

Good Asset Purchase Plan (GAPP)

--- A Strategy for Economic Recovery

Dr. Shaun Wang, on April 14, 2009

Abstract

In this paper we propose a Good Asset Purchase Plan (GAPP), as a cure for the falling U.S. housing market and a stimulus for economic recovery. The central theme of the plan is that the U.S. Government directly purchases minority shares (say, up to 20%) of good assets such as residential properties and farm land. The Government's minority shares are equity investments in real assets, not loans to the homeowners. GAPP will reduce household mortgage debt and increase available fund for investment, thus effectively stem the foreclosure tide and revitalize the housing market.

This paper presents a set of coherent principles, and performs mathematical analysis of GAPP refinancing for three classes of homeowners, according to two criteria: (i) whether the level of homeowner equity drops below 20%, and (ii) whether a mortgage is performing.

We estimate that up to \$1.25 trillion is required to fund GAPP. The U.S. Government can finance GAPP through debt issuance backed by shares in acquired real assets. The funding will not increase the budget deficit or the net national debt, thus will keep the long-term integrity of the U.S. dollar intact.

Under GAPP, vast amounts of liquidity will be released from *good* assets and flow into the real economy. With \$1.25 trillion total government investment, there would be an estimated \$5 trillion stimulus impact on the U.S. economy. Further, GAPP can serve as a macro-economy tool --- the Government can adjust the size of its minority shares as a lever to counter economic cycles.

GAPP also will help restore the health of the ailing banking sector by strengthening the surviving banks. When a large number of home mortgages are refinanced through GAPP, it will expedite the cleaning up of banking balance sheets by sorting out non-performing mortgage loans and hard-to-value mortgage securities. The surviving banks after this process will be strengthened, and will play an important role in GAPP implementation, by underwriting new loans and administering the Government's minority shares of real assets.

Keywords: housing; residential mortgage; refinancing; debt-for-equity swap; debt reduction; financial crisis; government stimulus; GAPP

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Section 1 -- Introduction

In countering the worst financial crisis and economic recession since the 1930s (see [1]), the U.S. Government has rolled out several bailout plans and stimulus packages. Existing plans (see [2], [3], and [4]) are based on the premise that by pouring enough money into financial institutions to buy up non-performing mortgages and toxic assets, the financial institutions and the economy will eventually recover. So far, existing plans have not yet been able to break the vicious cycle of deteriorations in the housing market, the financial market, and the real economy (see [5] and [6]). The Congressional Oversight Panel (see [13]) recently issues an urgent call for changes in strategy by the U.S. Treasury Department. The U.S. economy is currently under emergency care by the Government, waiting for more decisive and bold actions at a national scale. In answering this urgent call, we propose an economic rescue plan based on a new strategy, as indicated by its name -- “Good Asset Purchase Plan” (GAPP). The plan calls for a major shift in strategy:

1. The U.S. Government, serving as the ultimate liquidity provider, should buy *good* assets, as opposed to *toxic* assets. Backed by good assets, the long-term integrity of the U.S. dollar will be strengthened, rather than weakened; in the meanwhile, large amounts of liquidity will be released from *good* assets and flow into the real economy for more productive use.
2. It is critical to identify and differentiate good assets from bad assets. Good assets include real assets such as residential and commercial properties, farm land, and effective institutions and businesses that can put human capital in delivering essential services. While a non-performing mortgage may be toxic, the underlying real asset has intrinsic value and thus is a good asset. With this clear distinction, it is essential for the U.S. Government to purchase good real assets, rather than buying non-performing mortgages or impaired mortgage-backed securities.

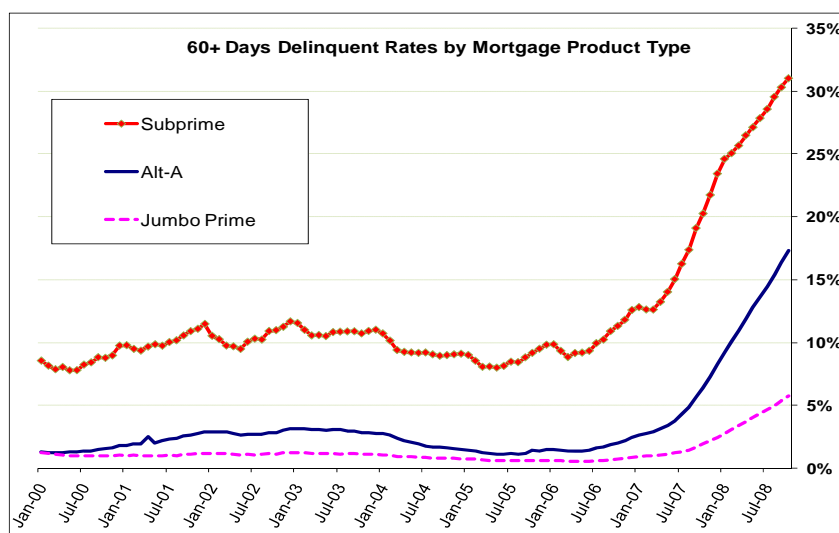
The fundamental thinking that led to the GAPP is that for the U.S. economy to recover from the current illness, the cure must directly tackle the root causes. We now discuss two related root causes of the current financial crisis: (i) the collapsing housing sector, and (ii) the heavy indebtedness of American households.

Root Cause #1: Collapse of the Housing Sector

It is generally agreed that the current financial crisis started with the boom and bust of the U.S. housing market (see [7] and [8]). Between year 2000 and 2006, a combination of easy credits and rapid growth of mortgage securitization has fueled an unprecedented housing bubble in the United States. With unrealistic expectations of future housing price increases, mortgage loans were made to low-credit (“subprime”) borrowers who would not otherwise qualify for the mortgages, and large sums of mortgage loans were

taken out by high-credit (“prime”) borrowers with little down-payment. These over-stretched (subprime and prime) borrowers have high loan-to-value ratios; very soon they were unable to make their mortgage payments, delinquency and foreclosure rates started to rise. The emergence of mortgage troubles (see Figure 1) led to the failure of Wall Street titans Bear Stearns and Lehman Brothers and the near failure of Fannie Mae and Freddie Mac. The housing prices started to collapse, causing mammoth losses reverberating around the world through the securitization market, which then creates a furious vicious cycle, dragging down valuation of financial assets (stocks, bonds, mutual funds, etc) and freezing credit flows in the economy.

