

Solution of Value and Its Application to Financial Crises

Abstract

No one wants to CHANGE the current value-absent scientific culture more than members of Post-Science Institute. Of all the CHANGES WE NEED, the first, the most important, and the most urgent is the way that the current society determines value. For example, the incorrect solution of value is the cause of most and the current financial crises; it should be perfectly clear to everyone by now that the crisis occurs because THE PRICE IS WRONG!

This article has two parts: Part I gives an overview of the problem and the solution of value. Part II provides an actual Treasury solicited solution for its Guarantee Program for Troubled Assets, which is an insurance system for an asset after an accident. The application to the Guarantee Program is important because the insurer, being the last to hold the bag of responsibilities, is really holding the power of dictating the requirements of the initial transaction, particularly, the requirement for correct valuation.

Part I: How To Determine Value, and Premium

Value can be defined as the sum total of all the future benefits and losses to infinity in time. Value is generally expressed as the price or the rate of return on investment. Insurance premium depends on value determination and will be commented on after the comment on value in the following paragraphs.

In order to specify the inputs to value determination to infinity in time, all the inputs are expressed as approximate time invariant quantities. The inputs are obtained from comparisons to past data. Only time-invariant quantities should be compared to the past.

The price depends on the future expectations. The price should not be compared to past prices. The price to be calculated changes continually to infinity in time, with the continually changing future expectations. The price is a time-variant quantity.

The standard of rigor of science is empirical verification. In order for empirical verification, phenomena in science must occur within a finite time duration. The correctness of the price paid cannot be empirically verified because the price changes continually to infinity in time. The concept of a time-variant quantity does not exist in science. Being impossible to be empirically verified, social science needs to subscribe to a rigor more stringent than that of science. The solution of value needs to be mathematically rigorous.

Full disclosure is an important and practical characteristic in price determination. Full disclosure should include the methodology of calculation and all the inputs to infinity as well as the output. Government regulations on valuation should include the requirement of full disclosure, which will enable full accountability in the future.

In fact, the whole process of price determination is to relate the price and all the factors affecting the price from now to the infinite future in a mathematically rigorous fashion. When it is mathematically rigorous, the solution of value is a non-violable law of nature in social science, as non-violable as mathematics.

Free market championed by **Milton Friedman** might function better than a market regulation by man-made laws, but free market is only free within the limit set by the non-violable laws of nature in social science.

Friedman and I had some heated communications during the last years of his life on the existence of non-violable regulations of nature. The debate turned two old friends into intellectual adversaries. There is also a debate among top economists on returning to government regulation in view of the current crisis. But, for me, Milton Friedman is still the only thinker in the twentieth century who had built an intellectual mountain.

Friedman with the quantity equation of money ($PQ=VM$) could have saved our current economy from another possible Great Depression. The equation **Price x Quantity = Velocity of Circulation of Money x Money Supply ($PQ=VM$)** requires that the circulation and the supply of money be kept up with the gross national product. The equation, after further examination, could be another important law of nature in social science, while the problem of excessive national debt, which is a man-made, self-imposed financial discipline, is hardly noted during the current crisis.

Briefly, the problem of value can be described as the satisfaction of the cash flow equation, **Cash Return = Sum Of Cash Flow + Cash From Resale**, for the price and all the resale prices to infinity in time and space. For multiple commodities with uniform functionality, the quantities for each price are summed to form the quantitative supply and demand curves whose intersection gives the equilibrium price.

Gerard Debreu has described the problem of value with mathematical rigor in his book *Theory of Value*. On page 34 of the book, he uses a discounted cash flow equation to determine the temporal dependence of the price. **Kenneth Arrow** asked me once: **“What’s wrong with discounted cash flow model?”** My answer was that in order to discount correctly, a different discount rate should be used for each and every year, and having to use

different rates made the method impractical. The rate, as an input, should be an approximate time-invariant quantity, which should be obtainable from comparison to past rates and can be used as a market comparable in the future.

Arrow's question actually raises a serious criticism of the fundamental concept of modeling in knowledge. In science, where the problems are simple, the discrepancy between a model and the reality is generally within a tolerable range. But, in social science, where there are around fifty variables versus five for science, as exemplified by the number of inputs to the solution of value, reality generally cannot be simplified into models.

