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## **Center for Financial Policy White Paper**

### ***A Way Forward on the Housing Crisis***

Continued weakness in consumer confidence, employment and house prices reinforces the urgent need for effective and comprehensive measures to stabilize the housing market. Thus far policy solutions for housing have been largely fragmented and reactive to emerging problems rather than offering a coordinated strategy executed to achieve long-term market stabilization. Substantial housing tax credits to prospective borrowers have met with only temporary success. Likewise, on the supply side, federal loan modification efforts have had limited impact. Understanding the drivers of weak housing market demand and oversupply leading to disequilibrium is critical to fashioning a successful policy response that will ultimately stimulate demand, reduce housing inventories and stabilize home prices long-term. A workable solution to market stabilization must ensure that incentives are aligned across market participants, and is designed such that borrowers, lenders, investors and the government share in the costs and benefits in an equitable manner.

The current housing crisis signals a classic market failure which requires a clear federal role at bringing stability to the market. However, that role does not mean adding additional financial burdens to taxpayers. A creative and comprehensive private-public housing policy initiative utilizing a combination of shared-equity programs and net worth certificate-like instruments could over time stabilize the market while imposing no direct costs long-term to the federal government.

## **Housing Demand Psychology and Solutions<sup>1</sup>**

With borrowing costs and asset prices at attractive levels to market entrants, other forces must be holding back housing demand. Borrowing from behavioral economics, the demand for housing is determined not just by standard economic forces, but increasingly by psychological barriers of entry dampening demand by prospective homebuyers. In their book, *Animal Spirits*, Akerlof and Shiller highlight the importance of confidence on the macroeconomy.<sup>2</sup> Various studies have found a demonstrable relationship between confidence and future expenditures, confirming the theory of a confidence multiplier at work. In the case of the housing market, confidence is held in check by the borrower's concerns regarding ongoing cash flow (prospect of near-term job loss) and asset valuation (near-term house price decline) concerns. Mortgage instruments that protect borrowers from job loss and house price deterioration are not new ideas, and quick adaptation and promotion of existing products both in the US and abroad could significantly stimulate housing demand.

The current structure of most mortgage contracts in this country leaves the homeowner effectively unhedged against declines in home prices. In being long the asset, homeowners are clearly subject to capital losses should home prices erode from the time the home is purchased. In option terms, a borrower can limit downside losses with a put option as shown in Figure 1.

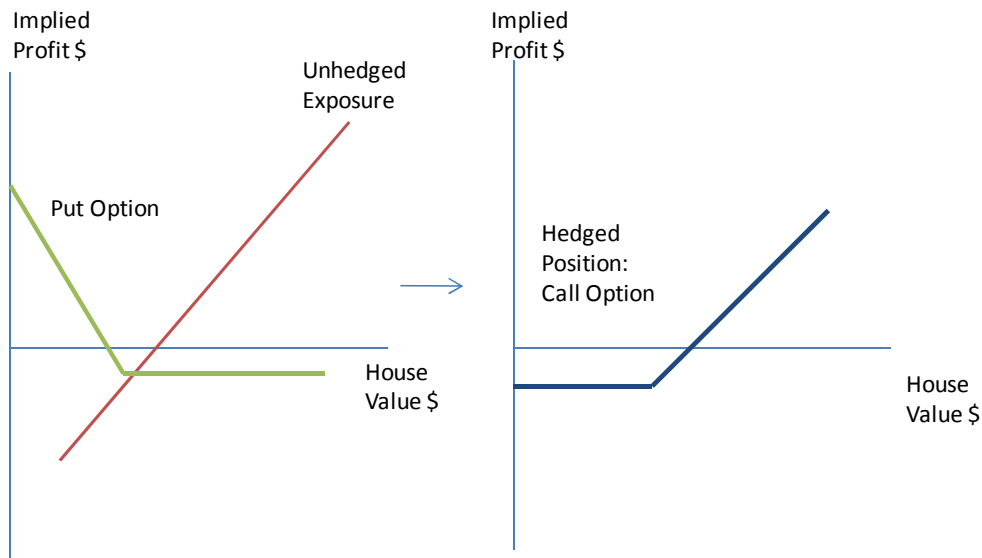
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<sup>1</sup> Clearly another important aspect of stimulating demand is ensuring an adequate supply of credit to mortgage markets. The status of the mortgage secondary market and GSEs requires additional focus and is featured in a forthcoming CFP briefing.