Figure 1. Delinquency Rates Increase Sharply Since Early 2007
(Source: First American CoreLogic, LoanPerformance)



Recently, the First American CoreLogic (see [9]) has released “negative equity” estimates for all single-family residential properties in the US. The data includes nearly 45 million mortgaged properties, which accounts for over 85% of all mortgaged properties in the US. As of the end of December 2008, over 8.3 million U.S. mortgages or 20% of all mortgaged properties were in a negative equity position, which means a borrower’s mortgage debt is more than the value of the home. There are an additional 2.2 million mortgaged properties that are approaching negative equity. These are defined as mortgages within 5% of being in a negative equity position. Negative equity and near negative equity mortgages combined account for 25% of all mortgaged residential properties nationwide.

Detailed distributions of homeowner equity are provided in Figure 2 and Table 1. Mark Fleming, Chief Economist for First American CoreLogic, states that “The accelerating share of negative equity, combined with deteriorating economic conditions, means that mortgage risk will continue to increase until home prices and the economy begin to stabilize. The worrisome issue is not just the severity of negative equity in the ‘sand’ states, but the geographic broadening of negative equity that is expected to occur throughout the year”.

Figure 2: Summary of December 2008 National Distribution of Homeowner Equity
 Source: First American CoreLogic [9]

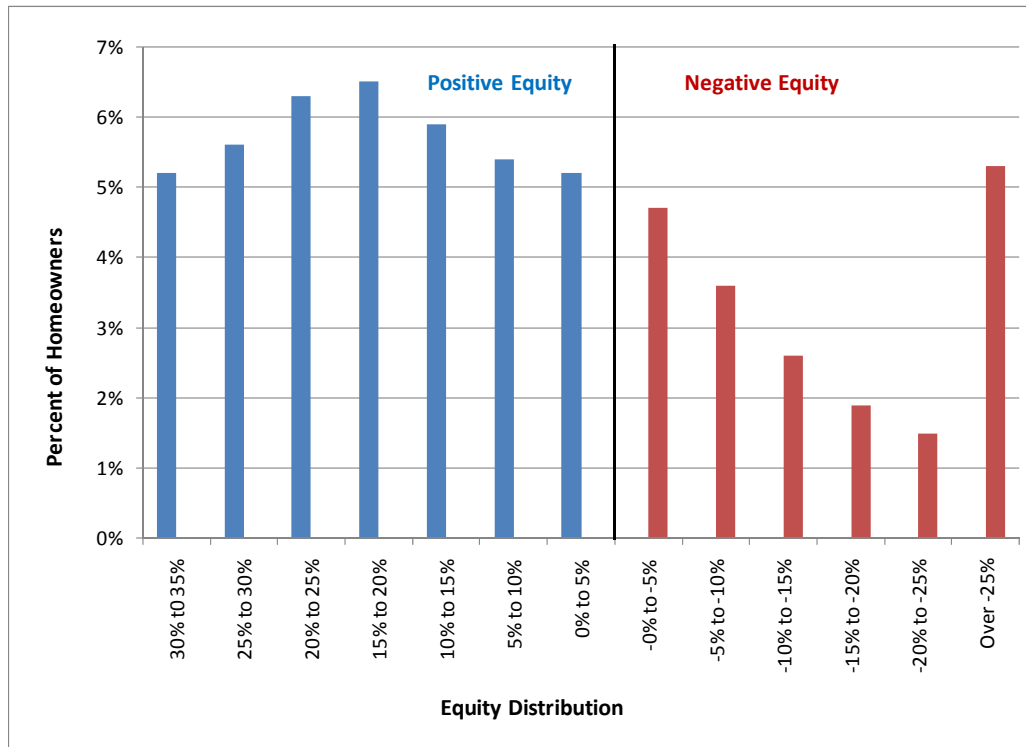
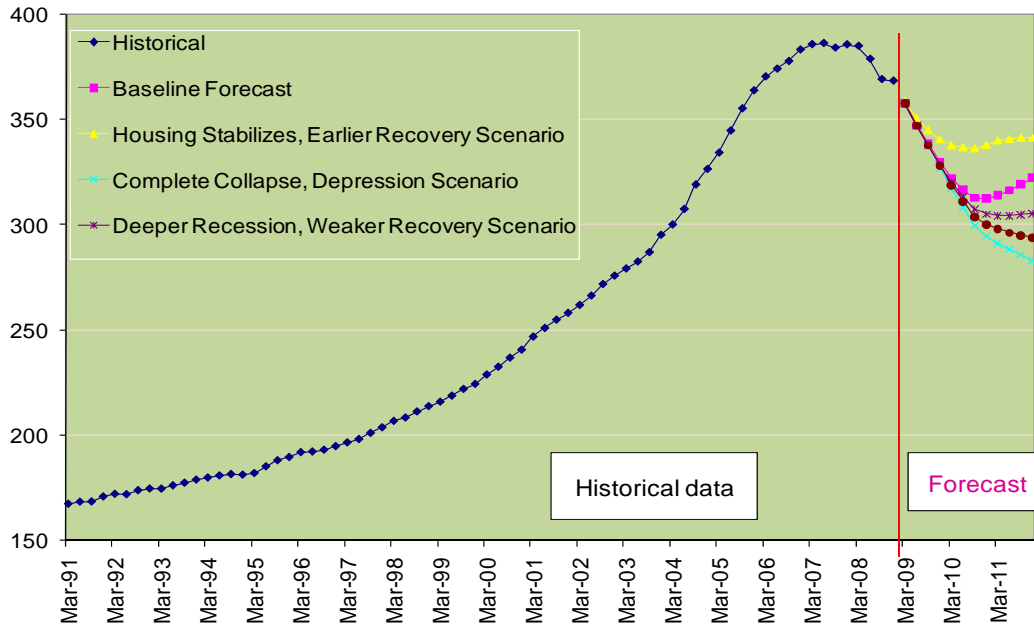


Table 1. Distribution of Homeowner Equity

Homeowner Equity	Number of Mortgages (millions)	Percentage of Mortgages
30% to 35%	2.2	5.20%
25% to 30%	2.4	5.60%
20% to 25%	2.6	6.30%
15% to 20%	2.7	6.50%
10% to 15%	2.5	5.90%
5% to 10%	2.3	5.40%
0% to 5%	2.2	5.20%
-0% to -5%	2.0	4.70%
-5% to -10%	1.5	3.60%
-10% to -15%	1.1	2.60%
-15% to -20%	0.8	1.90%
-20% to -25%	0.6	1.50%
Over -25%	2.2	5.30%

According to Moody's Economy.com, the OFHEO House Price Index is expected to fall even further within the next 1-2 years. Moody's gives five scenarios in their forecasts as shown in Figure 3. In the baseline scenario, Moody's forecasts another 15% drop in house prices. This would force an additional 6.9 million homes currently having positive equity to shift to the negative equity territory, and would cause even bigger losses to the economy.

