

Valuing the Treasury's Capital Assistance Program
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The Capital Assistance Program (CAP) was created by the U.S. Treasury in February 2009 to provide backup capital to large financial institutions unable to raise sufficient capital from private investors. Under the terms of the CAP, a participating bank issues preferred shares to the Treasury combined with embedded options for both parties: The bank gets the option to redeem the shares or convert them to common equity, with conversion mandatory after seven years; the Treasury earns dividends on the preferred shares and gets warrants on the bank's common shares. We develop a contingent claims framework to estimate market prices of these CAP securities. The interaction between the competing options held by the buyer and issuer of these securities creates a game between the two parties, and our approach captures this strategic element of the joint valuation problem and clarifies the incentives it creates. We apply our method to the eighteen publicly held bank holding companies that participated in the Supervisory Capital Assessment Program (the stress test) launched together with the CAP. On average, we estimate that, compared to a market transaction, the CAP securities carry a subsidy of approximately 30% of the capital invested for a bank participating to the maximum extent allowed under the terms of the program. We also find that the size of the potential subsidy varies widely across banks. We compare our estimates, normalized by market capitalization, with abnormal stock price returns for the stress test banks at the time the terms of the CAP were announced; we find correlations between 0.78 and 0.85, depending on the precise choice of period and set of banks included. These results suggest that our valuations align with the market's perception of the value of the program.