<sup>2</sup> George A. Akerlof and Robert J. Shiller, *Animal Spirits, How Human Psychology Drives the Economy, and Why it Matters for Global Capitalism*, Princeton University Press, 2009.

Unhedged, a borrower whose home was originally valued at \$200,000 with an \$180,000 mortgage and has experienced a decline in home value to \$160,000 would be incented to exercise the put option to the lender by defaulting. The combination of this put option with the long position in the asset effectively creates a synthetic call option in the view of the borrower, albeit with hefty personal and transactions costs such as credit impairment.<sup>3</sup> That call option as shown in Figure 1 limits the downside to the borrower but is costly to both parties.

**Figure 1**



The cost of a home price protection option to the borrower could be priced for explicitly at the time of origination and there are a couple of products that could be developed to address this issue and reduce the incentive for strategic default. The first is an adaptation of the Danish model that provides a call option to the borrower when the market value of the mortgage declines; allowing the borrower to reset the new loan amount to be equal to current mortgage value.<sup>4</sup> Hancock and Passmore provide a compelling case for how such a structure could be

<sup>3</sup> Some would argue that these costs may not be as high as some assign due to the prevalence of strategic default today.

<sup>4</sup> Alan L. Boyce, Covered Bonds vs. Securitization Transparency vs. Opacity, Which is the Right Question?, white paper, 2008.

developed.<sup>5</sup> Such a product would be effective today for first-time home buyers (32% of the market) or existing homebuyers with positive equity (approximately 50% of the market) and hence, not otherwise stranded in their home.<sup>6</sup> A challenge however in setting this program up quickly is that a new financing mechanism would need to be established. Specifically, under the Danish model, mortgage bonds are issued matching the amount of the underlying mortgage which can be called by the homeowner. Modifications to regulatory and legal structures have been cited as potential impediments to successful long-term implementation of a Danish-like balance of principle model.<sup>7</sup>

An alternative to the Danish mortgage model, the Market Protection Mortgage (MPM) could provide home price protection for a price to a borrower concerned about house price deterioration. An example of this is the Australian product marketed as the Equity Finance Mortgage (EFM) that has met with some celebrity in that country but mostly as an affordability product offering.<sup>8</sup> Different from Shared Appreciation Mortgages (SAM) which have met with some skepticism due to adverse selection and moral hazard potential, the EFM is designed to share capital gains and losses proportionately between borrower and lender. Effectively restructuring the mortgage as a combined debt-equity instrument, the borrower takes out a standard 1<sup>st</sup> lien mortgage along with a usually smaller EFM. In return for the lender share of the equity upon sale of the property, the borrower foregoes any periodic payments on the EFM. An alternative configuration for addressing home price downside risk today is to require the borrower to make payments on the MPM but potentially raise the lender's share of capital loss to some preestablished percentage. Under such an arrangement, the lender might in fact establish a maximum price decline that it would absorb. An example of the cash flows and equity sharing are described in a simple example.

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<sup>5</sup> Diana Hancock and Wayne Passmore, "Three Initiatives Enhancing the Mortgage Market and Promoting Financial Stability," *The B.E. Journal of Economics and Public Policy*, Volume 9, Issue 3, 2009.