Figure 3. Historical and Predicted OFHEO House Price Index (Source: Moody's Economy.com)



These figures highlight that the housing sector is not only the root cause of the current financial crisis, but will remain to be the culprit of the unfolding economic recession. There is a real urgency to fix the housing market. Dr. Martin Feldstein [8] offered his insights in a March 2008 Wall Street Journal opinion piece --- “limiting the number of such defaults, and preventing the overshooting of price declines, requires a public policy to reduce the number of homeowners who will slide into negative equity. Since house prices still have further to fall, this can only be done by a reduction in the value of mortgages.”

Root Cause #2. Heavy Indebtedness of American Households.

The other side the same coin (“the current housing trouble”) is heavy indebtedness of the U.S. households (see Figures 4 & 5). Carrying heavy debt burdens, tens of millions of American households are struggling for mere survival to make their ends meet, with little money for investing and saving.

Figure 4. Household Debt Service Payments as a Percentage of Disposable Personal Income; (Seasonally Adjusted Data; Source: Federal Reserve Board)

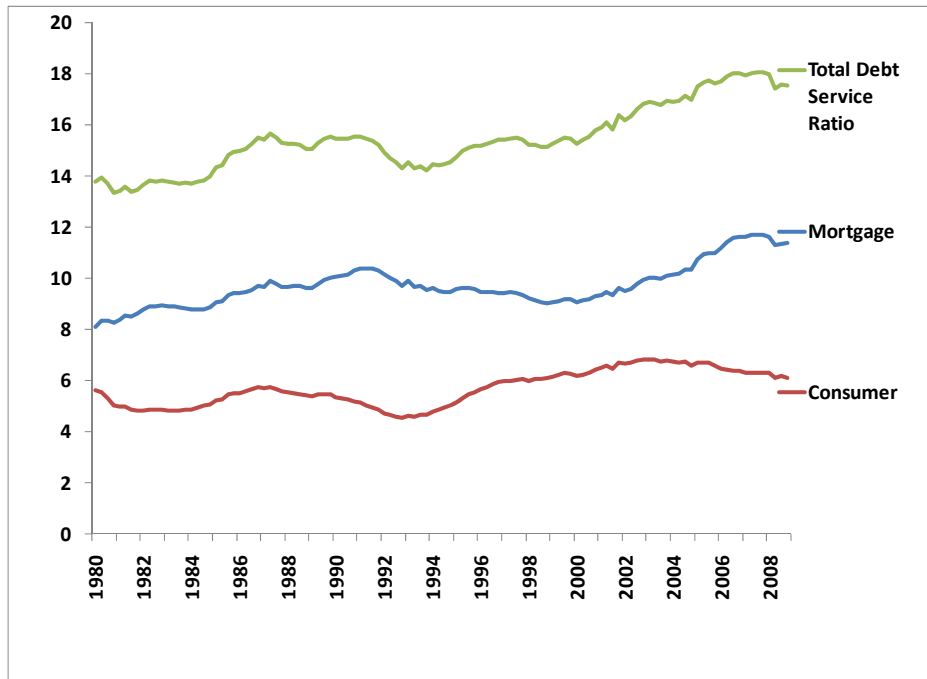
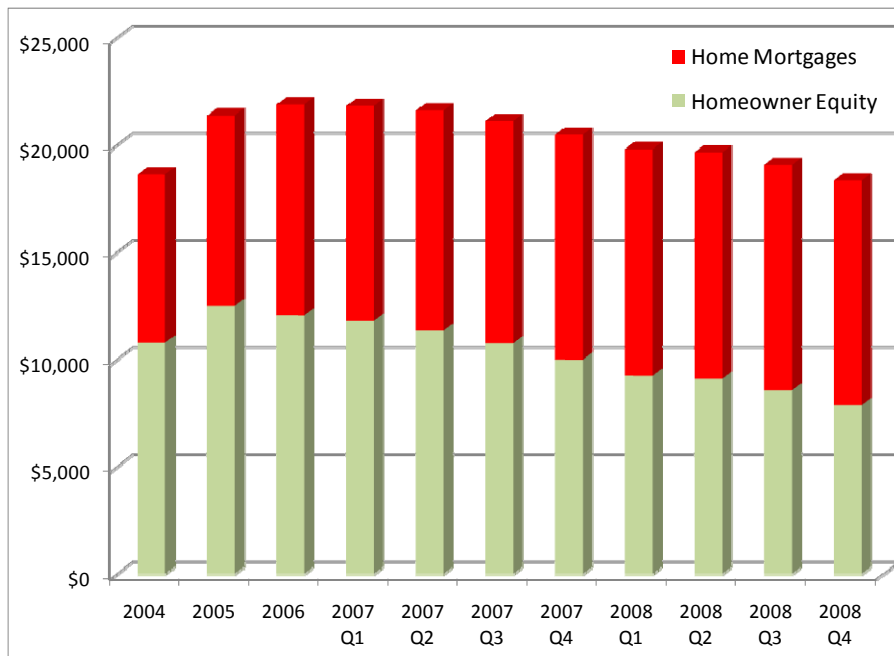


Figure 5. Total U.S. Household Real Estate Market Values (In billions of dollars; Source: Federal Reserve Board)