Benedict Spinoza advised to “**follow reality and avoid using abstraction**” and to “**solve a problem in its entirety.**” Today he would be against methodology based on modeling and methods, which assign weights to different factors based on time-series analysis of past data. The cash flow equation used in the solution of value is the realistic accounting of cash flow. To solve the problem of value in its entirety, the solution must include the consideration of all the future consequences to infinity in time and space, as Debreu has insisted in his book.

In computer hardware chip design, knowledge is distinguished into structural and descriptive. The structural knowledge deals with how the circuit works, and the descriptive knowledge, how it looks like. Social scientists also use mathematics descriptively and structurally. However, any solution in social science should have a structural part. In particular, the solution must be deterministic in that the number of equations must equal to the number of unknowns. In the solution of value, the deterministic set of equations and unknowns can only be collected when the consideration is taken to infinity in time.

Paul Samuelson initiated the descriptive mathematical approach in economics. Mere description of a problem, regardless whether the language is English or mathematics, would still leave the problem unsolved. Debreu, at least, solved the spatial dependence of the problem of value with a structural approach involving the fixed point theorem. And his mathematical description using set theory has greatly clarified the problem of value.

The insurance company, being the last to hold the bag of responsibility, has the full burden of knowing the values of all things happened before. The guarantee program for trouble assets is, fortunately, sponsored by the government, which has unlimited power to print money and highest authority, but is still subordinate to nature. Even the government must observe the non-violable law of nature in the form of the solution of value.

To guarantee troubled assets is like to insure a car after an accident. What is needed is an estimator of damage, and the insurer can raise to premium in the future based on the estimation. The estimator is an appraiser of value. The determination of the premium for insuring troubled assets should start from the determination of the value of troubled assets.

Very roughly, the partial premium for one troubled part of the asset might be

Premium = (Sum of default principal and interest payments + Mortgage - Value of collateral of asset)/Number of premium payments + Premium for untroubled asset

where for trouble assets the last term is generally small compared to the first term on the right side. For real estates, the asset is mortgage backed security (MBS). Even for an untroubled asset, the risk of MBS depends heavily on the value of the real estate.

The wholesale default of credit default swap (CDS) on MBS is most likely due to the incorrect method used in determining the value of the premium. Those methods used by AIG and Fannie/Freddie should be seriously questioned.

Both the collateral, which is the real estate, and the premium for untroubled asset (MBS) involve the valuation of the real estate. The situation might seem to be complicated by the possible absence of a market. But, price should not depend on market comparable prices and should depend on expected future cash flows.

The value of real estate, for example, can be calculated easily using the valuation software on the web:

<http://www.123is.com/fedreal.htm>

One of the immediate applications of the above valuation system is to calculate the effect of interest rate on price. Just doing two calculations by changing the current interest rate and the resale interest rate by one percent will show the change of the price due to the change of the interest rate. Changing the interest rate from 6.5% to 5.5%, the price changes by 9.15%.

The determination of the price should depend mainly on the comparable inputs of rents and rent increases, not on market prices, which are generally incorrect in a depressed market. The above valuation system has successfully predicted, and could have prevented, the Savings and Loan Crisis and the Subprime Woe by detecting market over-valuation. During these financial crises, no reasonable inputs, no matter how they are stretched, could justify the price in the valuation system.

Value can also be expressed as the expected rate of return on investment. The problem of value can be considered the determination of the price when the rate of return is known, such as for real estates, or the rate of return when the price is known, such as for stocks. The expected rate of return on investment, like all the other inputs, except the price, is a time-invariant quantity.

Deterministic price determination takes one iterative loop. Calculation of the rate of return requires two iterative loops, one for the price and the other for the return. Stock valuation involves time-varying inputs for an initial finite time interval, as shown at the web link:

<http://www.123iss.com/fedstock.htm>

The priorities of proposed projects should be based on the expected rates of return. For example, the toxic assets could have one of the lowest rates of return because the rate, when the assets are over-valued, is most likely negative, by definition. However, investing in and guaranteeing the troubled assets could have, due to the high risks involved, very high rates of return, when the premium is not prohibitively large.

