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The Housing Crisis and Bankruptcy Reform: The Prepackaged Chapter 13 Approach

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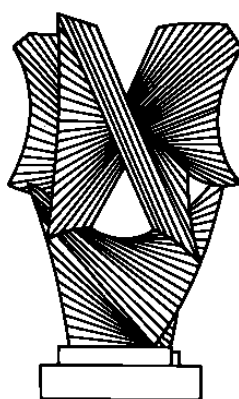
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Working Paper No. 32

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The Prepackaged Chapter 13 Approach**

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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. A house in foreclosure is worth 30 to 50 percent less than a house that a homeowner either retains or sells on the market, and a foreclosed house damages neighboring property values as well. We advocate a reform of Chapter 13 that would allow homeowners to strip down the value of their mortgages in a prepackaged bankruptcy. 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 key elements of the plan are that it uses prices based on the average house price in a particular ZIP code, which reduces moral hazard; and it is automated, requiring only a rubber stamp by a bankruptcy judge or other official, thus preserving judicial resources. Other plans, including that of the Obama administration, are compared.

* Luigi Zingales thanks the IGM center at the University of Chicago for financial support.

I. The Problem

In 2008, banks commenced foreclosure proceedings on 2.2 million homes. This year could be worse.¹ While economists disagree on whether this is the worst economic crisis since the Great Depression, everybody agrees that this is the worst real estate crisis since the Great Depression. Foreclosure is not just a human tragedy, it is an economic tragedy as well. Foreclosed houses are poorly maintained if not looted. As a result, foreclosed properties lose a substantial fraction of their value, between 30 and 50 percent.² If this was not enough, foreclosure has some very negative spillover effects. Forced sales depress the value of the surrounding properties. 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.³

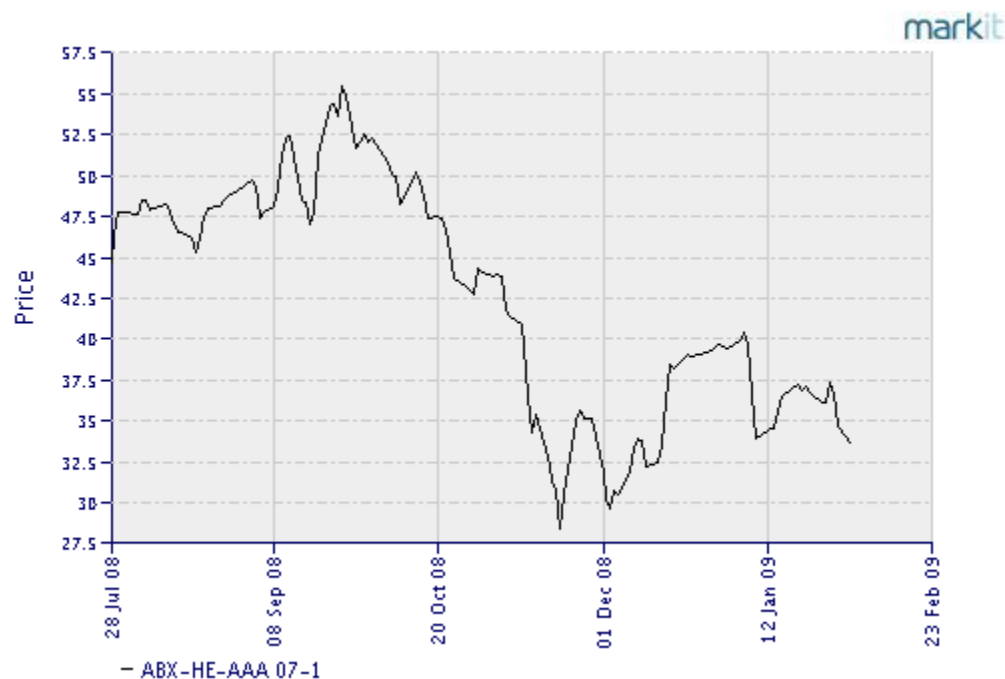
The market seems to anticipate this doomsday scenario. Figure 1 reports the price of an index of AAA mortgage-backed securities in the last six months. In spite of the fact that all the components of this index were AAA rated at origination, recent prices oscillate around 35 cents on the dollar. It is hard to make sense of these prices without assuming a contagion effect on default and a large deadweight loss conditional on default.

Figure 1: Price of a index mortgage

¹ Mortgage Bankers Association, Delinquencies Increase, Foreclosure Starts Flat in Latest MBA National Delinquency Survey, December 5, 2008, <http://www.mbaa.org/NewsandMedia/PressCenter/66626.htm>.