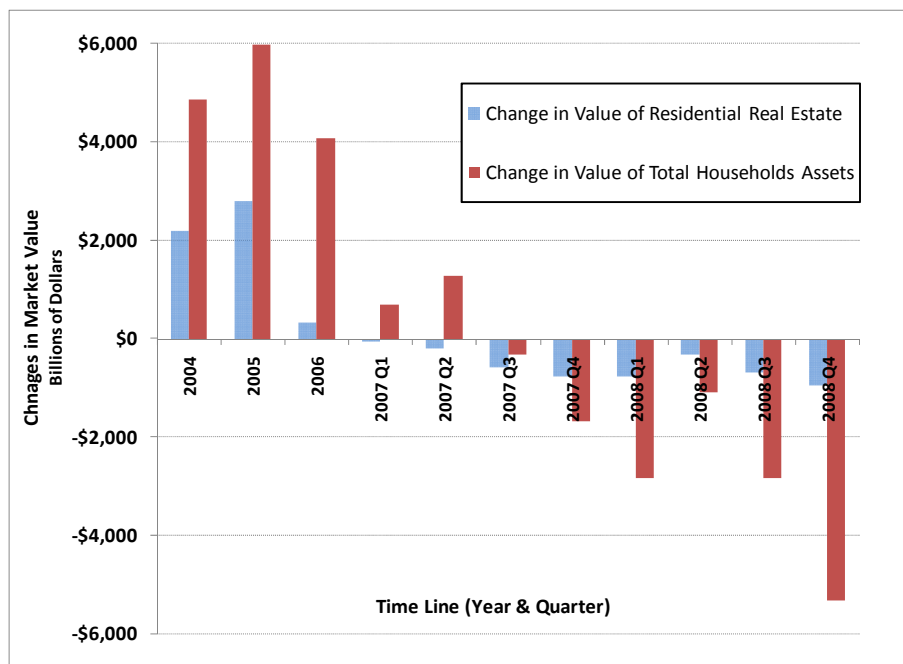


The Housing Sector's Magnifying Effects on Broader Assets

According to Federal Reserve Flow of Funds Accounts ([10]), the losses in the housing sector have dragged down other financial assets, causing significant destruction of household net worth (see Figure 6).

- ✓ The homeowner’s equity — the difference between the houses market values and outstanding mortgage balances — fell \$937.1 billion in the fourth quarter of 2008, and fell \$2.7 trillion for the whole year.
- ✓ In the meanwhile, the total households’ net worth — the difference between the value of assets and liabilities — fell \$5.1 trillion dollars in the fourth quarter of 2008, and fell \$11.2 trillion for the whole year.
- ✓ During the year 2008, we see a 5-times magnifying effect of housing meltdown on broader financial assets.

Figure 6. Magnifying Effects of Spreading Falling Housing Prices to Other Financial Assets
(Source: Federal Reserve Board)



In summary, we conclude that (i) unless the housing sector recovers, it would be impossible to see broader economic recovery; and (ii) unless the debt burdens of American households are reduced, any economic recovery will be shallow at best. Therefore, the cure should start with the housing sector, and we must address the issue of heavy-indebtedness of American households. In the remainder of this paper we propose the Good Asset Purchase Plan as a cure that will directly strengthen the housing sector and simultaneously reduce the debt burden of U.S. households.

Section 2 -- GAPP for the Housing Sector

The central idea of the GAPP is that the U.S. Government directly purchases some minority share (up to 20%) of good assets such as residential properties and farm land. While non-performing mortgages are toxic assets, houses themselves have intrinsic value and are good assets. A key point is that the Government's minority share of a good asset is *equity*, not a *debt*. Thus, the homeowners' total debt burden is reduced, and as a result, the monthly mortgage payments will be reduced as well.

The GAPP is based on a coherent framework that consists of following basic principles and parameters:

- To attract homeowner participation, the Government may offer a higher price than the current appraisal value.
- Homeowner's participation is voluntary.
- Government's share in each transaction is capped by 20%; this is to avoid distortions of private ownership incentives.
- All houses with performing mortgages are eligible for GAPP refinancing; on the other hand, houses with non-performing mortgages (i.e., those with 60+ days delinquent mortgages) may not be eligible for GAPP refinancing. This principle is to reward responsible behavior and to discourage irresponsible action.
- In the GAPP refinancing, there must be at least 20% down payment in the new loan. This is to stick to a hard-rule underwriting standard, and to avoid repeating past mistakes of loose underwriting.
- Due to falling house prices, many houses may encounter funding gaps for refinancing (the homeowner equity is insufficient for the 20% down payment in the new loan). In this case, the Old Lender agrees to take a haircut and to swap the gap amount of debt for a "swap share" in the house, then exchange the swap share with the Government for cash payment.
- There should be professional studies of the incentive effects and close government monitoring of the implementations. Some boundaries need to be set accordingly (e.g. impose a cap on the amount of cash to be taken out from super-sized homes in expensive areas).

Having outlined a set of principles, we now discuss in more details of the GAPP. We envision that the GAPP for the housing sector be carried out through refinancing transactions, which would involve the following parties:

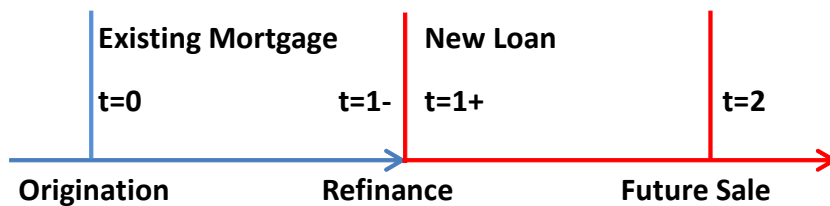
- ✓ The Homeowner of the house under discussion
- ✓ The Old Lender, the lender of the existing mortgage
- ✓ The U.S. Government, who will become co-owner after purchasing minority share of the property
- ✓ The New Lender, the provider of new mortgage loan
- ✓ Investors, including institutional (insurance companies, pension funds) and individual investors

Figure 7 shows a timeline of a GAPP refinance transaction; some key time points are

- ✓ $t = 0$, the time of origination of the existing mortgage,

- ✓ $t=1$, the time of refinancing,
- ✓ $t=1_-$, immediately before the refinance,
- ✓ $t=1_+$, immediately after the refinance,
- ✓ $t=2$, the time of future sale of the house.

Figure 7. Timeline of a GAPP Refinance Transaction



We now introduce the following notations:

- ✓ Let $HousePrice(t)$ denote the house price at time “ t ”
- ✓ Let $HousePrice(1_-)$ denote the appraisal value prior to the refinancing. Here we assume that appropriate appraisals have been done by the New Lender at the refinancing.
- ✓ Let $HousePrice(1_+)$ denote the price offered by the Government for minority share purchase.
- ✓ Let $LoanBalance(t)$ denote the principal amount outstanding at time “ t ”.
- ✓ The difference between $HousePrice(t)$ and $LoanBalance(t)$ represent the amount of Owners’ equity in the house, based on appraisal or market value. We denote

$$Owners_{equity}(t) = 1 - \frac{LoanBalance(t)}{HousePrice(t)}$$

- ✓ After refinancing, the house is co-owned by the Homeowner and the Government. Thus both the Homeowner and the Government contribute to the Owners’ equity:

$$Owners_{equity} = Homeowner_{equity} + Gov^t_{equity}.$$

We will separately discuss GAPP refinancing for three classes of homeowners according to the following criteria:

- i. Whether the mortgage is performing or not. Here we define non-performing mortgages as those 60+ days delinquent.