To behave as a private investor with nearly unlimited funding, the US government for long-term consideration should decide its priorities in terms of the expected rate of return. The following is a short list of investments with their approximate rates of return from Post-Science Institute:

1. Venture capital investments (rate of return $> 100\%$ per year)
2. Real estate development (50% to 100%)
3. Small business (40%)
4. Commercial real estate (15% in 1980s and 12% in 2000s)
5. Mature large corporations and banks (10%)

6. Stocks (5% to 150%; each company has its own rate of return)
7. Houses and condos (10%)
8. Road, bridge, and other infrastructure building (5%)

Capitalism must survive through continual innovations (>100% rate of return). Mankind gets about one major innovation in a generation or 25 years. The most recent two are the PC Revolution based on the microprocessor and the Internet.

Money matters, but is not everything. The left side of the equation PQ in $PQ=VM$ plays equally important role. Our current crisis is also caused by the decrease in PQ after the low-tech housing industry, which is used to fill up the vacuum left in the economy after the crash of the Internet industry, can no longer sustain the economy.

Post-Science Institute would like to recommend investing part of the economic rescue money on revitalizing the disrupted Internet explosive growth, which is the main innovation of the current generation with its supporting innovations in multi-media, wireless technology, nanotechnology, etc.

All the other untested emerging innovations, such as new energy sources, particularly nuclear reactors, and environmental projects, should only be funded publicly after their rates of return have been calculated. Thus, a correct solution of valuation should take one of the highest priorities.

There should be enough evidence from the S&L Crisis, the Subprime Woe, the failures of Fannie/Freddie, AIG, Bear Stern, Lehman Brothers, Washington Mutual, etc. that we need a correct solution of price determination and that the market comparison method generally used in price determination is incorrect.

The market comparison method in real estate or actuarial analysis in insurance is just the blind following the blind until everyone falls off a cliff in a financial crisis. The fall of AIG should be ample proof that actuarial analysis does not work for insuring MBS.

Incorrect solutions of value create irrational market participants. Irrational market participants produce incorrect market prices. Incorrect market prices cause financial crises. Conversely, correct solutions of value creates rational market participants and correct market prices. **When all market participants, including the government, use correct solutions of value, most past, present, and future financial crises should be predictable and avoidable.**

The permanent solution to our financial crises, which are certain to grow in severity, is to enlist knowledge-centered greatest minds in our society to outthink the ingenuity of money-centered inventors of financial instruments, which will also grow in number and sophistication.

The Federal Reserve, Treasury, FDIC, and SEC should jointly establish a valuation center to search, verify, recommend, and teach valuation systems and for their own operations.

One of the most important contribution of the rate of return calculation is in: **How To Set Interest Rate.** The logical economic relationship should be:

Inflation Rate < Interest Rate < (Expected) Rate of Return

where the rate of return should be calculated for all the major business and industry sectors and for the main investment types within each of these sectors.

Solving the complete problem of value described by Debreu should be the first step in the development of a new social science based on value. The correct solution of value should be the foundation of rational decision and policy making and should be able to solve most of our past, present, and future financial crises.

Money can offer temporary relief for our economic pain, but only knowledge can provide permanent solutions and real progress to our society.

Thank you for your attention. Hugh Ching, Post-Science Institute

Part II: The Treasury Guarantee Program

Comment and Answers (10-28-2008) from:

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DEPARTMENT OF THE TREASURY

Development of a guarantee program for troubled assets.

AGENCY: Department of the Treasury, Departmental Offices.

ACTION: Notice and request for comments.

SUMMARY: The Department of the Treasury invites the general public to comment on a program to guarantee the timely payment of principal of, and interest on, troubled assets originated or issued prior to March 14, 2008, as authorized by Section 102 of the Emergency Economic Stabilization Act of 2008 (EESA).

DATES: Written comments should be received on or before October 28, 2008 to be assured of consideration.