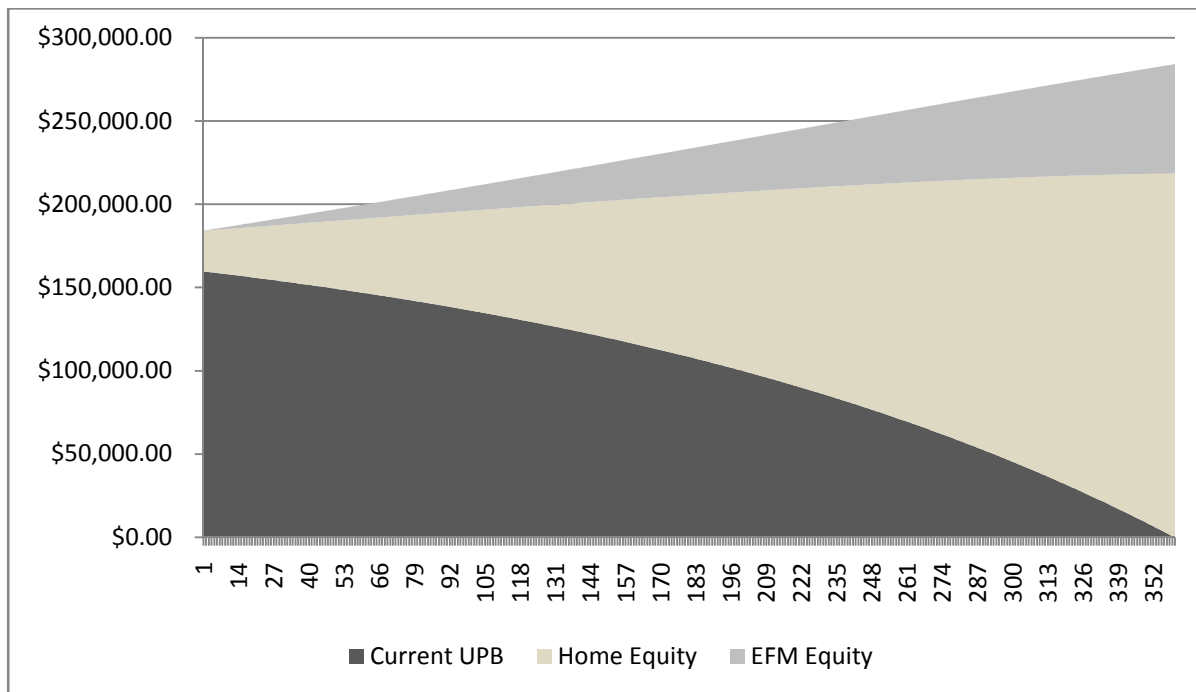
<sup>6</sup> National Association of Realtors practitioner survey, October 2010.

<sup>7</sup> Olivier Hassler, comments at the AEI Symposium, "Can Elements of the Danish Mortgage System Fix Mortgage Securitization in the United States?", 2009

<sup>8</sup> Rismark International, Equity Finance Mortgage Product Brochure, 2007.

Starting with a home originally valued at \$200,000, a borrower puts down 20% of the value, or \$40,000 and takes out a MPM 1<sup>st</sup> lien mortgage of \$160,000. The MPM assumes in this example a 60/40% equity sharing between borrower and lender, respectively regardless of a capital loss or gain on the property upon sale.<sup>9</sup> For purposes of illustration, also assume home prices appreciate at 2% per year. The annual cash flows then are depicted in Figure 2. Under this scenario, the MPM appreciation payment to the lender as well as the borrower’s equity stake over time are shown to widen out as the home appreciates in a more normal house price scenario. By year 7 if the home were sold, the lender would receive about \$12,000 from the MPM in addition to the payments made on the MPM by the borrower.