- ii. If the mortgage is performing, whether the homeowner equity is sufficient for 20% down payment in the new loan.

Class I: Houses With Performing Mortgages & At Least 20% Homeowner Equity

Consider the Class I of homes, namely those with performing mortgages and there is sufficient homeowner equity to pay down 20% in the new loan. The Class I includes houses that are already fully paid (with zero mortgages outstanding). Based on U.S. Census data (see [11]) and First American CoreLogic data (see [9]), we estimate that there are currently 45 million homes in Class I, including 24 million homes which are fully paid off, and another 21 million mortgaged homes having at least 20% homeowner equity.

Each house in the Class I is eligible for GAPP refinancing. The Government offers to buy a minority share of the house at a price $HousePrice(1_+)$, which may be higher than the appraisal value $HousePrice(1_-)$.

The Homeowner may choose to sell $\alpha\%$ share to the Government at cash amount of $\alpha\% * HousePrice(1_+)$.

With $\alpha\%$ share Government purchase, and the Homeowner paying down $Homeowner_{equity}(1_+)$, the New Lender only needs to lend the remaining portion, $(100\% - Homeowner_{equity}(1_+) - \alpha\%)$, of the $HousePrice(1_+)$. In this case, the Old Lender receives the full remaining balance of the existing mortgage.

The net cash amount that the Homeowner receives, after netting for changes in house price and possible changes in homeowner equity, can be calculated by the following formula:

$$\alpha\% * HousePrice(1_+) + Homeowner_{equity}(1_-) * HousePrice(1_-) - Homeowner_{equity}(1_+) * HousePrice(1_+),$$

which can be used by the Homeowner for investment or other use. The Homeowner's mortgage debt is now reduced by the Government's $\alpha\%$ equity purchase, that is,

$$LoanBalance(1_+) = 100\% - Homeowner_{equity}(1_+) - \alpha\%.$$

Example 1: If a homeowner purchased his home at \$300,000 several years back, which now has an appraisal value of \$340,000 (immediately prior refinancing). The homeowner has been paying mortgages on time and has a mortgage remaining balance of \$180,000 (immediately prior refinancing). Suppose that the Government offers a price of \$374,000 (at 10% premium over appraisal value) for the house. Using our notations we have

- $HousePrice(1_-) = \$340,000.$
- $HousePrice(1_+) = \$374,000.$
- $LoanBalance(1_-) = \$180,000.$

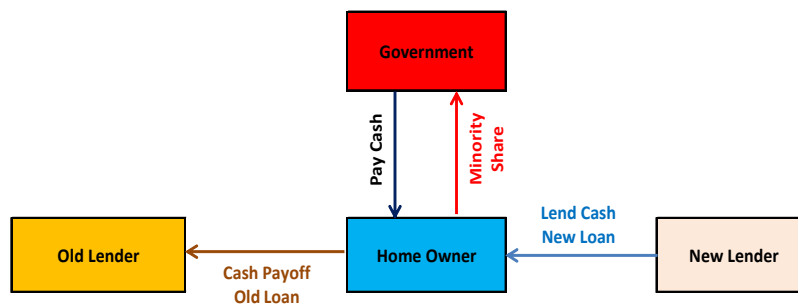
- $Homeowner_{equity}(1_-) = 1 - \$180,000/\$374,000 = 47\%$.

If the homeowner chooses to sell $\alpha = 10\%$ share to the Government, and keep the same level of $Homeowner_{equity}(1_+) = 47\%$ after refinancing, the homeowner will receive a cash payment of $\$21,420 = 10\% * \$374,000 - 0.47 * (\$374,000 - \$340,000)$. homeowner and the Government have a combined 57% house equity. The new $LoanBalance(1_+) = \$374,00 * (1 - 0.47 - 0.10) = \$160,820$, is reduced from the previous $LoanBalance(1_-) = \$180,000$.

If the homeowner chooses to sell $\alpha = 20\%$ share to the Government, and keep the same level of $Homeowner_{equity}(1_+) = 47\%$, the homeowner will receive a cash payment of $\$58,820 = 20\% * \$374,000 - 0.47 * (\$374,000 - \$340,000)$. The homeowner and the Government have a combined 67% house equity. The $LoanBalance(1_+)$ is further reduced to $\$123,420$, which is 33% of the house value of $\$374,000$.

Figure 8 shows the flows for all parties involved in the refinancing transaction.

Figure 8. Flow Chart of Refinancing Transactions in Example 1



The Class I homeowners may include many retiree and baby boomers. It remains to be seen how many homeowners in Class I will eventually participate in the GAPP. After all, these are performing and healthy mortgages. Nevertheless, participations from homeowners in this class are essential, since this class of homeowner have the highest liquidity stored in real estate assets, part of that can be freed up to provide much needed liquidity in the economy for more productive use.

Class II: Home with Performing Loans but Less Than 20% Homeowner Equity

Consider the Class II of homes, namely those with performing existing mortgages, however, due to falling housing prices in the neighborhood, the homeowner equity is insufficient for 20% down-payment in the new loan. Based on First American CoreLogic data (see [9]), we estimate that there are roughly 14 million homes in Class II (the number may increase to 19 million if home prices continue to drop another 10%). This is the most critical class of homeowners for the GAPP, since these homeowners are being forced to the borderline of foreclosure territory and their positions need to be strengthened.

All performing homes in Class II are eligible for GAPP refinancing. As a guiding principle, we insist upon a minimum 20% combined Owners' equity in the new loan. This requirement will potentially create a gap in refinancing:

$$\text{Gap} = \max \{ \text{LoanBalance}(1_-) - 80\% * \text{HousePrice}(1_+), 0 \}.$$

Proposed Solution: Debt for Equity Swap

We propose that the funding gap is to be shared by the Homeowner and the Old Lender, with the support of the Government. We propose that the Old Lender to accept a debt-for-equity swap arrangement so as to restore the combined Owners' equity back to 20% after refinancing, that is, $\text{Owners}_{equity}(1_+) = 20\%$. The gap in funding is to be converted to a swap share (which is also capped at 20%):

$$\text{"swap share"} = \min \{ \text{Gap}/\text{HousePrice}(0), \text{Gap}/\text{HousePrice}(1_+), 20\% \}.$$

