Incorporating Swaps into TARP II

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The Troubled Assets Relief Program (TARP) began in October of 2008. One goal of the program is to allow the U.S. Treasury to purchase assets such as sub-prime mortgages and collateralized debt obligations from banks. As the idea has evolved (TARP II), Treasury currently envisions forming Public-Private Investment Program (PPIP) wherein private investors buy the toxic assets using loans provided by Treasury, FDIC, or other government operations [U.S. Department of the Treasury, 2009].

The market values of these "toxic assets" have fallen precipitously. While the mark-to-market accounting rules that played havoc with banks' reported balance sheets have been relaxed [Financial Accounting Standards Board, 2009], thus allowing U.S. banks to carry toxic assets on their books at "model-derived" values rather than at "temporarily distressed market values," simply changing the values of these toxic assets as carried on the books of the banks does not change economic reality. If market participants believe that the model-derived values are "accounting gimmicks" rather than honest evaluations, banks will continue to find it difficult to return to normal operations.

Rather than carry these toxic assets on their books, whether at market values or at model-derived values, many banks would no doubt prefer to sell the loans. The difficulty with arranging such sales is establishing the correct price. If the Treasury or private investors buy the assets at their current market values, the recognized losses on the sales would mean that the capital ratios of the banks remain impaired. Given sufficiently impaired ratios, the banks would remain unwilling or unable to make loans or to participate in settlement procedures. If the Treasury, or the private investors sponsored by the Treasury, buy the assets at something close to their historical costs or original book values, the banks' balance sheets improve but the U.S. taxpayers will almost surely suffer tremendous losses. The attempt to find "model-derived" values for these assets improves the situation, but does not remove the cloud of uncertainty as to the correctness of these model values. This paper presents several proposals for resolving this dilemma. Our proposals rely on swaps to increase the incentives for participants in the TARP program to establish the best first-offer price for the troubled assets. Other contingent claims

contracts could be used instead of swaps, but we believe that swaps are the preferred approach to providing incentive to each side to generate appropriate offer prices for the sale of the toxic assets. The role swaps can play in resolving asymmetric information and related problems has been examined by Brau, Laatsch, and Li [2008]. Other research into the role derivatives can play in reducing the costs of information asymmetry can be found in Titman [1992], DaDalt, Gay, and Nam [2002] and Simkins and Rogers [2006].

Consider incorporating a swap into the TARP pricing problem faced by the PPIP. The structure of the PPIP is that hedge funds and other private investors participating in the program, under the sponsorship of Treasury, negotiate, perhaps via reverse auctions, prices for "toxic loans" to be purchased from the banks. To provide strong incentives for all parties involved with theses sales to make reasonable first-and-best offers, we propose that the banks disclose to their counterparties the cash flows the banks incorporate into their model-derived values of the loans. The banks do not need to disclose their models, per se, just their expected cash flows. Hedge funds, wealthy individuals, or other participants in the PPIP use these cash flows as the basis for their offer prices for purchasing the loans. The hedge funds borrow all or a substantial portion of the money to make these purchases from the bank selling the assets. The banks, in turn, borrow the money from the Treasury; therefore, it is the Treasury that is the ultimate source of the loans backing the purchases. The reason for this indirect lending, rather than loans directly from Treasury to the hedge funds, becomes clear as we present the terms of the swap contracts that attach to these loans.

As part of the purchases, the parties agree to enter into conditional contracts (swaps), such that if the actual cash flows received for the loans do not meet the cash flows used in the banks' models, as disclosed to the hedge fund investors, the principal amounts of the loans the hedge funds have outstanding with the banks are reduced by the amount of the deficiencies in the received cash flows. Should the cash flows deviate downward to the extent that the hedge fund loans are paid to zero, the Treasury then steps in to guarantee that the hedge funds will receive the appropriate amount of the model cash flows, assuming actual realizations continue to fall short. The amount the banks owe the

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Treasury will not be reduced by such cash flow shortfalls. Thus the banks will suffer losses (reductions in the principal outstanding on the hedge fund loans) if they use too high estimates of cash flows compared to eventual cash flows received. In the limit, the banks could see the value of the loans they have made to the hedge funds drop to zero if realized cash flows fall significantly below the promised cash flows based on the banks' models. This means that the banks continue to have "skin in the game." The banks have strong incentives to use realistic cash flow projections in their disclosures to the hedge funds.

