating it gives up this upside. How big is it?

If the Browns do not default and the house price recovers, a bank that does not renegotiate captures the increase in value between \$400,000 and \$500,000. The position the bank is giving up is equal to being long in a call option on the value of the house with a strike price equal to \$400,000 and being short a call option with a strike price equal to \$500,000. Hence, we can approximate the value of this option by using the Black and Scholes formula. By assuming a risk-free rate of 4 percent, an annual volatility of 8 percent, and a maturity of 11 years (the average tenure of a family in a house), the value of this option turns out to be \$55,000. The bank, however, will retain this option if and only if the borrower does not default, which we assume to occur with 50 percent probability. The expected cost of giving up this option, thus, equals \$27,500. Therefore, by renegotiating a lender gains \$60,000 at a cost of \$27,500. It looks like a very attractive proposition. In fact, it is so attractive as to raise the question why banks do not do it without any government intervention. And the answer is that local banks do it. But for reasons we will explain in Section V.F, large banks and, even more, servicers of securitized mortgages do not do it.

Hence, the goal of our proposal is to mimic in the most cost effective way what a local bank would have done. To achieve this goal with a legislative proposal we need to satisfy the pragmatic criteria that we described in Part I.

First, the plan should help those who would be able to pay a mortgage on the actual value of the house—the Browns, excluding as much as possible the Smiths and the Greens.

Second, the plan should be easy to understand and easy to implement. For example, any solution that involves extensive involvement of a regular or bankruptcy judge is infeasible, since there are only a few hundred bankruptcy judges in the United States and an expected 6 million cases of foreclosure. Even if each case lasted just an hour and all these judges worked all their time on these cases, it would take more than nine years to process them.

Third, the plan should not make any of the contracting parties worse off. Since there is a big benefit from renegotiation, it is possible to do so. The only political decision is how to allocate these benefits. Our proposal will have a free parameter that will allow Congress to affect this distribution in the way it desires.

Fourth, the plan should minimize the negative long term effects. The main criticism of all the proposals so far is that they would increase mortgage rates in the future and decrease the availability of mortgage credit. It is important to eliminate or at least minimize this effect.

Fifth, the plan should minimize the burden to taxpayers. At a time of ballooning deficits and increased needs, minimizing the taxpayers' burden is a top priority.

Sixth, the plan should be fair. Mortgage reform plans that seem to reward irresponsible behavior and that cost taxpayers a lot of money are unlikely to receive much political support. Furthermore, a plan considered unfair could undermine the moral obligation most people feel towards paying their mortgage, increasing the number of strategic defaults.

### *C. How Does the Obama Administration's Plan Perform on These Criteria?*

The Obama plan is divided into two parts. Under the "responsible homeowners" program, homeowners who do not otherwise qualify for a conforming loan are allowed to refinance their loan as conforming. This would allow homeowners who pay a relatively high rate of interest under an old mortgage to refinance using the low mortgage rates that prevail today. Under the "at-risk homeowners" program, lenders of subprime homeowners receive a taxpayer-financed incentive to reduce interest payments for five years (Bernard 2009).

The "responsible homeowners" program does not help the Smith or the Browns, but helps the Greens. It is not obvious, however, that it will sufficiently help the Greens to stay in their house. If they lost 50 percent of their income, it is hard to see how a reduction in interest due to a refinancing at better terms can help them much. To help the Greens, moreover, the "responsible homeowners" component of the Obama plan will end up helping a great deal of people who are not in need, at the expense of taxpayers who have to bear the additional risk through Freddie and Fannie. This part of the Obama plan fails criteria one and five.

The "at-risk homeowners" program cannot help the Greens (at least if they qualify under the previous program), but it does help both the Smiths and the Browns. The problem is that the help for the Browns is only temporary and the help for the Smiths is unwise. And it does cost a

lot of money for taxpayers. Furthermore, the government subsidy has the effect of rewarding the irresponsible behavior both of the lender and of the borrower, exacerbating the moral hazard problem in loan selection. So this part of the Obama plan fails not only criteria one and five but also criterion four.<sup>21</sup>

The Obama plan also raises serious fairness concerns under criterion six. The “at-risk” homeowners are often just those homeowners who were not “responsible.” Some of them, of course, were simply unlucky. But we usually ask people to insure themselves against bad luck by borrowing moderate amounts of money and purchasing a house within their means, taking into account the foreseeable risks of layoffs and illness. Although it may well be necessary to bail out homeowners who made unwise decisions, any plan that does so will widely be perceived as unfair, and could weaken the moral stigma against defaulting on loans.<sup>22</sup>

As we shall see below, it is possible to design a plan that helps just the Browns without any cost to the taxpayers. And if we think the Greens deserve to be helped, we can implement a targeted program for them that will cost much less than the Obama administration’s plan does.

