

Methodology to Calculate Estimated TARP Costs

The Emergency Economic Stabilization Act of 2008 (EESA) authorized Treasury to purchase or guarantee troubled asset, as defined.¹ Treasury implemented the Troubled Asset Relief Program (TARP) under this authority to provide capital to and restore confidence in the strength of U.S. financial institutions, restart markets critical to financing American households and businesses, and address housing market problems and the foreclosure crisis.

Under TARP, Treasury has made equity investments, loans and asset guarantees in a range of financial institutions. In exchange for these investments, loans, and asset guarantees, Treasury, on behalf of the taxpayer, has received financial instruments, including, equity, debt and warrants – from these companies. Treasury has developed and presented the TARP cost estimates in a way that is consistent with the statutory reporting requirements.

The statutory reporting requirements for TARP in this area are in some respects unique. Under EESA, Treasury has the authority to determine the budgetary cost of TARP under the Federal Credit Reform Act of 1990 (FCRA). EESA also requires that the budgetary cost of TARP programs calculated under FCRA be adjusted for market risk.

FCRA established a methodology for budgeting for loans or loan guarantees issued by the federal government. Under the FCRA, the budgets for loans and loan guarantee programs reflect the expected lifetime cost of these financial arrangements on a present value basis, rather than just the cash flows as they occur as is typically the case for federal budgeting. For example, when a federal agency enters into a loan guarantee, no actual cash outflow from the government typically occurs at the point of obligation; however, the cash outflows for default claims and the expected cost over the life of the guarantee may be substantial. In contrast, when a federal agency provides a loan, there is a substantial cash outflow at loan origination, but the ultimate cost of that loan to the government will depend on future repayments. Under FCRA, the present value of all the cashflows to and from the Government is recorded up front for all loans and loan guarantees.

Rather than using a cash basis for credit programs, which can be misleading, the FCRA calls for agencies to record the “subsidy” cost of a loan or loan guarantee at the time of the disbursement of the loan. The subsidy cost is the net present value of all cash flows associated with the credit transaction, usually calculated by discounting all payments back to the current period at the appropriate Treasury rate. Subsidy estimates reflect both the terms of the underlying instrument and the likelihood of repayment. For example, if a loan carries a rate below the comparable Treasury rate, that loan will generate a subsidy cost even if the loan is expected to be fully repaid. The subsidy calculation also reflects the risk that the borrower may not repay the entire amount of the loan. The potential for less than full repayment is reflected in the expected cash flows, which should reflect historical defaults on similar instruments and assumptions about possible future economic performance.

¹ TARP authority is defined as the purchase price paid for assets held by the Secretary of Treasury and amounts guaranteed outstanding at any one time. The Helping Family Save Their Homes Act of 2009 (P.L. 111-22) reduced EESA’s \$700 billion original TARP total purchase authority by \$1.3 billion.

The subsidy cost (budget impact) reflects the estimated program cost or savings over the life of the program. This amount would include estimates of future cash flows as well as cash flows received (such as dividends) and financing cost incurred.

The discussion below describes the methodologies used to estimate the value of the diverse set of TARP investments made under EESA. Wherever possible, Treasury has sought to use market prices of tradable securities to make direct estimates of the market value of TARP investments. Use of market prices was possible for TARP investments that are standard financial instruments that trade in public markets or are closely related to tradable securities. For those TARP investments that do not have direct analogs in private markets, Treasury uses internal market-based models to estimate the market value of these investments as detailed below. All cashflows are discounted at market adjusted discount rates. The administrative costs of managing Treasury investment programs are not included in the models or the tables below, as administrative costs are treated on a cash basis and funded separately and therefore are excluded from the subsidy cost calculation.

Capital Purchase Program (CPP)

Treasury created the Capital Purchase Program (CPP) in October 2008 to stabilize the financial system by providing capital to viable financial institutions of all sizes throughout the nation. The program is now closed. Under the CPP, the Treasury made direct capital investments (purchasing preferred stock) into financial institutions to bolster the capital position of healthy institutions and, in doing so, to build confidence in the institutions and the financial system as a whole. The estimated value of the preferred stock reflects the risk of losses associated with adverse events, like failure of the institution or increases in market interest rates. The equity model estimates how cash flows vary depending on: 1) current interest rates, which affect the institution's decision whether to repay the preferred stock; and 2) the strength of a financial institution's assets. The model incorporates market risk through a benchmarking process performed on a number of institutions with traded securities similar to the CPP preferred stock. The model also estimates the values of warrants using an option-pricing approach based on the current stock price and its volatility. The warrant values are included in the estimated value for CPP. Treasury also holds common stock in certain CPP participants. The common stock is valued at its current market price.