**Figure 2**

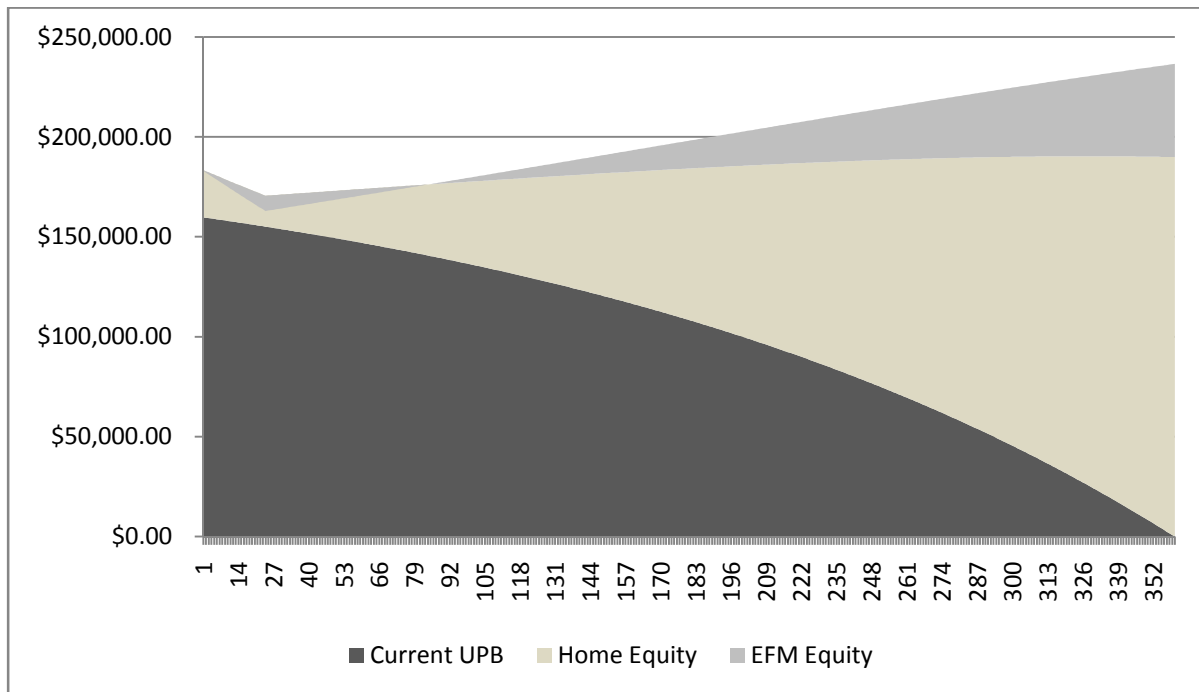


Under a more severe house price scenario where home prices are assumed to decline 5% over the next two years, then return to 2% thereafter, the lender and borrower’s equity streams over time

<sup>9</sup> The MPM equity sharing only applies in the case of a sale and not a refinancing of the mortgage. Further it is assumed the note rate on the mortgages is 5% and the underlying loans are amortized over 30 years.

are depicted in Figure 3. In this simple example, between years 1-7, the lender experiences a loss due to the equity share in the event the property were to be sold. Thereafter, the lender would experience positive equity from the MPM. The actuarial fair lender equity share percentage is determined in part based on a house price and discounted cashflow scenario or simulation analysis.

**Figure 3**



The standard 1<sup>st</sup> lien mortgage and/or the MPM product could on an a la carte basis also offer borrowers job loss protection for a price. Several insurance providers, homebuilders and some mortgage lenders today offer job loss protection associated with a mortgage as part of an offering to borrowers when procuring mortgage insurance products. This job loss protection is directly offered as part of a mortgage or insurance contract and priced into the note rate and/or upfront fees. Protection terms vary from 6-12 months of mortgage payments over the life of the loan. Borrowers are required to demonstrate proof of involuntary job loss (exceptions would exist for job loss due to termination with cause, and voluntary terminations).

The MPM's job loss and equity sharing features could be varied to suit different borrower segments such as first-time homebuyers, existing homeowners and even investors. The latter could feature a cash flow protection on rental income potentially instead of job loss protection. Greater efforts need to be made to ensure wider availability of these types of programs to borrowers. To ensure maximum availability and market place liquidity, the MPM would be established with a set of standard underwriting parameters that require solid verification of employment and income at the time of origination. Further, standardization of underwriting criteria could enable these products to be securitized by either the GSEs or FHA depending on the borrower segment and profile. Creating a MPM-like product provides a unique risk-sharing between borrower and lender, ensuring an alignment of incentives.