#### *D. A Plan to Save the Browns*

The main idea of the plan is that each household which purchased or refinanced houses located in ZIP codes where house prices dropped more than 20 percent from their peak has the right to obtain a reduction in the mortgage to the current value of its house in exchange for a percentage (let’s initially say 50 percent) of the future appreciation of the house above the current level. To determine both the current and the future house prices we shall use the initial purchase price adjusted by the variation in the ZIP code level index.

To see how the plan works, consider again the Browns. They bought their house for \$500,000 with no down payment and today the house is worth \$400,000. Let us suppose that the mortgage is still worth roughly \$500,000. Now, under a plan such as Durbin’s, the mortgage would be reduced to the actual value of the house—\$400,000. Under our plan, the mortgage is reduced by an amount that reflects the decline in the median house price for the ZIP code. If that decline is 20 percent—the same as the decline for the Browns’ house—then in fact the Browns’ mortgage is reduced to \$400,000. If the ZIP code decline is, say, 25 percent, then the Browns’ mortgage would be reduced to \$375,000, giving them \$25,000 in equity.

The bank also receives a 50 percent share of the appreciation of the average house in the ZIP code. If the pre-adjustment ZIP code-based decline was 20 percent, and then the median house for the ZIP code increases by 10 percent between the date of the adjustment and the date the Browns' sell their house, then the bank receives \$20,000 (one half of \$440,000 minus \$400,000). If the price of the median house stays constant or declines between the adjustment and the time of sale, the bank's appreciation right is worth nothing.

Again, note that the Browns might sell their house for an amount that is higher or lower than \$400,000 multiplied by the median house price increase. For example, if the Browns sell their house for \$450,000, then they keep \$10,000 plus their one half share of the ZIP code-based appreciation (\$20,000), while the bank receives the other \$20,000. If they sell their house for \$430,000, they will receive \$10,000, while the bank receives \$20,000.

The overall effect of the plan is that it gives the Browns' relief that will (on average) be tailored to their needs, but that also does not give them perverse incentives, as we will shortly explain.

This proposal satisfies the criterion that the relief should be targeted. Eligibility is restricted to households in ZIP codes with severe drops in house prices. Further, by forcing the homeowner to give up part of the future appreciation the plan makes it costly to participate to this plan, reducing the demand for it, and thus deterring people from using it who do not need help.

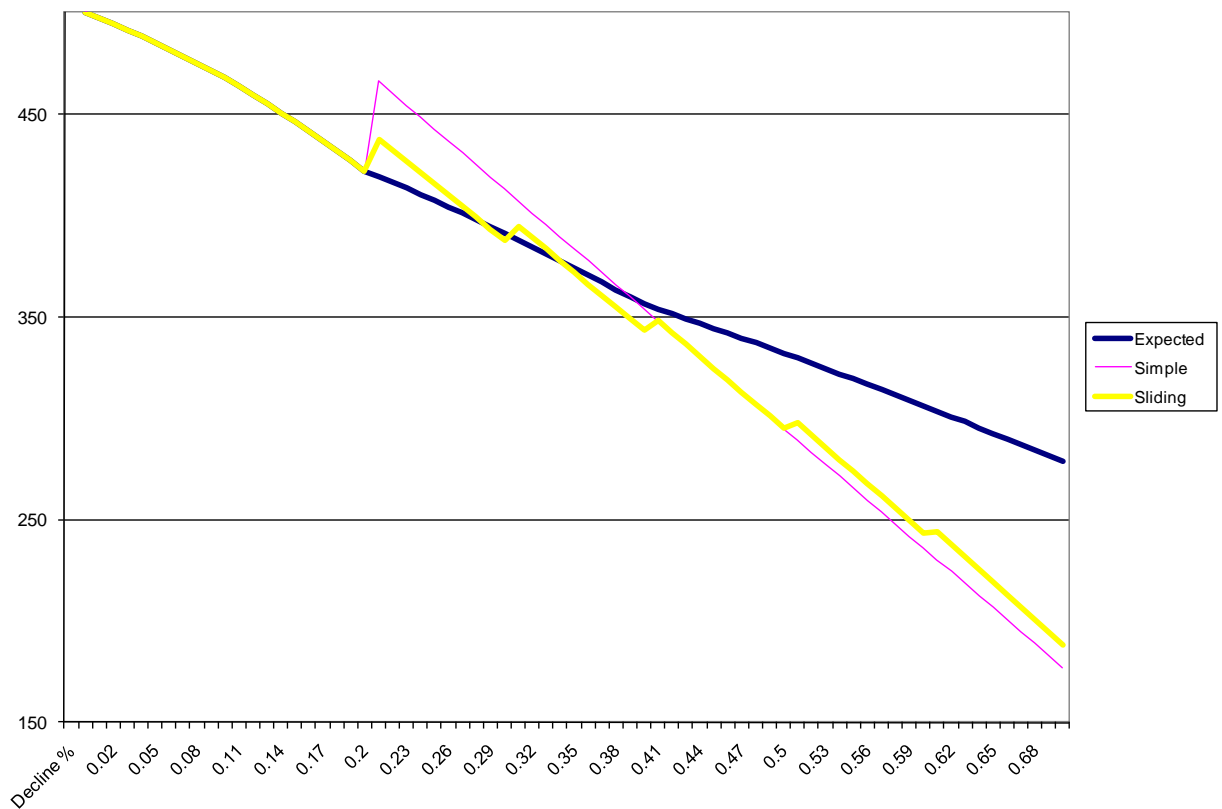
By determining the mortgage reduction with a standard formula using public information, this plan avoids uncertainty and lengthy bankruptcy proceedings. In bankruptcy proceedings, judges must determine asset values after listening to appraisers; under our plan, the judge or other official would obtain ZIP code-based valuations from a government-sponsored website. The plan also minimizes the risk that people who do not deserve help may try to obtain some debt forgiveness by manipulating their financial condition, since all the criteria are objective. Again, hiring a shady appraiser to provide a phony valuation does not pay, because all information that is used by the plan is public. The Greens will not benefit at all from this plan, while the Smiths may try to use it, but will end up in default anyway.