Targeted Investment Program (TIP)

Treasury established the Targeted Investment Program (TIP) under the TARP in December 2008. The TIP gave the Treasury the necessary flexibility to provide additional or new funding to financial institutions that were critical to the functioning of the financial system. Through the TIP, Treasury sought to prevent a loss of confidence in critical financial institutions, which could result in significant financial market disruptions, threaten the financial strength of similarly situated financial institutions, impair broader financial markets, and undermine the overall economy. The program is now closed.

Treasury provided funds to both Citigroup and Bank of America under the TIP through the purchase of additional preferred shares. These investments were valued in the same manner that Treasury uses to value CPP investments in public institutions. All investments made under this

program were repaid in full in December 2009. The positive value of the TIP relates to the warrants issued under the program. Treasury has sold the Bank of America warrants and still holds the Citigroup warrants.

Asset Guarantee Program (AGP)

Under the AGP, Treasury received preferred shares and warrants in exchange for providing a guarantee on a pool of Citigroup's assets (The Federal Reserve Bank of New York and the FDIC also participated in the guarantee). In December 2009, all parties agreed to terminate the guarantee agreement relieving Treasury of its obligation to cover any losses on the pool of assets. Under the terms of the termination agreement the Treasury cancelled approximately \$1.8 billion of the previously issued preferred stock. In addition, the FDIC agreed to release to the Treasury \$800 million of their preferred stock holding contingent on Citigroup repaying previously issued FDIC guaranteed debt. The program is now closed.

The budget impact of the AGP is the discounted expected cash inflows from the preferred shares and warrants still held by Treasury, in addition to the present value of expected cash flows from the contingent transfer in 2012 of \$800 million of preferred shares by the FDIC. The cash flows associated with the AGP preferred shares and warrants are determined in the same manner that Treasury uses for CPP investments.

Consumer and Business Lending Initiatives (CBLI):

Treasury has implemented the following initiatives to help restore consumer and business lending:

Term Asset-Backed Securities Loan Facility (TALF)

Under the TALF program, Treasury will provide funding of up to \$20 billion as necessary for the purchase of TALF collateral through a direct loan to a Special Purpose Vehicle (SPV). The SPV collects monthly interest spreads on all outstanding TALF loans, as well as any income or sale proceeds from purchased collateral. Treasury has advanced funds to capitalize the SPV. To date, no TALF collateral has been surrendered to the SPV and no other loans have been made. When the program is wound down, Treasury will be repaid principal and interest on any loans made, if funds are available, and will collect 90 percent of any proceeds remaining in the SPV. The value of the Treasury's loan to the TALF SPV is the estimated net present value of the expected principal, interest, and additional proceeds.

To derive the cash flows to the SPV, and ultimately, Treasury, the TALF model simulates the performance of underlying collateral. Loss probabilities on the underlying collateral are calculated based on analysis of historical loan loss and charge off experience by credit sector and subsector. Historical mean loss rates and volatilities are significantly stressed to reflect recent and projected performance. Simulated losses are run through cash flow models to project impairment to the TALF eligible securities. Impaired securities are projected to be purchased by the SPV, requiring additional Treasury funding. Simulation outcomes consisting of a range of

loss scenarios are probability-weighted to generate the expected net present value of future cash flows.

Unlocking Credit for Small Businesses Program

To help restore the confidence needed for financial institutions to increase lending to small businesses, Treasury is making TARP funds available to purchase securities backed by the Small Business Administration (SBA)-guaranteed portions of loans made under the SBA's 7(a) loan program. The SBA's 7(a) program is SBA's most basic and widely used loan program. Given there is a market for these securities, the Treasury will use observable market prices to determine the value for securities purchased. As of March 31, 2010, \$21 million in securities had been purchased under the program.

Public-Private Investment Program (PPIP)

The Public-Private Investment Program ("PPIP") is part of the broad effort to repair balance sheets throughout the U.S. financial system and ensure that credit is available to households and businesses.