² “For properties sold at foreclosure auctions in 2006, first resales that occurred that same year brought 63% of county-estimated market values. First resales that occurred in 2007 brought only 44% of estimated market values.” Josiah Madar, Vicki Been, and Amy Armstrong, Transforming Foreclosed Properties Into Community Assets New York University Furman Center for Real Estate and Urban Policy (2008).

³ Guiso, L, P. Sapeinza, and L. Zingales, Moral and Social Constraints to Strategic Default on Mortgages, University of Chicago Working Paper (2009).



Even if we were to assume that all securities are backed by mortgages in Las Vegas (which with almost a fifty percent drop in prices is the most severely affected area of the country) and 100% 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 half as much as the loans, and so the securities should be valued at half their par value. The fact that the securities trade at 35 cents implies that the market expects the houses upon foreclosure to be worth at least 40 percent less than their current market value—and even less than that if (as is likely) less than 100% of the mortgages default.⁴ 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 a debt forgiveness or both.

Since about 10% of the \$10 trillion mortgages are currently delinquent or in the foreclosure process,⁵ the expected deadweight loss for the delinquency started so far will be at least \$300 billion or \$1,000 per American. Avoiding this loss should be a top legislative priority.

⁴ Alan M. White, *Deleveraging the American Homeowner: The Failure of 2008 Voluntary Mortgage Contract Modifications* (2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1325534, 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.

⁵ Mortgage Bankers Association, *supra*.

A major puzzle is why the market does not avoid these losses. Lenders can do better if they renegotiate loans rather than 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, 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. 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.

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. 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.⁶ 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.⁷

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. The goal is to force a renegotiation between the homeowner and the owner or owners of the mortgage. At the same time, a system that forces such renegotiations should be designed so as to minimize administrative costs and to avoid, as much as possible, negative ex ante effects on the cost of credit.

In this paper, we propose a plan that 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. This option takes the form of what we call a prepackaged Chapter 13 bankruptcy, in which the mortgage is automatically readjusted in line with the decline of housing prices in the homeowner's ZIP code. 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. Because both parties are made better off, the cost of credit should not increase in the long run; and taxpayers do not have to subsidize the scheme. The plan is premised on the assumption that widespread negative equity mortgages, as a

⁶ In some contracts, MBS holders can approve a loan renegotiation by vote, for example, 60 percent; however, this process appears to be cumbersome.

⁷ Tomasz Piskorski, Amit Seru, and Vikrant Vig, *Securitization and Distressed Loan Renegotiation: Evidence from the Subprime Mortgage Crisis*, Chicago Booth School of Business Research Paper No. 09-02 (2008), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1321646.

consequence of the popping of the housing bubble,⁸ are the chief cause of the crisis, rather than loss of income caused by the recession, which the plan does not address.

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. Before we discuss bankruptcy law, however, we will address crisis measures that governments take when the scale of mortgage default is high.

II.1. 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. 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 but would like to take a break. This raises costs for banks and hence the cost of credit.

Another response, much discussed during the current crisis, is for the government to buy up loans and then renegotiate those loans with borrowers. 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.

⁸ See Shane M. Sherlund, *The Past, Present, and Future of Subprime Mortgages*, Finance and Economics Discussion Series 2008-63 (Federal Reserve Board, 2008); Elmendorf, *supra*.

The Obama administration has focused on a third approach, which involves paying loan servicers to renegotiate loans. In return for reducing or extending principal and interest payments, the loan servicers obtains 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.⁹ 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. 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.

II.2. 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. 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. However, the debtor must agree to pay the full value of the mortgage,

⁹ For a defense, see Christopher Mayer, Edward Morrison, and Tomasz Piskorski, A New Proposal for Loan Modifications (2009), http://www4.gsb.columbia.edu/null?&exclusive=filemgr.download&file_id=53861; Doug Elmendorf, Mortgage Foreclosure Policy, Brookings Institution (2008) (slide presentation).

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. Other provisions of Chapter 13—including a means-testing rule, which ensures that only lower-income people benefit from the law—also reduce its usefulness for the present crisis.

Nonetheless, Chapter 13 is the 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.¹⁰ The chief effect of the bill would be to allow debtors to “cram 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 in the neighborhood of \$150,000, with the details—the term, the interest rate, and so forth—determined by the bankruptcy judge. The cramdown provision would be available only for subprime loans secured by primary residences and only in cases where the debtor satisfies the means test.

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

¹⁰ See Sen. Durbin Makes the Case for Judicial Mortgage Modification in Chapter 13 (2008), <http://www.abiworld.org/AM/Template.cfm?Section=Home&CONTENTID=52147&TEMPLATE=/CM/ContentDisplay.cfm>.

mortgages worth the market value of the house rather than much lower proceeds from foreclosure.