The most crucial aspect of this plan is that it makes neither the lender nor the borrower worse off. That the borrower is not made worse off is clear: a borrower who would be made worse off would choose not to use the plan. The argument is more complicated for the lender. In

Figure 2 we plot the expected recovery rate of the lender as a function of the decline in house prices (the blue line). We assume a probability of default for homeowners equal to the fraction of homeowners in the zip code at risk who in the survey conducted by Guiso et al. declare that they would default if their home equity was as negative as the corresponding decline in house price makes it to be.<sup>23</sup> This is very conservative, since Sherlund predicts 50 percent default of subprime mortgages over three years when house prices drop by 13 percent.<sup>24</sup> Conditional on defaulting we assume a 40 percent loss on recovery.

Figure 2: Lender’s expected value as a function of the decline in house prices

Value of a 500K mortgage with no downpayment as a function of the value of the house. The probability of strategic default from Guiso et al. (2009) equals 14% when the negative equity value is -50K, 30% when it is -100K, 45% when it is -200K and 51% when it is -300K, and it is linearly interpolated in between. The blue line reports the value under the status quo. The red line the value under the simple version of our proposal, the yellow line under the sliding version of our proposal.



We also plot the lender’s expected payoff under the simple rule described above (the red line), where mortgages are readjusted to the current house price level and the lender retains 50 percent of the upside, which we calculate as an option on the house price level. As we can see, as long as the decline in house prices does not exceed 41 percent, the lender does strictly better than

under the status quo. In fact, even if we consider the possibility of decline in excess of 41 percent, the lender does so much better for smaller declines that it is certainly better off on average.

The simple point is that, given conservative assumptions, the lender receives a higher payoff if it is given an adjusted mortgage and a right to half of any appreciation in the value of the house, than if it is simply given the house (under foreclosure). The loss from the foreclosure sale is very high, and the value of holding the house in the hope that it might appreciate (in which case the bank would get 100 rather than 50 percent of the value) is very low.

If we were concerned about the huge benefit enjoyed by the lenders for declines slightly above 20 percent, we could apply a sliding scale on the percentage of the upside to be given to the lender. The third (yellow) line reflects such a sliding scale, where for declines between 20 and 30 percent the borrower would give up 30 percent of the upside, for declines between 30 and 40 percent the borrower would give up 40 percent, and so on, until 70 percent. Not surprisingly, this modified plan reduces the lender's upside for smaller declines, while it increases for larger declines.

This analysis is predicated upon the assumption that all the borrowers will choose to exercise the option offered them by our proposal. In fact, it is likely that only a fraction would do so. Homeowners who are very bullish about the future behavior of house prices are unlikely to exploit this option, which they would perceive as very costly. By contrast, homeowners who do not expect much appreciation in house prices would be delighted to take it. This endogenous selection would reduce the cost of the mortgage modification for the lenders. In fact, the bullish homeowners are the less likely to default (since they expect their position to return in the money soon), while the pessimistic ones are the most likely to do so. This effect will strongly mitigate the cost estimated above.

In sum, this analysis shows that our plan would not have any negative effect on future mortgage rates or mortgage availability. In fact, it should decrease future mortgage rates and increase mortgage availability because on average it increases the lender's payoff.

Our approach does not fully mimic bankruptcy, which respects the priorities established by contract. The focus of our approach is loan modification, which could take place within or outside bankruptcy. If it takes place within bankruptcy, the bank's rights under current law would need to be adjusted. As noted above, banks can foreclose in bankruptcy, and unless state

law forbids recourse loans, they also have an unsecured claim for the difference between the outstanding debt and the proceeds of the foreclosure. If the debtor has additional assets that can be liquidated, the bank shares on a pro rata basis with other unsecured creditors. By contrast, the mortgage holder in our loan modification plan loses its unsecured claim. The debtor might end up fully paying unsecured creditors in order to avoid damage to her credit rating or to avoid loan enforcement proceedings. And although the mortgage holder gains an equity interest, this interest could be worth little if property values do not recover.