SUPPLEMENTARY INFORMATION: Section. 102 of the Emergency Economic Stabilization Act of 2008 (Pub. L. 110-343) (EESA) charges the Secretary of the Treasury to develop a program to guarantee the timely payment of principal of, and interest on, troubled assets originated or issued prior to March 14, 2008. The Secretary is authorized to set and collect premiums from participating financial institutions by category or class of asset, taking into consideration the credit risk characteristics of the asset being

guaranteed. The premium must be sufficient to cover anticipated claims, based on actuarial analysis, and ensure that taxpayers are fully protected. The structure of the guarantee program may take any number of forms and may vary by asset class. The Treasury Department is soliciting comments to assist in the development of the guarantee program. The Treasury Department is particularly interested in comments on the specific questions set forth below.

I would like to comment first on the following part of the SUPPLEMENTARY INFORMATION.

“Section. 102 of the Emergency Economic Stabilization Act of 2008 (Pub. L. 110-343) (EESA) charges the Secretary of the Treasury to develop a program to guarantee the timely payment of principal of, and interest on, troubled assets originated or issued prior to March 14, 2008.”

Should the statement “to guarantee the timely payment of principal of, and interest on, troubled assets” be “to guarantee the timely payment of principal of, and interest on, troubled assets plus the balloon payment...”?

Subject: Valuation vs. Actuarial Analysis

I would like to comment on the following statement in the proposed troubled asset guarantee program for MBS:

“The Secretary is authorized to set and collect premiums from participating financial institutions by category or class of asset, taking into consideration the credit risk characteristics of the asset being guaranteed. The premium must be sufficient to cover anticipated claims, based on actuarial analysis, and ensure that taxpayers are fully protected.”

The “actuarial analysis” should be replaced or, at least, supplemented by the valuation of the real estate because the value of the real estate largely determines “the risk characteristics” of the mortgage on the real estate.

Actuarial analysis is generally used by insurance companies to estimate an accident rate, which corresponds to the probability of accidents. The probability historically stays within a narrow range.

To guarantee MBS, the risk of default depends mainly on the different between the value of the mortgage and the value of the real estate. The actuarial analysis based on historical data would generally be misleading, if the conditions, for which the probability of default is calculated, are not fully compatible. Thank you. ###

“The Treasury Department is particularly interested in comments on the specific questions set forth below.”

Although the questions below are quite comprehensive, most people who comment here would also be interested in commenting on the official answers of Treasury. I would suggest that Treasury publish the official answers and allow a short period for further comments.

Also, a serious comment should be accompanied by a short description of the qualifications of the author. Thank you.

Here is my qualifications:

I have almost no experience in insurance. My expertise is in real estates and valuation (30 years), stocks and finance (10 years), and mathematical science (Doctor of Science MIT, Post-doctor Courant Institute of Mathematical Sciences). I am the inventor of the Infinite Spreadsheet and Permanent Software. Dr. Ta-You Wu and I solved the problem of robot touch with the new physics concept of jumpulse, a sudden change of force. Starting in 1984, Dr. Bill Kinnard and I led a team of top real estate appraisers in an unsuccessfully effort to introduce a solution of valuation for solving the S&L Crisis to legislators, who solved the problem politically with \$150 billion. My comments to the Treasury and the Federal Reserve are related to the unfinished business with, and are now dedicated to the memory of, Dr. William N. Kinnard, Jr.

1. What are the key issues Treasury should address in establishing the guarantee program for troubled assets?

This could turn out to be a very bold and clever program, if it can “shield” the troubled assets so that they will never go into default. My understanding of the purpose of the guarantee program is that once the chain of interconnect financial system is broken at one place, namely, the troubled assets, the amplification of the Subprime Woe by over-leverage and financial derivatives will stop. The Treasury guarantee would make MBS as secure as Treasury bond and its CDS worthless.

The key issues are “How” and “How Much.”

“How” is for the guarantee program to shield the troubled assets so that they will never go into default. This certainty will help stabilize the financial market by breaking the chain of events which leads the economy into a financial vicious cycle. The guarantee program, if done correctly and undeterred by legal, accounting or regulatory issues, could be one of the least expensive ways to break the chain.