Under the PPIP, Treasury provides equity and debt financing to public-private investment funds (PPIFs) established by private fund managers with private investors for the purpose of purchasing legacy securities. These securities are commercial mortgage-backed securities and non-agency residential mortgage-backed securities. Treasury modeled the cash flows of these PPIFs based on assumptions of asset mix and quality. The cash flows accumulated in the PPIFs are then allocated to the Treasury debt investment, equity investment and private investors' interest as described in the legal agreements. The cost of the program is then determined as the present value of the cash flows associated with the Treasury debt and equity investment.

AIG Investment (AIG)

Treasury provided assistance to AIG in order to prevent AIG's disorderly failure and mitigate systemic risk. The assistance was in the form of a purchase of preferred shares. .

The method used to value AIG preferred shares is broadly analogous to the approach used to value CPP investments. However, greater uncertainty exists for the valuation of preferred shares for AIG. First, the size of Treasury's holding of preferred shares relative to AIG's total balance sheet makes the valuation extremely sensitive to assumptions about the recovery ratio for preferred shares. Second, no comparable traded preferred shares exist. Therefore, Treasury bases the AIG valuation on the observed market values of publicly traded assets on either side of the liquidation preference of the preferred stock; common stock (paid after preferred stock), and the most junior subordinated debt (paid before preferred stock). Further, based on certain publicly available third party sources, assumptions about payouts in different outcomes and the probability of some outcomes were made. Finally, external asset managers provided estimated fair value amounts, premised on public information, which also assisted Treasury in its valuation.

These different factors were all used in determining the best estimate of the fair value of AIG assets.

Auto Industry Financing Program (AIFP)

Treasury established the Automotive Industry Financing Program (AIFP) in order to prevent a significant disruption of the American automotive industry, which would have posed a systemic risk to financial market stability and had a negative effect on the economy of the United States. Through the AIFP, the Treasury has obligated \$85 billion in loans or equity investments to General Motors, GMAC, Chrysler, and Chrysler Financial in order to avoid a disorderly bankruptcy of one or more auto companies. Treasury's loans to the automobile industry forged a path for these companies to achieve viability.

The valuation of equity-type investments was performed in a manner that is broadly analogous to the methodology used for CPP investments, with reliance on publicly traded securities to benchmark the assumptions of the valuation exercise. Debt is valued using rating agency default probabilities.

As part of the General Motors (GM) bankruptcy proceedings, Treasury received a 60.8 percent stake in the common equity of General Motors Company (New GM). Because the unsecured bond holders in General Motors Corporation (Old GM) received 10 percent of the common equity ownership and warrants in New GM, the expected recovery rate implied by the current trading prices of the Old GM bonds provides the implied value of the New GM equity. Treasury used this implied equity value to account for its equity stake in New GM.

For the GMAC equity instruments, Treasury used the model to estimate the value of GMAC subordinated debt that trades actively in public markets. The stochastic assumptions that drive the evolution of the institution's balance sheet in the model were then adjusted so the model's valuation of this security matched the observed market price.

Treasury values direct loans using an analytical model that estimates the net present value of the expected principal, interest, and other scheduled payments taking into account potential defaults. In the event of a financial institution's default, these models include estimates of recoveries, incorporating the effects of any collateral provided by the contract. The probability of default and losses given default are estimated by using historical data when available, or publicly available proxy data, including credit rating agencies historical performance data.

Home Affordable Modification Program (HAMP)

The Administration's goal is to promote stability for both the housing market and homeowners. To meet these objectives, the Administration developed a comprehensive approach using state and local housing agency initiatives, tax credits for homebuyers, neighborhood stabilization and community development programs, mortgage modifications and refinancing, and support for Fannie Mae and Freddie Mac.

To mitigate foreclosures and help maximize homeownership preservation, Treasury announced a comprehensive \$75 billion program, the Home Affordable Modification Program (HAMP), in February 2009. HAMP, which provides eligible homeowners the opportunity to significantly reduce their monthly mortgage payment, is designed to help millions of homeowners remain in their homes and prevent avoidable foreclosures. Treasury is providing up to \$50 billion in funding through the TARP, while Fannie Mae and Freddie Mac are providing up to \$25 billion of additional funding. Unlike other programs funded by the TARP, HAMP is not structured like an investment program because there are no direct financial repayments by the recipients to the government. As such, HAMP operates at a 100% subsidy rate. HAMP focuses on creating sustainably affordable mortgage payments for responsible home owners who are making a good faith effort to make their mortgage payments, while mitigating the spillover effects of preventable foreclosures on neighborhoods, communities, the financial system and the economy.