Although in principle these effects could be troublesome, in practice they are not likely to be. Unsecured creditors rarely recover much in Chapter 13 bankruptcies because debtors have few assets that can be liquidated, and it is difficult to obtain future income. In Chapter 7 bankruptcies, future income is protected. In practice, then, the mortgage creditor does better by obtaining an equity interest than retaining an unsecured claim, and other unsecured creditors are unlikely to do better at the mortgage creditor's expense, though they will benefit if the loan modification returns the debtor to financial health.

Finally, this plan does not require any taxpayers' money. In contrast to President Obama's plan, which pays lenders to reduce interest rates, our plan has no cost beyond the cost of ordinary administrative tasks (the rubber-stamping of the adjusted mortgages) that could be given to bankruptcy judges, regular judges (who would surely delegate to magistrate judges), Federal Housing Authority officials, or other government agents.

Let us sum up. The plan meets the first criterion because it only benefits homeowners with negative equity and does not provide a subsidy to homeowners who have insufficient cash flow to pay a mortgage adjusted down to the market value of the house. People with positive equity do not qualify and people with insufficient incomes gain nothing from the plan unless they immediately sell the house.

There are, however, two objections from the perspective of the first criterion. First, some people with negative equity (those who live in ZIP codes where housing price declines have been less than 20 percent) do not benefit from it. Second, some people with negative equity who would keep their houses and pay back their mortgages without the plan would take advantage of the plan. These are, of course, the problems of Type I and Type II errors. This is always the effect of using bright-line rules for administrative convenience, and, in this case, they are justified because of the vast cost of administering millions of mortgage write-downs.

The plan meets the second criterion because it uses some simple objective criteria for determining eligibility and for recalculating the loan. We anticipate that the plan could be administered through a federally sponsored website that spits out the results after users type in their financial information and ZIP code.

The plan meets the third criterion because, as we have noted, it makes the borrower and lender better off. It will have distributional effects that depend on how the equity of house is divided between the two parties. On this issue, Congress has some room to maneuver, although the particular equity-sharing rule will also determine the attractiveness of the plan for borrowers.

The plan meets the fourth criterion because creditors do better through forced renegotiation, rather than worse. In the long term, the plan should reduce rather than increase the cost of credit.

The plan meets the fifth criterion because it does not rely on subsidies from taxpayers. The cost of administering the plan—gathering data, setting up websites, perhaps hiring additional people to rubber stamp individuals plans—should be trivial.

The sixth criterion poses more difficulties. Many people will think it unfair that a homeowner may strip down her mortgage and then enjoy a portion of equity if her house appreciates. Suppose, for example, that a mortgage is reduced from \$400,000 to \$200,000 because the median housing price in a ZIP code has declined by 50 percent. However, prices subsequently rise and the homeowner sells the house for \$400,000. One might think that the bank should receive the full amount of the original loan—\$400,000—rather than \$300,000, the mortgage plus half the appreciation, and that it is unfair that the homeowner makes a profit of \$100,000. However, another perspective suggests that this conclusion is hasty. If we are right that our plan merely mimics the renegotiation that would have occurred in the private market, then it is hard to see what the unfairness would be. If the bank had voluntarily renegotiated the mortgage down to \$200,000, and then the house appreciated, we wouldn't say that the deal was unfair. We would just say that the bank made a rational investment, where it gave up the upside in order to avoid a risk of a greater loss. Such a consensual transaction is surely fair, and if the law simply implements it where transaction costs prevent the private transaction from occurring, we do not see how unfairness can be introduced.

For this reason, we doubt that our plan will erode the stigma on default. The norm against defaulting on a debt is deeply rooted. The United States has had bankruptcy laws and other laws

that protect defaulting debtors for hundreds of years, and lenders have always been willing to renegotiate loans. Yet the stigma remains in existence today.<sup>25</sup> It is hard to imagine that our proposal would have much of an effect given the existing legal regime.

#### *E. Treatment of second liens*

The loan modification would affect only one type of creditor: the creditor with a partially secured claim on a house. It does not affect fully secured creditors and it does not affect unsecured creditors.

To understand this point, recall that the Browns bought their house at \$500,000 and have since seen its market price decline to \$400,000. Suppose that the Browns have a first mortgage worth \$350,000 and a second mortgage worth \$100,000. The Browns also owe \$10,000 to their credit card company. The Browns would have no right to adjust the claims of the first mortgagor, which is fully secured, and of the credit card company, which is fully unsecured. (Nor would they have the right to adjust other secured loans, partial or full, such as car loans.) They would have the right only to adjust the value of the second mortgage by reducing it from \$100,000 to \$50,000. Note that the second mortgagor would lose 50 percent of the value of its claim even though the price of the house declined by only 20 percent. The second mortgagor alone would have a 50 percent interest in appreciation in the value of the house.