A standalone MPM solution would not work for stranded borrower segments that are experiencing negative equity but are still current on their mortgage. And yet this group of homeowners represents between 9-16% of all mortgages in the US.<sup>10</sup> Realistically, borrowers with more than 25% negative equity have a much higher likelihood of default, hence the focus should be on that segment with <25% negative equity. The estimated size of this group ranges from 7-10%. Applying CoreLogic estimates of negative equity for this group of borrowers yields a potential program size of approximately \$165B. By comparison with the total costs to resolve the thrift crisis (\$153B) and the size of the TARP program (\$700B), a stranded borrower modification program appears manageable.<sup>11</sup> Remedies to assist these borrowers have been limited as while still paying on their mortgage, lenders are not incented to modify their loans. By doing so they are subject to costly writedowns under FAS 15 and hence face substantial erosion of their capital base. In addition, should home prices rise, the lender would not benefit from any upside appreciation. This may in fact be short-sighted to the extent that a good portion

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<sup>10</sup> This estimate is based on CoreLogic Q2 2010 data on negative equity showing 23% of mortgages with negative equity, split 10% with  $\geq 25\%$  negative equity and 13% with less than 25% negative equity. In addition, the Q2 MBA delinquency rate (1 payment late plus loans in foreclosure) of 13.97% was used. Finally, the relative risk of a mortgage with 25% or more negative equity versus those with <25% negative equity was varied from 2X – 5X based on CoreLogic's estimates of pre-foreclosure rates on negative equity categories.

<sup>11</sup> The estimate of the size of the stranded borrower program is based on the high end estimate of the range for this group cited above. The estimate for the resolution costs of the thrift crisis is from, Timothy Curry and Lynn Shibut, *The Cost of the Thrift Crisis: Truth and Consequences*, FDIC Banking Review, 1995.

of these borrowers could otherwise desire and qualify to move to another home and thus further stimulate aggregate housing demand. Alternatively some portion of these borrowers may at some point experience repayment problems that could be abated with a modification.

For stranded borrowers, a variation on a theme on the MPM product could be developed and augmented in this situation with a form of net worth certificates to address lender issues. Net worth certificates, much maligned during the thrift crisis turned out to be an effective tool in mitigating further distress in the industry. The vast insolvency issue of the thrift industry in the 1980s was resolved at a cost of less than \$2B due in part to the use of net worth certificates.<sup>12</sup> While some have argued to bring back net worth certificates to assist ailing banks most recently, these instruments could be used to incent lenders to modify performing borrowers with negative equity. The mechanics of net worth certificates enabled the FDIC to buy these instruments from banks in exchange for issuing FDIC senior notes to the banks at the same rate and term (7 years). As a result there was no direct cash outlay.

To facilitate stranded borrowers, they could be offered a principal modification to the current home value. In return, the borrower cedes a higher percentage of equity to the lender upon future sale of the property as a way of providing upside potential to the lender. Applying the net worth certificates concept to principal modifications, the amount written down by the lender would be replaced by a net worth certificate issued by the FDIC and payable by the bank over a specified term. To illustrate how this program could work, consider the following example. A property that originally was valued at the time of purchase at \$200,000 with an original loan amount of \$180,000 is currently valued at \$160,000, generating \$20,000 in negative equity absent loan amortization. Clearly the lender would be reluctant to approve a principal modification to the current home value given the writedown it would face. In this situation, some argue that there is no need to modify a loan that is current. However, the negative equity increases the probability of delinquency at some point as strategic default has become more prevalent among borrowers with a current capacity to repay their loan obligations. To mitigate

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<sup>12</sup> William M. Isaac, "A Better Way to Aid Banks," Washington Post, September 27, 2008.