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,¹¹ while millions of houses are threatened by foreclosure. 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: The Chapter 13 Prepack

IV.1 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

¹¹ Administrative Office of the U.S. Courts, Judicial Statistics (2009) <http://www.uscourts.gov/judicialfactsfigures/2007/Table101.pdf>.

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 his house but is burdened with a pre-existing mortgage that he 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 mortgages 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. Not only is trying to keep the Smiths in their house a reward for imprudent behavior, it 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 that with 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% drop in house prices they find themselves with a house worth \$400,000 and a mortgage worth \$500,000. Why should they keep stretching their budget and make enormous sacrifices to keep paying a mortgage that exceeds by \$100,000 the value of their house? If they walk away from their house, they have an instant saving of \$100,000, more than they could possibly save in a lifetime. Why should they stay? In a recent survey, 48 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 \$100,000.¹² These are the families for 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.

¹² Guiso and Zingales, *supra*.

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 you think 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.

IV.2 Desirable Criteria

In the old days, when the mortgage was granted by your 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 that it has at least a 50 percent probability of defaulting. If it does default, since foreclosed houses sell at a 30 percent discount or more, the bank would recover at most \$280,000. 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 give 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. By using

the Black and Scholes formula with a risk-free rate of 4 percent, an annual volatility of 8 percent (the historical volatility of house prices), and a maturity of 11 years (the average tenure of a family in a house), the value of this position is \$55,000. Since the bank is likely to have this option with a 50 percent probability, the expected cost is \$27,500. Hence, 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.6, 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 some important constraints.

First, the plan should be targeted at the Browns, excluding as much as possible the Smiths and the Greens. In particular, it should help those with (1) negative equity and (2) the ability to pay a mortgage on the actual value of the house.

Second, the plan should be easy to understand and easy to implement. For example, any solution that involves a 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 their availability. It is important to eliminate or at least minimize this effect.

Last but not least, 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.

IV.3 How Does the Obama Administration's Plan Perform on These Criteria?

The Obama plan is divided into two parts: the “responsible homeowners” part (where homeowners who do not otherwise qualify for a conforming loan are allowed to refinance their loan as conforming) and the “at-risk homeowners” part (where lenders of subprime homeowners receive an incentive to reduce their interest for five years).

The “responsible homeowners” part 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” part cannot help the Greens (at least if they qualify under the previous part), but it does help both the Smiths and the Browns. The problem is that the help for the Browns is only temporary. And it does cost a lot of money to 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.

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.

IV.4 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. As we will discuss, there are several options for such indexes, with pluses and minuses.

This proposal satisfies the criterion that the relief should be targeted. First of all, its applicability is restricted to households in ZIP codes with severe drops in house prices. Second, 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.

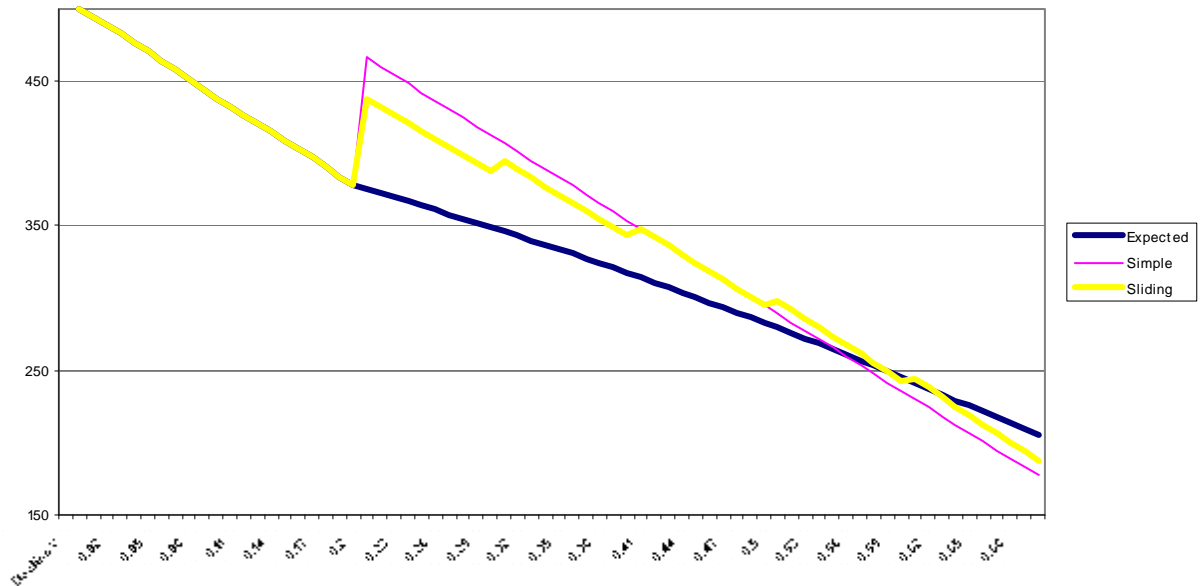
By determining the mortgage reduction with a standard formula, this plan avoids uncertainty and lengthy bankruptcy proceedings. It also minimizes the risk that people who do not deserve help may try to obtain some debt forgiveness by manipulating their financial condition, since all the conditions are objective. The Greens will not benefit at all from this plan, while the Smith 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 pretty 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. We assume as probability of default for homeowners the declared probability of default in the questionnaire by Guiso et al.¹³ This is consistent with the results obtained by Sherlund, who predicts 50 percent default of subprime mortgages over three years when house prices drop by 13 percent.¹⁴ Conditional on defaulting we assume a 40% loss on recovery.

