



**Emad A. Zikry, President and Chief Executive Officer**

## **Collateralized Synthetic Obligations (CSOs)**

### **I. Collateralized Synthetic Obligations (CSOs)**

In a CSO transaction, an investor buys notes from or sells protection to a special-purpose vehicle ("SPV") that provides exposure/risk to an underlying portfolio of credit default swaps (reference entities). Investors can participate in CSOs on either a funded or unfunded basis. In an unfunded CSO transaction, the investor is selling protection to the SPV on a basket of reference entities in return for a fee (the weighted average spread on the underlying reference entities). This is a derivative transaction versus a funded CSO transaction whereby the investor buys a rated note from the SPV that references the same basket of reference entities as well as AAA-rated note or pool of AAA-rated collateral. In the funded transaction, the investor receives a coupon on the note that consists of a Libor component (the AAA-rated note/collateral) plus the weighted average CDS spread.

CSOs can be actively managed or static, single or multi-tranche (whereby the risk is tranching into AAA, AA, A.....equity exposure), and can reference various types of collateral (investment grade, high yield, loan, asset-backed, etc.). Rating agency models are critical in the structuring, monitoring and management of CSOs and each agency has their own proprietary model.

A priority scheme defines how tranches absorb losses. Each tranche has an attachment point, expressed as a percentage of the notional value, which defines the point at which an investor begins to suffer losses (the attachment point). The attachment point can be thought of as subordination; the losses that the reference pool can suffer before impacting the performance of the tranche. Once losses surpass the tranche attachment point, the investor's notional is drawn down to pay the swap counterparty (the buyer of protection) and future interest payments are paid on the reduced notional amount. The remaining subordination is versus the reduced notional as well. Standard tranches are 1% "thick" (thickness equals the detachment point less the attachment point) although they can be larger. A tranche with a 6% attachment point and a 7% detachment point is 1% thick. It can withstand losses (defaults less recovery) of up to 6% with no loss of principal/notional. As losses exceed 6%, principal/notional is drawn down and at 7% no further interest is paid and no principal is paid at maturity.

CSOs are valued by taking the net present value of the expected premium payments less the expected payouts from defaults (adjusting for the attachment point).

What is critical to the performance of synthetic CSOs is the sensitivity to defaults. Each rating agency model, while they vary, uses the following determinants in rating a particular tranche: default risk of the underlying portfolio, loss given default, correlation/diversity, capital structure and maturity. The rating agency models all require a level of tranche subordination that is well in excess of what historical losses would be on a similar cohort (rating, maturity, diversity, etc.).

A typical 10-year single-A tranche that references investment grade credits would require subordination of 6-7%. At 6% subordination, a tranche can withstand 10% defaults with 40% recovery before losing any principal. Absent defaults, a typical tranche of a 125-name portfolio can withstand 30 portfolio downgrades in a year with no impact to the tranche rating. Over three years, it could withstand 55 single-notch downgrades with no impact on the tranche rating.

## **II. Discussion of Current Market Environment**

The market volatility and credit defaults experienced over the last four months of 2008 were unprecedented in every sense of the word; there is no historical equivalent in which seven investment-grade companies defaulted over a one-month time frame. During the corporate governance-led credit crisis of 2002, Enron and WorldCom each defaulted over a one-year time frame. Using Moody's Corporate Default Study, the five and ten-year average cumulative issuer-weighted default rates for investment-grade bonds are as follows:

<b><u>Period:</u></b>	<b><u>5yr</u></b>	<b><u>10yr</u></b>
1970 – 2007	0.82%	2.04%
1883 – 2007	0.83%	1.71%

To put this in perspective, for an investment-grade CSO with 125 credits (0.8% weight per credit), historical default rates would imply cumulative defaults on 1-3 names over a 5-10 year period. Most CSOs experienced this over the last few months of 2008 and in many cases defaults were well in excess of these levels.

Many CSOs issued over the last few years have meaningful exposure to financials. This was partly due to the perceived safety of this sector versus the heightened LBO risk in the non-financial sectors that was so prevalent during 2006-2007. The 2008 credit crisis is squarely centered on financials and all seven investment-grade defaults during the

fourth-quarter of 2008 have been financials: FNMA, FHLMC, Lehman, Washington Mutual, Glitner Bank, Kaupthing Bank and Landisbank Islands.

We would argue that the U.S. Government's handling of the situation has been fraught with unintended consequences and mistakes. One of the unintended consequences of the Government's handling of FNMA and FHLMC was that conservatorship resulted in a technical default of CDS contracts. While recoveries were high, investors in CSOs with fixed 40% recoveries suffered significant loss of subordination. The ad-hoc nature of bailouts and rescues, saving Bear Stearns and AIG while allowing Lehman Brothers to fail, for example, brought with it significant consequences that markets are still grappling with today. The fact that both Goldman Sachs and Morgan Stanley were later allowed to become bank holding companies and receive capital under TARP makes that decision all the more questionable. Another example of the ad-hoc nature of this process is the FDIC's seizure of Washington Mutual's banking assets and subsequent sale to JP Morgan, whereby all debt (both holding company and bank) defaulted. A week later the government forced a sale of Wachovia to Citigroup (who later lost out to Wells Fargo) in which bondholders were protected.

The worst of the financial crisis seems to have abated. By that we only mean that the financial markets have moved beyond the risk of a systemic meltdown. There is much work to be done as we still have to work through the impact of a significant economic slowdown and what that means for corporate earnings and ultimately defaults. Much will depend on how quickly the new Administration can implement a stimulus package and how the remaining TARP funds are used (along with the various other programs aimed at improving the flow of credit and liquidity).

Vanderbilt Research Team