that potential exposure that can further destabilize housing markets, the government could issue a form of net worth certificate (in this case a negative equity certificate, or NEC) that immediately compensates the lender for the effect of the principal writedown.<sup>13</sup> The bank is then obligated to repay the NEC over a pre-specified period of time. Under the modification arrangement, the lender and borrower restructure the loan so that the lender retains a disproportionate share of the capital gain to the property over time. The payback period for the NEC would be set based on a preset house price (HPI) path by the government. For example, assuming a 2% annual HPI rate and a 75% equity share for the lender, the lender NEC payback period would be 8 years with interest accruing to the outstanding balance over time. Ideally, the borrower should retain some equity appreciation stake in the property to incent proper maintenance and payment behavior. Establishing the borrower share rate would be dependent upon future HPI assumptions and a desired payback period. To get a sense of the variability in payback, Table 1 provides payback periods by the lender under differing HPI and original home price depreciation scenarios under an assumption that the lender retains 75% of any appreciation post-modification.

**Table 1**

HPI Scenario	Actual HPI Decline				
	-10%	-15%	-20%	-25%	-30%
1%	0	8	15	24	33
2%	0	4	8	12	17
3%	0	2	5	8	11

It is clear from this simple example that in order to keep the payback period in a range less than 10 years, this type of modification with NEC arrangement would only be available for homes that suffered low to moderate house price declines. Borrowers in areas hardest hit by the housing crisis would not likely be targeted for this type of modification given the assumptions

<sup>13</sup> A potential limitation to current principal modification programs are pooling and servicing agreements (PSAs). Considerable variation in the terms permitting servicers to modify loans exists and any solution must satisfactorily address these obstacles. In addition, the accounting treatment of NECs under fair value standards would need to be examined for any possible changes required to facilitate the program.

used. Still, with 13% of borrowers today experiencing <25% negative equity in their homes, such a program could have meaningful effect in forestalling future delinquencies.

Currently, issues surrounding 2<sup>nd</sup> lien mortgages complicate permanent modification solutions. Obtaining agreements from 2<sup>nd</sup> lien holders is problematic first because of difficulties identifying who holds these junior mortgages. Also, if they are identified, obtaining agreement among parties to the modification is difficult. To address these concerns, efforts to establish a consolidated mortgage lien data repository should be initiated at the federal level, requiring all mortgage servicers to contribute data that clearly identifies the lien holder and matches 1<sup>st</sup> and 2<sup>nd</sup> liens. The newly established Office of Financial Research would be a likely agency to lead this effort. In addition, provisions made for the 1<sup>st</sup> lien with respect to NECs could be offered to 2<sup>nd</sup> lien holders as well. If enacted these actions could pave the way for many more permanent modifications.

## **Supply-side Remedies**

Having explored options to rejuvenate slumping housing demand, a comprehensive solution to the housing crisis must include supply-side remedies. Rising foreclosures contribute to the overhang of supply as evidenced by recent data showing that the US supply of housing stands at about double what it should be in equilibrium. Mounting foreclosures contribute to rising inventories of real-estate owned (REO) which in turn elevate supply and depress home prices. Lenders have been creative in devising arrangements with property sales firms incenting quick sale of REO property. Given the size of the problem for banks, the GSEs and FHA, additional consideration should be given to creating additional sales incentives to the REO buyer. One way to do this would be for the lender to offer a Cash for REO program, designating a specified percentage of current home price in the form of a payment at the time of closing that could be used for repairs or closing costs. Again, lenders would need to be incented to take on this arrangement and so the government may provide payment covering this sales rebate. To get some sense of the size of such a program, applying CoreLogic's Q2 estimate of US property

values of \$12.7 trillion and Barclay's Capital estimate that REO inventories will peak in 2011 at 545,000 properties representing just over 1% of all properties; a 5% cash payment program would cost approximately \$7.25B. This upfront cost could be paid for through a shared equity arrangement between the buyer and the lender that in turn would make the payment back to the government via a variation of the NEC structure. Not unlike the arrangement for stranded borrowers, the structure of the loan would set an equity sharing between the bank and borrower that is capped at the level of the rebate provided (e.g., 5%). On a \$200,000 property, the bank would recoup \$10,000 later on the future sale of the property from appreciation. The lender would as before have a prespecified period to repay the government. In this way, prospective borrowers would be further incented to absorb REO properties and this type of structure should increase interest by investors as well.