If actual cash flows exceed the model cash flows, under the terms of the swaps the excesses will flow from the hedge funds to the banks. Thus, banks' fears of selling the assets at too low prices due to underestimation of actual realized cash flows are eliminated. The Treasury, again, plays the role of intermediary and stands ready to guarantee the payment of any such higher than expected realizations to the banks should the hedge funds fail or otherwise be unable to make such payments. One important result of these contingent contracts is that the hedge funds can treat the receipt of the promised cash flows as being essentially without risk. The hedge funds will receive the promised cash flows, and not more or less than the promised cash flows, either in the form of actual receipts from the toxic assets or forgiveness of loans outstanding with the banks. Or, in the last resort, by having the U.S. Treasury guarantee that the promised cash flows will be made.

Suppose that a bank holds a pool of sub-prime mortgages. The market value of the loans, in the face of the current severe credit crisis, is only thirty million dollars. However, the bank realistically expects to receive the following cash flows: end of next year - ten million dollars (coupons, scheduled principal, and prepayments), end of the second year - seven million dollars (coupons, scheduled principal, and prepayments), and end of year three - sixty-three million dollars (coupons, scheduled principal, and assuming all remaining mortgages in the pool prepay at the end of year three). We understand that

this cash flow pattern is grossly too simplistic, but these stylized cash flows allow us to tell our story without getting lost in the details of monthly payments, in arrears versus accrual swaps, etc. The bank reveals the above given cash flows to potential PPIP counterparties.

Suppose a hedge fund bids fifty million dollars for the pool of mortgages (about a twenty percent internal rate of return to the hedge fund). The bank agrees to the price. The bank borrows all or some of the fifty million dollar price from the Treasury and lends that same amount to the hedge fund. Suppose actual cash flow on the pool of mortgages in year one turns out to be eleven-million dollars. The hedge fund would receive its promised cash flow, ten million, and the excess (one million) would flow to the bank (along with interest on the loan made to the hedge fund). Suppose in year two, actual cash flow on the pool of mortgages is four million dollars, perhaps due to significant defaults on the assets in the pool. The hedge fund receives the four million and the loan balance owed to the bank is reduced by the shortfall of three million. Of course, the hedge fund continues to pay interest on the loan to the bank, but the interest amount will fall as the outstanding balance on the loan is reduced due to the shortfall in realized cash flows. The loan balance at the end of year two would be approximately forty-seven million dollars. If in year three, actual cash flows are fifty-five million dollars, the hedge fund receives the fifty-five million and the loan from the bank is reduced to thirty-nine million (forty-seven minus the eight million dollar shortfall in year three).

Under our proposal, the banks have strong incentives to use realistic cash flows in these transactions, or else they suffer future losses as realized cash flows fail to meet the promised cash flows. The hedge funds can negotiate the prices they are willing to pay to acquire the toxic assets from the banks with assurance that the promised cash flows underlying the assets will be paid to them. The Treasury's most important role is to act as a trusted agent to both sides. Treasury will also be the ultimate source of all or some of the funds used in the purchases based on the loans Treasury will make to the banks.

Note that our proposal does not establish prices to be paid for the toxic assets, nor the interest rates on the various loans used in the scheme. Actual transaction prices and interest rates on the loans will result from negotiations among the various parties. Also subject to negotiation are the proportions of ownership (and per force the associated cash flows) in the toxic assets taken by the hedge funds, Treasury, or even retained by the banks. Nonetheless, by forging a Treasury imprimatur on the cash flows to be received by the hedge funds, our proposal does break the log jam of suspicion and distrust that currently keeps TARP II from succeeding. The hedge funds are bidding on nearly risk-free promised cash flows. The banks have strong incentives to provide realistic cash flow estimates. Banks move the toxic assets off their books. And while the banks do see an increase in their liabilities because of the loans they take from the Treasury, perhaps some mechanism may be found to reduce the impact of those new Treasury proffered bank debts on their capital ratios. But that is another paper.

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