### **V. Potential Objections and Responses**

#### *A. Possible moral hazard*

The plan is designed to avoid problems of fraud and opportunism that can arise in shared equity schemes that are offered privately.<sup>26</sup> Suppose, for example, that a bank offers mortgages at a reduced interest rate that provides for 50/50 equity sharing. A homeowner buys a house for \$200,000 and then, a few years later, receives an offer of \$300,000. Under the plan, the homeowner should receive \$50,000 and the bank should receive \$50,000. To avoid sharing with the bank, the homeowner might offer to sell the house for \$240,000 with an unrecorded side payment of \$60,000. The bank would then receive only \$20,000 of the appreciation, while the homeowner would receive \$80,000. The sale would be fraudulent and hence illegal, but might be difficult to stop.

Another problem with a traditional shared equity plan is that homeowner's incentives to improve the house are weakened. Suppose that the homeowner can invest \$50,000 in improving the kitchen, which would add \$40,000 to the ultimate sale price of the house. (Typically, home improvements do not have positive net present value and homeowners undertake them in part for their consumption value.) When the homeowner sells the house, she receives only \$20,000 rather than \$30,000 of the appreciation. Accordingly, homeowners have weaker incentive to improve or even maintain their homes.

Our plan avoids these problems by computing the bank's payoff on the basis of the average appreciation of houses in the ZIP code rather than the actual appreciation of the house. To continue with the first example, if the average house in the ZIP code has appreciated by 40 percent by the time of the sale, the bank will receive a 50 percent share of \$80,000 (\$200,000 times 40 percent) rather than a 50 percent share of \$100,000 (the actual appreciation of the house, the difference between the sale price and the price at the time of the mortgage adjustment). The homeowner cannot gain by concealing the sale price from the bank because the bank does not receive a share of the sale price; it receives a share based on the ZIP code-based median house price change, which is public information. In addition, the homeowner has strong incentives to maintain and improve the house because she receives the full marginal dollar. If the kitchen improvement results in a sale price of \$240,000 rather than \$200,000, the bank's share (\$40,000) remains fixed, and the homeowner receives \$100,000 rather than \$60,000.

The use of ZIP code averages is not costless, however. If a house appreciates at less than half the rate of the average house in a ZIP code, the homeowner will find herself underwater again. We expect that the risk of such an outcome is relatively low, but in any event only experience will reveal it. If it turns out that this problem is significant, then it would be appropriate to give the homeowner a larger than 50 percent share of the appreciation.

### *B. Undermining moral values*

One concern with this (as with any) plan is that it might reward imprudent behavior and, even worse, undermine the moral standards that prevent families from defaulting, exacerbating the very problem that it tries to resolve. For example, Guiso et al find that people who think that the economic system is fair are six percentage points less likely to declare that they would default if they have negative equity in their house (Guiso et al 2009).

While this is a possible spillover effect, there are two factors that minimize this risk under our plan. First, since it is not a transfer of taxpayers' money to homeowners, it is less likely to be considered unfair and to trigger a negative reaction. Second, the benefit to homeowners will be seen less as an unfair windfall because it comes at the cost of half of the future appreciation, whose value homeowners tend to overestimate (Guiso et al 2009).

### *C. Administrative costs for banks*

One possible concern with giving a fraction of the future house appreciation to the lenders is the magnitude of the administrative costs involved. There are three sources of administrative costs: the cost of undertaking the renegotiation, the possible cost of monitoring the value of the house, and the possible cost of litigation, when the house is eventually sold.

The pre-packaged nature of the procedure homeowners and lenders have to go through makes renegotiation costs minimal. Lenders and borrowers need only three pieces of information: the price at which the house was initially purchased or refinanced, the value of the mortgage outstanding, and the ZIP code in which the property is located. With these (and the database on price indexes at the ZIP code level), the terms of the renegotiation are determined without any discretion.

Under our plan there is no need to monitor the value of the house, at least not any more than under the current system. In effect, the lender ends up owning a fraction of the appreciation of the index, not of any individual house. Hence, the house is just a collateral to the contract, not the object of the contract.

Further, there is no risk of lengthy and costly litigation when the house is sold, since the contract is on the variation of the index, not the variation of the price of the house.

Finally, this direct link with the index makes it easy to pool these house appreciation rights together and trade them in the marketplace. Banks that prefer not to invest in housing and can therefore pool their appreciation rights into portfolios and sell them to investors. The possibility of selling these rights on the market may also resolve the tricky legal issue of attributing these rights to the various tranches of mortgage back securities investors. Since these payments were not anticipated by the contractual arrangement, the law approving this reform must provide a guidance of how they should be allocated.

#### *D. Higher credit costs*

The financial industry has traditionally opposed loan modification law because it would increase the future cost of credit and reduce its availability. This fear is generally correct. In our case, however, the loan modification increases instead of decreases the payoff to the lender. If anything, our plan will reduce the future cost of credit and increase its availability.

Indeed, episodic interventions like the Obama administration's plan creates great uncertainty because these interventions are always presented as one-time but the government cannot commit itself not to repeat them. Market participants naturally assume that if current conditions recur, future government action will resemble current government action but given the vagaries of the political process, the precise nature of future government action will be difficult to predict. By contrast, our plan envisions a permanent modification of the Bankruptcy Code or other law, one that would continue to have effect after the current crisis terminates. This enhanced predictability is a significant advantage.