“How Much” is for the guarantee program or the owners of the troubled assets to determine the potential payout and the premium.

The guarantee should avoid the management of the troubled assets, except in receiving the premium and paying the payout.

The key issue in determining the premium is in finding the correct method for determining the value of the real estate or the financial instrument.

In a financial crisis, the guarantee program will produce new winners and losers.

Before the guarantee program:

Winners: Buyers of CDS, Seller of MBS

Losers: Sellers of CDS (e.g. AIG), Buyers of MBS

After the guarantee program:

Stabilized: Buyers of MBS (Paying premium), MBS market

Winners: Sellers of CDS

Losers: Buyers of CDS

1.1 Should the program offer insurance against losses for both individual whole loans and individual mortgage backed securities (MBS)?

The program should offer insurance against losses just for the individual mortgage backed security (MBS), if the guarantee program for MBS is easier than that for loans to manage. If the individual whole loan is not packaged into MBS, the program can offer insurance to the loan, but, if the volume is small, the mortgage insurance might be best left to other mortgage insurance companies, such as Fannie/Freddie.

1.2 What is the appropriate structure for such a program? How should the program accommodate various classes of troubled assets? Should the program differ by the degree to which an asset is troubled?

The program should be structured as an insurance company with a valuation division to determine the premium.

The program should accommodate various classes of troubled assets by separate them according to their types, risks, and valuation methods applicable to the various classes of real estate or instruments..

The program should also be separated by the degree to which an asset is troubled, at least, into the marginal from severely troubled.

1.2.1 What are the key issues to consider with respect to guaranteeing whole first mortgages?

The guarantee should consider the valuation of the real estate. The program should include in the premium the difference between the current principal of the first loan and the value of the troubled real estate. Also, the premium for guaranteeing the first mortgage should be lower than those for junior liens because of the lower risk.

Considering the purchase of a real estate as an investment, the owner of the real estate is the general partner in the investment. The first loan holder owns the safest part of the real estate or to be paid first when the investment is liquidated. The risk of the first loan increases with additional loans. The program should take into consideration of the complete characteristic of the investment in the determination of the premium and in the classification of the asset.

1.2.2 What are the key issues to consider with respect to guaranteeing HELOCs and other junior liens?

HELOC and junior liens have higher risks than the risk of the first mortgage and should, therefore, pay higher premium. The program should include in the premium the difference between the current principals of the first loan and all loans up to the junior lien and the value of the troubled real estate.

1.2.3 What are the key issues to consider with respect to guaranteeing MBS?

As for mortgage and junior liens, the guarantee program should consider the valuation of the real estate. The key issues is still the current valuation of the real estate. The premium should depend mainly on the updated valuation of the real estate.

1.2.4 What are the key issues associated with guaranteeing financial instruments other than mortgage related assets originated or issued before March 14, 2008 that could be important for promoting financial market stability?

Again, the key issues are related mainly to the valuation method of these financial instruments. No instrument should be guaranteed, if no valuation method for the instrument exists. The improved valuation process for these instruments should promote future financial market stability. The Treasury guarantee program can be a catalyst for the private industry to follow in applying the right procedure of insuring financial instruments.

1.3 What are the key issues to consider with respect to setting the payout of the guarantee?

The key issues of payout are the amount and the schedule of the payout.

1.3.1 Should the payout be equal to principal and interest at the time the asset was originated or to some other value? What should that value be? What would be the impact of offering guarantees of less than 100 percent of original principal and interest?

The payout should be equal to the principal, interest, and any balloon payment. The key point of the guarantee program is to shield the asset from default with the main purpose of stabilizing the market. There can be an insurance deductible, but the guarantee should be for 100% of the unpaid principal, interest, and balloon payments to avoid added management chores.

1.3.2 Should payout vary by asset class? If so, please describe using the same asset classes as enumerated under 1.21-1.24.

Yes, the payout should vary by asset class. The payout should be tailored to the characteristics of the asset, such as risk, volume, degree troubled, etc. The government, representing the taxpayer, should engage the best insurance experts to carry out the guarantee program. The missing element in all the current insurance systems is correct VALUATION, which should play the most fundamental role in the guarantee program.