The Government will buy this "swap share" from the Old Lender for a cash amount of

$$\text{"swap share"} * \text{HousePrice}(1_+).$$

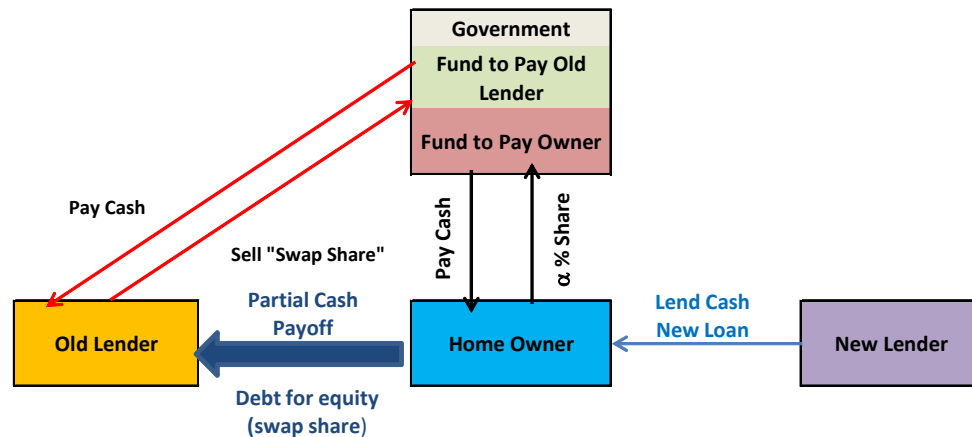
Further, the Government offers to buy from the homeowner an additional minority share, as long as the total Government share in the house is still capped at 20%.

If the homeowner decides to sell $\alpha\%$ to the Government, the New Lender will need to lend an amount of

$$\text{LoanBalance}(1_+) = (100\% - 20\% - \alpha\%) * \text{HousePrice}(1_+).$$

The homeowner's share in the house is reduced by the Government's share. Nevertheless, the homeowner remains to have at least 80% share in the house. The combined Owners' equity in the house gets restored back to at least 20%. The homeowner receives a reduction in debt, with the new loan balance being reduced to $(80\% - \alpha\%)$ of $\text{HousePrice}(1_+)$. Figure 9 illustrates the flow charts among various parties.

Figure 9. Refinancing Transaction Involving Debt Swap for Equity



Example 2: Consider a homeowner who purchased his house at \$400,000, which is now valued at \$300,000 at today's appraisal value (that is a 25% drop in house value). The Old Lender issued the existing mortgage of \$320,000 at origination, and due to monthly payment amortization the remaining balance is \$300,000 immediately prior refinancing. The homeowner equity has been wiped out completely due to housing price depreciation in the neighborhood. The existing mortgage is performing; however, mortgage default risk has increased significantly due to zero homeowner equity.

The Government offers to buy a minority share at a price of \$330,000 (which represents a 10% premium over appraisal value). For this homeowner, there is clearly a gap for refinancing. This shall require the Old Lender to accept a debt-for-equity swap for the amount of gap in refinancing. In order to restore the combined Owners' equity to 20%, the gap in refinancing is:

$$\begin{aligned} \text{Gap} &= \max \{ \text{LoanBalance}(1_-) - 80\% * \text{HousePrice}(1_+), 0 \} \\ &= \max \{ \$300,000 - 0.8 * \$330,000, 0 \} = \$36,000, \end{aligned}$$

which will be converted to a swap share = $\min \{ \text{Gap}/\text{HousePrice}(0), \text{Gap}/\text{HousePrice}(1_+), 20\% \}$.

$$= \min \{ 36,000/400,000, 36,000/330,000, 20\% \} = 9\%.$$

The Government will buy this swap share from the Old Lender for a cash payment at

$$\text{"swap share"} * \text{HousePrice}(1_+) = 9\% * \$330,000 = \$29,700.$$

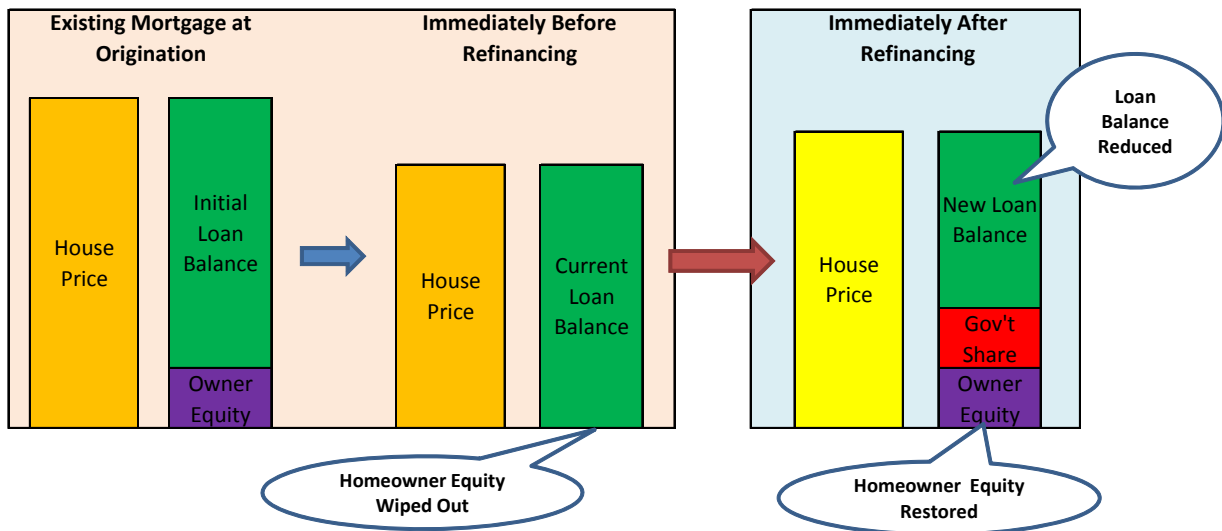
The Homeowner can now choose to sell up to $11\% = 20\% - 9\%$ share to the Government. In the event that the Homeowner sells $\alpha = 11\%$ to the Government, and uses the proceeds from the sale to pay down the mortgage debt, the new mortgage loan is reduced to

$$\text{LoanBalance}(1_+) = (100\% - 20\% - \alpha\%) * \text{HousePrice}(1_+) = \$227,700 \text{ (which is 69\% of } \$330,000).$$

Figure 10 illustrates the effects of GAPP refinancing on house value, allocation of shares, and amount of mortgage debt. Some observations are in order:

- The Old Lender, by taking a modest haircut, \$6,300 (= \$36,000 – \$29,700), removes potential default risk (considering that the homeowner had zero equity prior to refinancing). It is likely that a foreclosure would have been more costly to the Old Lender.
- The New Lender is willing to make the new mortgage loan since the loan amount is now reduced to \$227,700 from previously \$300,000, and the homeowner and the Government have a 31% combined Owners' equity in the house.
- With GAPP refinancing, the existing mortgage is replaced by a new loan. When most of existing mortgages are refinanced to new loans, it will expedite the cleaning up of toxic mortgage securities whose valuations depend on the cash-flows (principals and interests payments) from the existing loans.