#### *E. Accounting Effects for the Banks.*

The effect of this plan on the bank balance sheet depends crucially upon the way these loans are accounted for today. If we are talking about securitized loans, these are likely to be marked-to-market and so the plan would not have negative implications for banks' balance sheet. In fact, it might even have positive implications given the prices we observed in Figure 1.

If we are talking about loans that are held to maturity, the loan modification we advocate would force banks to recognize these losses on their balance sheets with negative implications for their solvency.

Forcing banks to recognize existing losses, however, has beneficial effects. First, it reduces the asymmetry of information between banks and the capital market, which makes it so difficult for banks to raise capital. Second, it forces banks to act rather than hide with their head in the sand. These losses will not be hypothetical losses, but actual ones. So they will contribute to bringing clarity to the market in the spirit of the stress test advocated by Treasury Secretary Timothy Geithner (Andrews 2009).

#### *F. Homeowners may terminate the bank's option*

One might worry that the homeowner will terminate the bank's option immediately after the mortgage is adjusted. The homeowner can do this simply by selling her house and buying an identical house nearby (or renting). Having done so, the homeowner will have paid off the (adjusted) mortgage and presumably obtained a new mortgage for the same amount and the same rate. The new mortgage, obtained from another bank, will have no equity sharing. The homeowner will in this way have eliminated the initial bank's option.

The problem for the homeowner is that it is costly to sell a house and to buy a new house. One must pay five percent to the real estate agent, plus taxes and fees. One loses the returns on one's specific investment in one's house—the kitchen remodeling, for example, that is suited to one's tastes but not that of future buyers, or the relationships with one's neighbors. And many people love their houses simply because they have lived in them for a long time. Putting all these costs together, one might think of a "personal equity" cushion that will discourage people from immediately reselling their house.

If it turns out that the personal equity cushion is not sufficient, our plan can be adjusted to discourage this behavior. For example, the bank could be given a contractual right to the portion of the mortgage that has been stripped down; the right would be automatically terminated after, say, five years. If the homeowner resells the house within the five year period, the bank would have an unsecured claim against the homeowner. This would make it extremely difficult for the homeowner to obtain a down payment for a new house. Even if the homeowner leases, her credit rating would be downgraded if she did not repay the loan.

*G. If this idea is good, why did it not occur before?*

If this idea is so good, why has the private sector not already written it into the mortgage contracts?

The main reason is very simple: reliable house price indexes at the ZIP code level are a recent innovation. Without these indexes, the administrative and moral hazard costs of this solution would be enormous. In addition, in normal times any debt forgiveness has very severe tax consequences, making this solution unappealing.

The reason why this outcome is not achieved *ex post* is that most loans are securitized. The right to renegotiate the securitized loans often belongs to the loan servicer, who has no financial incentive to renegotiate them, while facing a huge liability risk if it were to do so

(Mayer 2009). Many servicers do not even have the right or practical ability to renegotiate the mortgage because of restrictions in their contracts with the holders of securities. In these cases, the diversity of interests and the severe informational asymmetry about the value of the underlying assets, make renegotiation almost impossible. Consistent with this hypothesis Piskorski, Seru, and Vig find that delinquent mortgages that are securitized are much less likely to be renegotiated.

In addition, even when loans are not securitized, large banks have traditionally been reluctant to renegotiate loans because the volume-driven nature of their business has caused them to prefer foreclosure. If this business model works during normal times (and it is not clear that it does), it has severe negative effects during crises.

Finally, home share appreciation rights such the one we described before are new contracts that, if introduced by a single lender, will face very hard judicial scrutiny. The risk would be that when the option is in the money for the lender, the homeowner will sue claiming he did not understand the nature of the contract or he was forced into it under duress. This problem will clearly disappear if this contract were introduced by an ad-hoc law.

#### *H. What about the Greens?*

Thus far we have ignored the problem of helping families in the same situation as the Greens. We are not sure whether the Greens should be helped, but if they should, this can be achieved with a modified version of the “at-risk homeowners” program, under which people with temporary cash flow problems receive help from the government so that they do not lose their houses.

First, since the externality we are concerned with here is the possible impact that a large number of defaults might have on the value of a neighborhood, this measure should be applied only to ZIP codes where house prices dropped more than 20 percent.

Second, the intervention should be limited to families in which one of the two main bread-winners has recently lost her job.

Third, to avoid the risk that this help might become a permanent subsidy, the help should be structured as a temporary loan extended from the Federal government for a limited time to help pay the monthly mortgage.

## *I. Complexity*

Our plan might seem excessively complex. Currently in bankruptcy, debtors emerge either without their houses or with ordinary mortgages that may have been adjusted but are fundamentally similar to the preceding mortgage. One might fear that homeowners who receive an adjusted mortgage with equity sharing will not understand the nature of the financial instrument, and thus will not act in their financial interest, either in choosing the loan modification approach in the first place or in managing their finances after having made that choice.