1.4 What event should trigger the payout under the guarantee? Should the holder be able to present the claim at will or should there be a set date? Should this date differ by asset class? Should this date differ by the degree to which the asset is troubled?

Payout should be triggered by default in payment, automatically. The key issue is to shield the holder of the security from the claims from ALL the holder of credit default swap on the security, whose volume might exceed that of the asset by many times.

The guarantee should not be complicated by any set dates, asset classes, nor the degree troubled in order to minimize management and to avoid unnecessary disputes.

Any unpaid payment should automatically be paid by the guarantee program. In real estate terms, the loan becomes a wrap-around loan, where the guarantee program is equally responsible for the payment as the loan holder. Another way to look at the relationship between the loan holder and the guarantee program is the guarantee program becomes a co-signer for the loan and guarantees the payments.

1.5 Should the holder be permitted to sell the troubled asset with the program guarantee? If appropriate, should asset sales be restricted to eligible financial institutions or should there be no restrictions to promote liquidity in the market place?

One of the main purpose of the guarantee program is to stabilize the troubled assets by shielding them from default. The program should stabilize the assets so that they can be sold with the guarantee and the premium payment agreement, with minimum restrictions, unless specific purposes are identified.

1.6 What are the key issues the Treasury should consider in determining the possible losses to which the government would be exposed in offering the guarantee? What methodology should be used to determine possible losses? Does it differ by asset class? If so, please describe using the same asset classes as enumerated under 1.21-1.24. Does it differ by the degree to which the asset is troubled?

The Treasury should allow the program to guarantee assets backed by mortgage on collateral which must be valued correctly to minimize the risk to the taxpayer. The valuation methods will differ by asset class, subordination of the liens, and degree troubled, which are all reflected in their expected rates of return on investment. The program should do an initial survey on the expected rates of return for all types of investments.

1.7 What are the key elements the Treasury should consider in setting premiums for this program? Is it feasible or appropriate to set premiums reflecting the prices of similar assets purchased under Section 101 of the EESA?

The key elements are related to the correct valuation of the collateral, such as real estates and financial instruments.

Very roughly, the partial premium for one troubled part of the asset might be

Premium = (Sum of default principal and interest payments + Mortgage - Value of collateral of asset)/Number of premium payments + Premium for untroubled asset

where for the trouble assets in the last term is generally small compared to the first term on the right side of the equation.

The valuation method is discussed in detail in my previous comment “How To Determine Value, and Premium” (10-28-2008).

1.7.1 If use of prices of similar assets purchased under Section 101 of the EESA are not feasible or appropriate, should premiums be set by use of market mechanisms similar to (but separate from) those contemplated for the troubled assets purchase program? How would this be implemented? If not feasible or appropriate, what methodologies should be used to set premiums?

This is the most important question for the guarantee program. My answer is the same as above in 1.7 and my previous comment on “How To Determine Value, and Premium.” The following is an additional comment on what changes are needed.

Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA) has legislated the market price into law and endorses the market comparison method, which, in my opinion and evidenced by the Savings and Loan Crisis and the current financial crisis, is the main cause of financial crises. Real estate prices are inflexible when the prices are determined by comparing to past prices, not based on future cash flow. The problem with the market price is that it may not respond correctly to economic changes. The market comparison method usually gives the market price before the price has fully responded to the economic changes. For example, a home owner can still get a loan of \$800,000 on a property appraised by the market comparison method to be \$1,000,000, while the real market has crashed by 50% to \$500,000,

as calculated by the solution of value based on future cash flows. Neither \$1,000,000 nor \$500,000 could be the market price, which most likely will overshoot below \$500,000. Both the S&L Crisis and the current Subprime Woe are caused by over-valuation, which is undetectable by the market comparison method, but detectable by the valuation system based on the expected future income.

A letter from L. William Seidman, Chairman of RTC and FDIC, dated September 19, 1990 to me officially summarizes the positions of market comparison method and valuation method based on future income:

" ...

When Congress drafted the FIRREA legislation, it was very specific regarding the valuation of assets. The sales price is to be based on the market value.