¹³ Guiso and Zingales, *supra*.

¹⁴ Sherlund, *supra*.

Figure 2: Lender's losses under different scenarios as a function of the decline in house prices



We also plot the lender's expected payoff under the simple rule described above, 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 56 percent, the lender does strictly better than under the status quo. In fact, even if we consider the possibility of decline in excess of 56 percent, the lender does so much better for smaller declines that he is certainly better off on average.

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 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, making it preferable to the status quo for any decline less than 62 percent.

This analysis shows that this 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. 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 a Chapter 13 prepack loses its unsecured claim. The debtor might end up fully paying unsecured creditors in order to avoid damage to his 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. Unsecured creditors rarely recover anything 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 prepack returns the debtor to financial health.

Finally, this plan does not require any taxpayers' money.

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. The only problem with the plan from the perspective of the first criterion is that 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. This is the price of administrative convenience.

The plan meets the second criteria 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 criteria 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.

Finally, 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.

IV.5 Treatment of second liens

The Chapter 13 prepack 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% of the value of its claim even though the price of the house declined by only 20%. The second mortgagor alone would have a 50% interest in appreciation in the value of the house.

V. Potential Objections and Responses

V.1 Possible moral hazard

A possible objection to our plan is that the creation of these home appreciation rights is fraught with some serious moral hazard problems. One risk is that when the homeowner sells he might fictitiously settle for an artificially low official price, while getting paid the rest under the table so as to expropriate from the original lender. The other problem is that the owner will inadequately maintain the house because he bears all the improvement costs while sharing only part of the benefits. Both these problems, however, can be eliminated by making the contract contingent on the *house price index* at the ZIP code level and not on the price itself. In other words, the price appreciation will be measured as the index appreciation times the initial price of

the house. In this way, on the margin the owner will get 100 percent of the value of the improvements and 100 percent of the higher selling price.

V.2 Rewarding the imprudent/ 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 and Zingales 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.¹⁵

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, even the break families receive in terms of mortgage cost is unlikely to be perceived as an unfair gift because it comes at the cost of half of the future appreciation, whose value homeowners tend to overestimate.¹⁶

V.3 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 fact, 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.

¹⁵ Guiso and Zingales, *supra*.

¹⁶ *Id.*

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.

V.4 Higher credit costs

The financial industry opposes any loan modification because it will increase the future cost of credit and reduce its availability. This fear is generally correct. In our case, however, the prepackaged 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, one that would continue to have effect after the current crisis terminates. This enhanced predictability is a significant advantage.

V.5 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 prepackaged Chapter 13 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 very 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

under 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 Geithner.

V.6 If this is so good, why did it not occur before?

If this prepackaged Chapter 13 is so good, why has the private sector not already written it into the mortgage contracts? And even if this was not done, why has renegotiation failed to achieve the same outcome?

On the first count, the main reason is that 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. 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. 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.

V.7 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 of all, 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%.

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

VI. Legal Issues

Our plan would require amending 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 his primary residence only. It would not give him the right to adjust other debts (such as automobile loans). To do that, he would need to go through regular Chapter 13 proceedings, where mortgage adjustment would also be available (as provided in, for example, the Durbin plan). 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.

The debtor would submit the prepack to a government official—perhaps a 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 prepack. It would

have the right to submit information showing that information on the submission is false, but otherwise would not have the right to oppose the prepack.¹⁷

The debtor's other debt obligations would be unaffected by approval of the prepack. 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 prepack, 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 vulnerable to subsequent secured borrowing on the part of the homeowner.

¹⁷ 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*.