Figure 10. Homeowner Equity and Loan Balance, Before and After the Refinancing



Class III. Houses With Delinquent Mortgages or in the Process of Foreclosure

The Class III is comprised of homes with delinquent mortgages (60+ days delinquent) or in foreclosure filing (default notices, auction sale notices and bank repossessions).

According to RealtyTrac “2008 Year-End Foreclosure Market Report” (see [12]), there are about 2.3 million properties had foreclosure filings during the year 2008. Using LoanPerformance data, we estimate that a total of 3.9 million properties that are 60+ days delinquent as of October 2008. Assuming that there are significant overlaps between the set of foreclosure houses and the set of 60+ days delinquent houses, we estimate a total of 4 to 5 million properties in Class III at the end of 2008.

Homeowners of delinquent mortgages (in Class III) would not be eligible for GAPP refinancing. However, new buyers or investors with good credits are eligible for GAPP in purchasing homes, regardless the home being purchased is in Class I, II or III. For non-performing mortgages, the Old Lender should be allowed to take over the property from the current homeowner, and turn around to sell to other investors. To restore good underwriting practice in the housing market, this process is a medicine that needs to be taken. Separate Government programs may be used to provide help to those who lost their homes. Overall, the GAPP should make it easier for new buyers or investors to come in, thus, alleviate the financial loss from stressed sales.

Section 3 – Other Considerations of GAPP

Implementing GAPP in Installments

We expect that the U.S. Government purchases will have immediate stabilizing effects on the housing prices, and will bring out steady recovery in housing prices. To ensure smoother effects, the Government may consider injecting the GAPP stimulus in two installments, with the first dose purchasing 10% (or 15%) of the house; and keep the option open for a second dose at a late date to purchase another 10% (or 5%) at a new appraisal value.

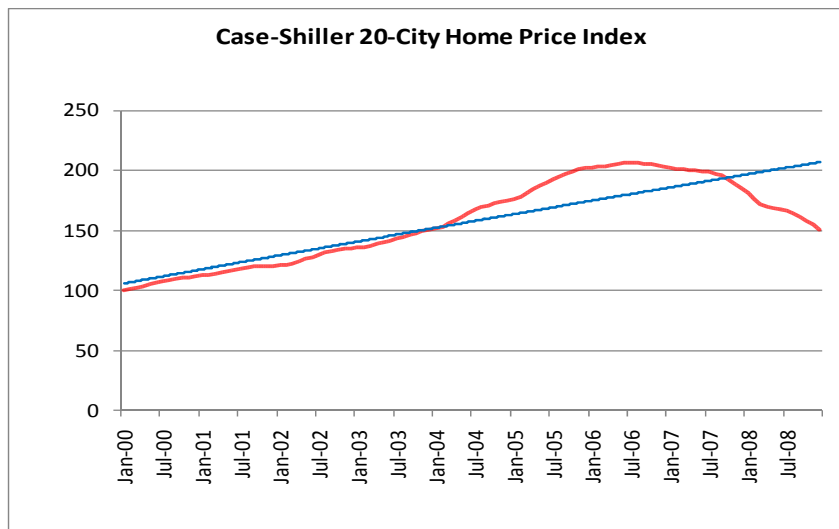
Social Equity Considerations

To avoid misapplications of GAPP, the Government needs to set boundaries to limit the amount of cash can be taken out from super-sized homes in expensive areas. Government may define a threshold value (such as \$1 million, depending upon the specific region). For luxurious houses whose values exceed the threshold value, some special provisions may be made. This paper will not address this issue in depth.

Now Would Be A Good Time for Government Purchase

As shown in Figure 11, the Case-Shiller 20-city Home Price Index peaked in July 2006, and has since fallen 27% by the end of year 2008. The current house prices are below its 2000-2008 trend line by over 20%. Now may be a good time for Government to purchase houses, leaving potential for making a decent return on investment over the long run. These potential returns on the Government's equity investments would be used to offset the carrying costs of funding the GAPP.

Figure 11. The Case-Shiller 20-City Home Price Index



Exit and Share Reduction Rules

There should be clear exit (and share reduction) rules for the Government's minority stake. The terms should be mutually agreeable, or based on pre-defined formulae. GAPP should make it easier for homeowners to buy back shares from the Government without incurring significant transaction costs. The Government can assume proportionally the capital gains or losses at the time of exit or share reduction, with proper adjustment for house improvement expenses.

An Estimate of the Size of Needed Funding for GAPP

Based on U.S. Census data (see [11]) and a chart provided by calculatedrisk.blogspot.com, we estimate that the current average house price for homes with mortgages is \$250,000. In our baseline scenario we expect a total of 25 million homes to participate in the GAPP (with 7 million, 15 million, and 3 million homes from Class I, II, and III, respectively). Assume that 20% shares are subscribed by participating homeowners through a 2-phase implementation during a 2-year time span, with the Government purchasing 10% share in phase-1 and the other 10% share in phase-2. This will amount to a total of government investment of \$1.25 trillion.

How to Fund the GAPP?

The U.S. Government can fund the GAPP purchases of minority shares in houses by issuing new debt. The Government purchases would not add to the budget deficit or to the net national debt. The gross U.S. Government debt would rise by the amount of the new purchases under the GAPP, but this would be balanced by the asset value of minority shares of houses. The Government purchases will have a positive impact on the recovery of housing prices, resulting in a net gain for tax-payers. With expected asset value appreciations in the next few years and increased tax revenues from a growing economy, it would result in significant reduction in net national debt.

As an alternative or additional source of funding, the Government may choose to securitize the future proceeds from its minority shares in houses to investors. The securitization may be appealing to pension funds and insurance companies since they hold long-term liabilities.