These are legitimate concerns. News reports indicate that many homeowners did not understand the complex mortgage instruments they signed during the housing bubble (Morgenstern 2007). Nonetheless, our plan is relatively transparent, and does not seem much more complex than an ordinary mortgage. It will be necessary to supply people with information, and no doubt lawyers and public aid organizations will need to play a role in providing people with assistance.

## **VI. Legal Issues**

Our plan could be legally implemented in two ways. First, Congress could pass a law that would give homeowners the right to reform their mortgages without the consent of mortgage holders or loan servicers, as long as the various criteria are satisfied. A federal official--probably a judge--would need to be empowered to approve the reformation. Because the plan has very clear bright-line rules, the approval would be more akin to an administrative than a judicial process--just ensuring that boxes are checked and valid records are supplied. Federal judges would probably delegate the process to magistrate judges.

Second, the plan could be implemented through an amendment of Chapter 13 of the Bankruptcy Code. A new provision of the Code would allow for prepackaged Chapter 13 plans. An agency, such as the Federal Housing Authority, would establish an official list of ZIP codes where the median house price has dropped by more than 20 percent from its peak. For each ZIP code, the agency would provide median housing prices starting at the peak, which would be updated monthly. All homeowners who own homes in the designated ZIP codes, and who purchased or refinanced their homes before the peak, would have the right to submit a Chapter 13 prepack.

The Chapter 13 prepack would give the homeowner the right to adjust mortgage debt on her primary residence only. It would not give her the right to adjust other debts (such as automobile loans). To do that, she would need to go through regular Chapter 13 proceedings, where mortgage adjustment would also be available (as provided in, for example, the Durbin plan).<sup>27</sup> The means test, which limits Chapter 13 to lower-income people, would not apply to the Chapter 13 prepack. The Chapter 13 prepackaged plan would simply contain a new mortgage amount that is equal to the old mortgage amount discounted by the percentage decline of the median house price for the ZIP code. Monthly payments would decline by the same percentage; the term of the mortgage would not be changed.

Whichever approach is used, the debtor would submit the loan modification proposal to a government official—regular or bankruptcy judge, or a designate—who would simply verify the accuracy of submission against the information on the FHA’s website and public mortgage records. The official would approve the plan as long as the information is accurate and the debtor’s current mortgage debt is greater than the house’s original value (purchase price or price at refinancing) as discounted by the ZIP code-based decline in housing prices. The debtor would be required to swear that all information is correct under penalty of perjury. The creditor would be given notice of the loan modification proposal. It would have the right to submit information showing that information on the debtor’s submission is false, but otherwise would not have the right to oppose the loan modification.<sup>28</sup>

The debtor’s other debt obligations would be unaffected by approval of the loan modification. The adjusted mortgage would be publicly recorded along with a document stating that the bank has a security interest in the proceeds of the sale of the house equal to the difference between the ZIP code-based price of the house at the date of approval of the loan modification, and that price multiplied by one plus the ZIP code-based appreciation of the price (if any) at the time of sale. We are assuming that it is possible under state law for the bank to obtain a security interest in the proceeds of the sale of a house; if not, then the bank’s interest can only be a contract right, and thus could be subordinate to a subsequent secured loan issued to the homeowner.

One important legal question is whether the loan modification right would be a mandatory or default rule. If it is a default rule, the parties would be able to contract around it, and agree to a mortgage that prohibits the homeowner from exercising the loan modification

right. If it is a mandatory rule, contracting-around would be forbidden. There are arguments on both side. The problem with a mandatory rule is that it may be in the interest of some parties to deprive the homeowner of the loan modification right—for example, if parties prefer a customized version that reflects their needs. One can imagine that a particular creditor might prefer using a different index of housing prices, or believe that the mortgage adjustment should kick in only if ZIP code-based prices fall by 25 percent. The problem with a default rule is that the parties' interests are not aligned with society's—in particular, they do not benefit by avoiding the harm to neighbors that occurs as a result of foreclosure.

## **Conclusion**

Our plan, if enacted into law, would help resolve the housing crisis, which has caused a great deal of pain and also has been a major factor in the ongoing financial and economic crises. It would help because it reduces the supply of foreclosed homes. But it is not a temporary or stopgap measure. All future mortgages would take place against background law that would provide for the stripping down of mortgages when the median house price in a ZIP code declined by 20 percent or more.

Such a law would provide immediate relief in the case of any future housing crisis, and thus act as a safety valve that would help slow housing price declines. It would do this by putting brakes on the feedback effect that would otherwise occur when foreclosures beget foreclosures by reducing the market price of neighboring land. But such law would also reduce the downpayment that will be requested in the future. Currently lenders are requiring higher downpayment to avoid being trapped in the inefficient situation where the homeowner has negative equity. By reducing the inefficiency of this situation, our proposal makes lender more willing to lend against less downpayment, expanding the demand for homes at a crucial juncture.