...

We have reviewed your suggestions, and while your system is very thorough, it is not feasible for us to implement at this time. Your system may, however, be valuable to institutions in the private section who may be able to use it in determining the value of property prior to lending,

..."

The letter of Seidman can be a good starting point for the discussion on financial crises of the past, the present, and the future. Our valuation system has since been approved as a US patent "***Quantitative Supply And Demand Model Based On Infinite Spreadsheet***" (Pat. No. 6,078,091), which includes a description of the Savings and Loan Crisis and the proposed legislature R41c, which some of the top real estate appraisers in the nation helped to draft. And the market comparison price, on the other hand, has caused another severe financial crisis.

If the valuation problem is not solved, the world economy will continue to face ever-more-dangerous financial crises, for bad debts are logically due to incorrect valuation. The market price will be correct when all the market participants, including the government, use the correct method of valuation.

1.7.2 Do these considerations of feasibility or appropriateness vary by asset class? If so, please describe using the same asset classes as enumerated under 1.21-1.24. Should the premiums vary by the degree to which the asset is troubled?

Yes, except there is no need for the availability of market price to influence feasibility or appropriateness. Both the first mortgage and junior liens uses the same valuation, but with different expected rates of return. The premium is generally affected by the risk, which depends on the degree to which the asset is troubled.

1.8 How and in what form should payment of premiums be scheduled?

Payments of premium can have a schedule, much as the private insurance premium payment schedule and process. But, the government guarantee program should set up any payment schedule, balancing the affordability of the payee and on the risk to the taxpayer.

2. How should a guarantee program be designed to minimize adverse selection, given that the program must be voluntary? Is there a way to limit adverse selection that avoids individually analyzing assets?

The guarantee program should concentrate on areas where the stability of the US economy will be affected. The adverse selection can be minimized with a guarantee program which allows the holders of the troubled assets enough flexibility to satisfy their

needs and to individually analyze assets in terms of the valuation of the real estates.

3. What legal, accounting, or regulatory issues would such a guarantee program raise?

The program is a government interference in the “gambling” of CDS holders. But, the court should be on the side of the government for the interest of the nation as a whole and in times of financial emergency. The motto here is that “Never bet against the government.”

Also, as elaborated under 1. and 1.71, my suggested valuation method is in direct contradiction to the current legislation Financial Institutions Reform, Recovery and Enforcement Act of 1989 (FIRREA). But, nature holds a even higher authority over the government; even the government has to observe the non-violable law of nature in the form of the correct solution of value.

4. What administrative and/or operational challenges would such a guarantee program create?

The administrative and/or operational challenge is in the establishment of a valuation center which can correctly determine the premium through the correct and speedy valuation method for the real estate. The actual administration and/or operation should be carried out by contracted insurance companies and the holders of the troubled assets. The management in the guarantee program should be kept to a minimum.

The guarantee program might usher in a new Valuation Industry, which should provide the foundation for a rational society.

4.1. What expertise would Treasury need to operate such a guarantee program? Please describe for all facets of the program.

The guarantee program should have all facets of the current existing insurance program, such as FHA, AIG, Fannie Mai and Freddie Mac, plus new expertise in valuation. In fact, I would strongly recommend the use of the expertise of FHA, AIG and Fannie/Freddie in combination with the newly introduced valuation system.

5. What are the key issues to be considered in determining the eligibility of a given type of financial institution to participate in this program? Should these eligibility provisions differ from those of the troubled asset purchase program?

The key issues on eligibility of an institution are (1) the effect the institution having on the stability of the economy and (2) the willingness of an institution in accepting the process of valuation to be done mainly by the institution under the guidance of the Treasury guarantee program.

6. What are the key issues to be considered in determining the eligibility of a given asset to be guaranteed by this program? Should eligibility provisions of assets to be guaranteed under this program differ from those of the troubled asset purchase program?

The key issues on eligibility of an asset are the availability of the valuation system. If the valuation system determines that the premium is prohibitively high, the asset could be purchased rather than insured. The eligibility provisions should be similar in both the guarantee and the purchase programs.