Stimulus Impacts of GAPP

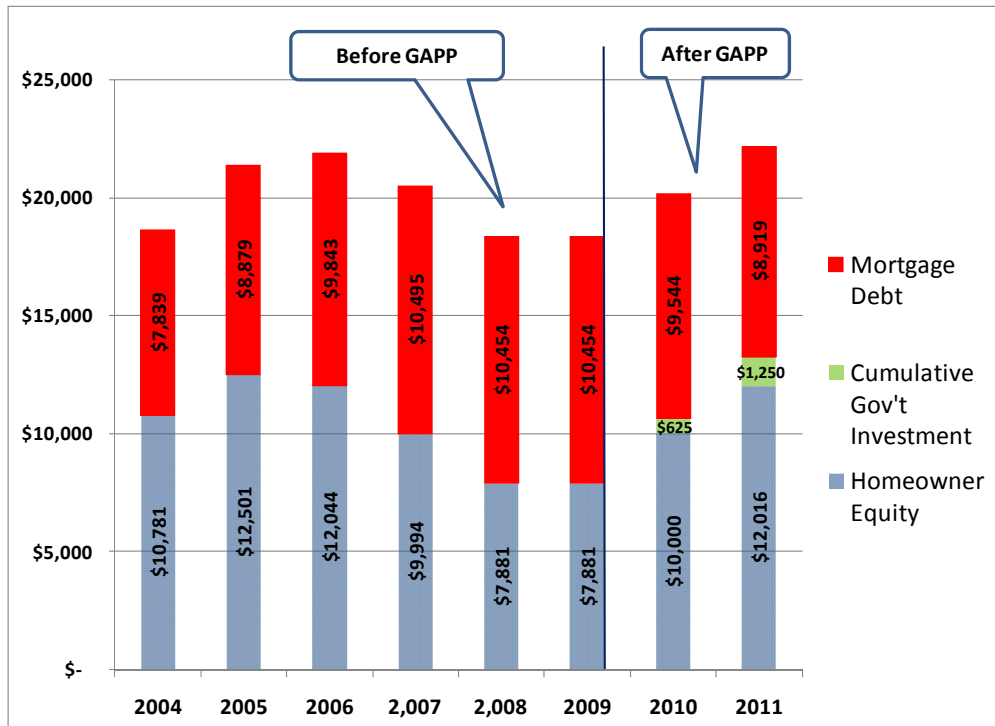
Consider the instance that the Government buys a 10% share of a house with an offering price that is 10% higher than appraisal value. For every \$1 dollar purchase by the Government,

- There will be \$1 dollar reduction in mortgage debt, and a reduction of \$0.05 in mortgage interest payments every year.
- There will be \$1 (\$10 * 10%) dollar increase in the house value, thus an additional \$0.90 (\$1 * 0.90) increase in the homeowner equity.
- The total increase in the homeowner equity, from both house value appreciation and debt reduction, will be \$1.95 (= \$1.05 + 0.90)
- Moreover, the house price appreciation will be magnified through the valuations of other financial assets, with a multiple of “2” or more (see Figure 6).
- As a result, the total stimulus impact for \$1 Government purchase will be about \$3.9 or higher.

We estimate that for \$1.25 trillion invested in GAPP, there would be about \$5 trillion stimulus impacts on the economy.

Consider a 2-phase implementation of GAPP, to be announced in late 2009 and implemented swiftly following the announcement. We expect that the announcement of GAPP will immediately stabilize house prices in 2009. With the massive government stimulus and restoration of investor confidence, we expect the arrival of elevated inflation, and real assets will serve as effective hedge for future price inflation. With the implementation of GAPP, we expect a 10% house price increase in year 2010, plus another 10% house price increase in 2011. Figure 12 shows our baseline scenario of estimated impacts on total house prices, the resulting increases in total homeowner equity, and the reduction in mortgage debt.

Figure 12. Aggregate U.S. Residential House Prices, Homeowner Equity and Mortgage Debt (Before and After GAPP; in billions of dollars)



Macro-Economic Lever for Steering the Economy

Although GAPP participation is voluntary for homeowners, the U.S. Government can adjust the offered house prices to induce desired quantity of transactions. By offering higher prices to pay for a minority stake, it can attract more homeowners to participate.

The GAPP can serve not only as a stimulus plan during economic recession, but also as an effective tool for steering economic cycle swings. The U.S. Government can use its minority ownership in acquired houses as a “lever” to maintain economic equilibrium:

- During economic boom times, the U.S. Government can choose to sell some incremental shares, say 5%, of ownership of the property back to the homeowner and effectively absorb some excess liquidity.
- During economic recession, the U.S. Government can choose to buy additional shares of ownership of the property and effectively inject more liquidity.

GAPP and the Banking Sector

The banking system plays a vital role in directing economic activities through circulation of credit and allocation of resources. Based on the same principles of GAPP, the Government should strengthen solvent banks so that they become healthy banks, while letting insolvent banks dissolve. We propose that the U.S. Government invests a *non-voting minority share*, up to 20%, in surviving banks, as a direct way of injecting capital while keeping private enterprise independent of the political process. The percentage of minority share ownership can serve as a “lever” to help maintain equilibrium:

1. During economic boom times, the U.S. Government can choose to sell some incremental shares, say 5%, of ownership of the bank to effectively absorb some excess liquidity. Naturally the sale price will be higher during booming times.
2. During economic recession, the U.S. Government can choose to buy additional shares of ownership of the bank and effectively inject more capital. Naturally the purchase price will be lower during downturns.
3. Over the long run, the transactions by the U.S. Government are expected to profit tax payers.

Let us return to the theme of the paper -- GAPP for the housing sector. A healthy bank would serve as the new lender, service the new loan, and manage the Government’s minority stake for a fee. Incentives need to be aligned to ensure that house values are appraised accurately and the new loan is properly underwritten. Through partnership with healthy banks, GAPP could be up and running quickly, say, within months after the legislation is passed by the U.S. Congress and an executive order signed by the U.S. President.

Section 4 – Conclusion

The U.S. is grappling with the worst financial crisis since the Great Depression, and the Congressional Oversight Panel recently issues an urgent call for changes in strategy by the U.S. Treasury Department. With this backdrop, our paper offers a Good Asset Purchase Plan, as a cure for the falling housing market and stimulus for economy recovery. The GAPP represents a new thinking, shifting our eyes away from complex mortgages and to focus on the underlying real assets. The author hopes that the paper is thought-provoking and will help the U.S. Government to form a new strategy to combat the financial crisis and bring the U.S. economy to prosperity. Many detailed aspects of the GAPP still need further consultation with various professionals and government agencies. The reader is welcome to provide additional inputs and discussions.

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