This legal regime should be appealing to homeowners also because it would allow them to reduce the risk that housing price declines pose to their financial portfolios. Currently, when a person buys a house, she bears the entire risk that the property value will decline. For most people with mortgages, their home equity will be their most valuable asset by far; hence their portfolio is undiversified. Economists and various commentators have proposed financial instruments that would allow people to, in effect, purchase insurance against loss of value in their home, from third-party institutions (Fennell 2008; Caplin et al 1997; Shiller 1993, Shiller et

al 1999). So far, these proposals have made little headway—probably because of their novelty, complexity, and possible adverse regulatory consequences (Fennell 2008). Legal reform that would give homeowners the right to loan modification would cut this particular Gordian knot without interfering with the current efforts to divide risks in other ways.

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- <sup>1</sup> Neighboring houses could lose as much as \$150,000 in value (Immergluck et al 2006).
- <sup>2</sup> See Markit Indices, available at <http://www.markit.com/information/products/category/indices/abx.html>.
- <sup>3</sup> If the problem was driven by illiquidity, we would expect prices to recover as the financial crisis became less severe. But in September 2009 the AAA ABX 07-1 was still trading around 29 cents on the dollar.
- <sup>4</sup> White (2009) reports that the losses in foreclosure of forced lien mortgages were 55 percent. Assuming an initial down payment of 5 percent and a decline in house prices of 30 percent, the deadweight loss in default is around 40 percent.
- <sup>5</sup> Mortgage Bankers Association (2008).
- <sup>6</sup> For a description of banks' mortgage practices, see Ferrell (2009). For a lucid popular treatment, see Zandi (2008).
- <sup>7</sup> See Larry Cordell et al. *supra*. These conflicting incentives were evident in the Countrywide lawsuit. For a discussion, see Gradman (2008).
- <sup>8</sup> In some contracts, MBS holders can approve a loan renegotiation by vote, for example, 60 percent; however, this process appears to be cumbersome.
- <sup>9</sup> It may well make sense from the perspective of public policy to help people who have suffered income shocks that prevent them from paying mortgages. The problem is slightly different from the one we address, and so we will ignore it except for some brief comments alone (relating to the "Green family").
- <sup>10</sup> Consumer debtors may file under Chapter 7 (in which case their non-exempt assets are sold off and their debts are liquidated) and Chapter 13 (in which case they may keep some non-exempt assets but must pay some of their debt out of future income). Because debtors typically lose their house in Chapter 7 and use Chapter 13 if they want to keep their house, we focus on Chapter 13.
- <sup>11</sup> See *infra* note \_\_\_ and accompanying text.
- <sup>12</sup> Foreclosure moratoria were common during the Great Depression; they were also proposed by the Bush administration (Fernandez 2008).
- <sup>13</sup> McCain proposed such a project (Jensen 2008).
- <sup>14</sup> For a defense, see Mayer (2009) and Elmendorf (2008).
- <sup>15</sup> This point has been made to us in conversations with market participants.
- <sup>16</sup> See 11 U.S.C. § 727.
- <sup>17</sup> See 11 U.S.C. § 1322(a).
- <sup>18</sup> A related approach, advocated by Geanakoplos et al (2009), would set up a system of government-appointed trustees who would rework loans. When the homeowners can pay a mortgage greater than the foreclosure value of the house, the trustee would adjust the mortgage accordingly.
- <sup>19</sup> For a defense of mortgage modification in bankruptcy, see Levitin et al (2008), which provides evidence that strip-down would not raise the cost of credit.
- <sup>20</sup> Lenders usually do not issue mortgages when the monthly payments would exceed 28 percent of pre-tax monthly income.
- <sup>21</sup> The Obama plan apparently provides for reduction of interest payments rather than the writing down of principal in order to avoid making accounting losses appear on the books of banks. We suspect that this stratagem will not work in the long run—it is more in the nature of accommodation to the lobbying power of banks—and so we focus on writing down principal. See Bernard, *supra*.
- <sup>22</sup> As we go to press, the verdict on the Obama plan is decidedly mixed (Simon et al 2009).
- <sup>23</sup> For example 13% of homeowners declare that they would default if their home equity was equal to -50K. Since in the example the value of the house (and of the mortgage) is assumed to be \$500K, this corresponds to a decline in house prices equal to 10%. We consider the Zipcodes at risk those with at least 5% of foreclosure. Guiso et al., *supra*.
- <sup>24</sup> Sherlund, *supra*.
- <sup>25</sup> Some academics have argued that stigma against bankruptcy has declined in the last twenty years or so. For discussions, see Fay et al (2002), White (1998), Efrat et al (2006). For a skeptical response, see Sullivan et al (2006).
- <sup>26</sup> For a description of shared equity mortgage programs, see Fennell (2008).
- <sup>27</sup> See *supra* note \_\_\_.

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<sup>28</sup> The ex post adjustment of creditors' rights is unlikely to pose serious constitutional problems. For a discussion of these issues, see Mayer et al., *supra*.

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