7. Assuming the guarantee is priced to cover expected claims, are there situations (perhaps created by regulatory or accounting considerations) in which financial institutions would prefer this program to the troubled asset purchase program? Please describe.

I am not sure without sufficient understanding of the situations.

Generally, there is little need to have the trouble asset purchase program, unless the Treasury is willing to spend the effort in managing the assets. The Treasury should avoid most management, except in paying and receiving money.

The situation in which the purchase program might be preferred is when the holders of CDS, or the court, refuse to accept the shielding of assets from default by just guaranteeing the payments of principal, interest, and the balloon payment without the ownership.

7.1 Does this preference differ by type and condition of the asset? For what troubled assets might financial institutions choose to participate in the guarantee program rather than sell under the troubled asset purchase program? Is accommodating this choice likely to best promote the goals of the EESA? Does it adequately protect the taxpayer? If not, what design feature should be included to assure these goals are met?

I am not sure without a full consideration of the situations.

I would like to comment on the last two questions with a general observation on the financial crisis below to compensate for my lack of understanding of the full situation.

With the unbridled explosion in financial derivatives, the world financial system is turning into a giant gambling casino. Some of the casinos are already too big to fail. If allowed to fail, they could cause a chain reaction, which, leveraged by the derivatives, would trigger the release of the explosive financial turbulence to match the size of the gross national product. It is for these too-big-to-fail casinos that the guarantee program should be set up to protect.

The guarantee program could be a very ingenious proposal from the Treasury. As I see it, the only thing that the program lacks is a correct solution of value.

Credit Default Swaps (CDS), whose volume is starting to match that of national gross product, gamble on the default of financial assets. The guarantee program, if correctly set up, could shield an asset, even troubled, from default by guaranteeing the continuing payment of the principal, interest, and any balloon payment, after the holder of the asset agrees to pay an affordable premium.

The Treasury, in essence, is trying to upset the odds of the gamble with its guarantee program. The law of gambling states that the chance of winning by party a with an \$A amount of money versus party b with a \$B amount of money is $\text{Probability of Winning} = \frac{\$A}{\$A+\$B}$. If Treasury is party a, \$A can be unlimited, and the chance for party a to win is almost 100%.

The winning by the Treasury has the benefit of stabilizing the economy. From an investment point of view, the guarantee program is very efficient in that, instead of risking losing tens of trillions of dollars when the holders of CDS win, the loss to both the holder of the asset and the guarantee program can be reduced to one tenth of the amount by shielding the assets from default.

Correspondingly, the economy, which the Treasury tries to improve, will decide the default rate on mortgage (not the guaranteed assets which has already been shielded from default). The improvement of the economy will reduce the risks to the taxpayer.

Since the insurance company offers the last guarantee in the chain of value dependence, the guarantee program could be the central

issue in the financial rescue plan. Success of the program might be able to break the chain which forms the financial vicious cycle.

To improve its chance of success, the program should definitely encourage the Federal Reserve to lower the fed rate because for every percentage decrease in interest rate, the value of mortgaged real estate can increase by about 9%. The program should also encourage the restructuring of mortgage and even MBS to reduce foreclosures and defaults.

As a final suggestion of my own on the financial rescue plan, I would like to see the Federal Reserve lower the fed rate to as low and as rapidly as possible, with additional effort to stop foreclosure through refinance and mortgage restructuring, to shock the downward spiral of the real estate industry to a halt and even to revitalize the construction industry to sustain our economy for the next few years, as Former Federal Reserve Chairman Alan Greenspan had done in the early 2000s after the Federal Reserve disrupted the explosive growth of the Internet industry. Then, within the next few years, the government should reinvigorate the already proven Internet Industry with heavy investments into Internet related research and small businesses and into valuation and other innovations selected based on valuation, almost as a repayment for its past mistake in its interfering with the stock market. In my opinion, the Japanese economic stagnation and now the US economic inactivity for the past decade, except in the low-tech housing market, is due to the lack of major innovations, upon which capitalism depends for its survival.

I wish good luck to the guarantee program and truly appreciate the time of the program planners in considering my comments and the proposed solution of value. ###

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