Solutions for borrowers in foreclosure and delinquency are limited. An unfortunate cost of the crisis is the foreclosure problem and the human toll it has taken. Depending on assumptions, borrowers with more than 25% negative equity that are in some stage of delinquency represent between 4.5% - 8.5% of all mortgages. Having exhausted all other available workout remedies, these borrowers must be fast-tracked through judicial and nonjudicial foreclosure processes as efficiently as possible. Clearly this places additional pressure on stretched mortgage servicing operations as well as raises the REO inventory downstream in the short-term.<sup>14</sup> Doing so, however, restores borrower confidence and accelerates the home price recovery process. The same would be true for delinquent borrowers that are not eligible for workouts. These borrowers should be swiftly moved into foreclosure in an effort to stabilize the housing market as soon as practicable. Borrowers that are delinquent but are determined to have capacity to repay a modified mortgage equal to the current value of the home could enter into a similar equity sharing with NEC arrangement as with stranded borrowers but in this case, the borrower receives an even smaller equity stake going forward. In this way, delinquent borrowers would not benefit as much as current borrowers from home price appreciation. These supply-side remedies would tend to shrink the number of available homes on the market today and in conjunction with

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<sup>14</sup> This could also raise the estimated costs of any Cash for REO program, but as mentioned earlier could still be paid for via a combination of equity sharing loans and NECs.

demand-side solutions proposed earlier could bring about house price stability more quickly than under existing policy.

## Summary

With no end in sight to the housing crisis, current policies to address demand and supply disequilibrium have thus far been largely piecemeal and lackluster in terms of stabilizing the market. This threatens to prolong the crisis which continues to further erode confidence, housing market activity and overburdens already weak servicing operations. A more creative set of policy solutions is needed to avoid long-term stagnation in the housing market. These solutions need to be bold, align incentives across interested parties and pose negligible cost to the taxpayer over time. Using those principles to guide this proposal, a set of programs, tailored to suit specific borrower groups can stimulate demand and reduce supply in the market. These are summarized in Table 2.

**Table 2**

	<b>Borrower/Loan Type</b>	<b>Proposal</b>	<b>Federal Role</b>
<b>Demand Side Effects</b>	First-time Homebuyer	MPM + Job Loss Protection	Indirect thru securitization
	Current - Positive Equity	MPM + Job Loss Protection	Indirect thru securitization
	Current - Negative Equity	MPM + NEC	Direct thru NEC & Shared Equity
	Investors	MPM + Cash Flow Protection	Indirect thru securitization
	2nd Lien	Consolidated Data Warehouse	Office of Financial Research
<b>Supply Side Effects</b>		Match 1sts & 2nds/MPM + NEC	Office of Financial Research
	Delinquent - Principal Mod Eligible	MPM + NEC	Direct thru NEC & Shared Equity
	Delinquent - Not Principal Mod Eligible	Foreclose	None
	Foreclosure	Foreclose	None
	REO	Cash for REO	Direct thru NEC & Shared Equity

Today, psychological barriers to entry play on the minds of potential buyers more than has been the case in years past. The threat of job loss and future home price erosion are strong deterrents to home purchase. The proposals presented here address these issues by creating products that

protect buyers from job loss and home price deterioration while not creating a direct burden to the taxpayer. Further, a variation on the net worth certificate could be used to incent lenders to take on large principal writedowns. This structure augmented with an equity sharing modification would ensure that the federal government be paid in full. Further, a Cash for REO program combined with a NEC and a shared equity component (MPM) between the lender and borrower could stimulate demand for REO properties which plague the market today while imposing no cost onto the taxpayer over time. The proposals if implemented together would maximize market impact; however, some could be implemented sooner than others based on operational feasibility and other considerations. For example, the MPM product and job loss protection feature could be brought to market relatively quickly while the NEC may require additional time to put in place. To allow the housing market to languish without powerful policy prescriptions jeopardizes recovery not only for housing but for the larger economy as a whole.

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