

## Feature

# Insurance risk CDOs: What? Why? Now?

In this issue's feature, J. Paul Forrester, Chicago-based partner at Mayer Brown, reviews why insurance risk is an attractive 'asset' for a CDO

Insurance risk collateralised debt obligations (CDOs) will allow portfolio investors a greater opportunity to participate in insurance-linked markets and will bring additional liquidity and transparency to such markets. Insurance risk CDOs will also allow insurance and reinsurance companies to better manage their risk exposures and obtain better capital efficiency.

## What?

According to Merrill Lynch<sup>1</sup>, CDOs are arguably the most complex financial instrument ever to go mainstream - for more on these products see box below. However, CDOs are a successful refinement and application of sophisticated securitisation techniques originally developed for collateralised mortgage-backed securities (MBS) to facilitate the resolution of the savings and loan crisis in the United States in the 1980s. According to recent CDO market research<sup>2</sup>, there were over US\$490bn of CDOs in 2006, making CDOs the largest type of term asset-backed security (ABS, excluding MBS) and that over US\$1tr of CDO obligations are now outstanding.

CDOs are widely admired for the rich and complex character of their market and their enviable success. Originally applied to high-yield bonds and bank loans, CDOs since have been applied to portfolios of emerging-market debt, subordinate and mezzanine ABS and MBS, real estate investment trust (REIT) debt, distressed debt, municipal bonds, trust preferred securities (a hybrid debt/equity security), project finance, alternative investments (private equity and hedge fund investments), so-called 'equity default' (really stock price decline) swaps and, most recently, to commodities.

At the time of this article's writing<sup>3</sup>, CDOs are suffering the consequences of the 'meltdown' in US sub-prime credit markets and CDOs that have significant concentrations of sub-prime securities within the related CDO collateral portfolios are currently on negative credit watch facing likely downgrading of some or all of the related CDO securities or have already been so downgraded. Of course, investors in such CDOs face or have already incurred substantial losses as a result. The scale of these actual and pending downgrades has prompted some CDO researchers to characterise the CDO consequences of these sub-prime related events as the 'greatest credit risk management failure ever'<sup>4</sup>.

While there are many lessons that should probably be learned from the recent sub-prime meltdown, one that is germane to CDOs is that, in common with other forms of structured finance, CDOs are highly dependent on accurate risk assessment for the underlying assets. Of course, this will be directly relevant to insurance risk CDOs, which are highly dependent on such assessment for the underlying risks.

Historically, CDOs have dramatically and beneficially affected the pre-existing markets for the underlying CDO assets. For example, CBOs have added substantial liquidity to the US high-yield bond market and materially dampened price volatility therein. Similarly, CLOs have added liquidity and transparency to the US leveraged loan market and bank syndication practices have been changed to accommodate the tax requirements of most CLOs. It has been estimated that CLOs account for over 60% of the syndicated loan market.

## CDO basics

Collateralised debt obligations (CDOs) include collateralised bond obligations (CBOs), collateralised fund obligations (CFOs), collateralised loan obligations (CLOs), and collateralised swap obligations (CSOs). CDO market convention categorises a CDO by primary collateral type. For example, a CLO would usually have loans as the primary collateral, but might include high-yield bonds or other debt or other securities within the CDO's portfolio

### Core concept

The core concept of CDOs is that a pool of defined financial assets will perform in a predictable manner (that is, with default rates, loss severity/recovery amounts and recovery periods that can be forecast reliably) and, with appropriate levels of credit enhancement applied thereto, can be financed in a cost-efficient fashion that reveals and captures the arbitrage between the interest and yield return received on the CDO's assets and the interest and yield expense of the securities (CDO securities) issued to finance them. Each of the recognised rating agencies (Fitch, Moody's and Standard & Poor's) has developed CDO criteria and statistical methodologies and analyses to 'stress' pools of CDO assets to determine the level of applicable credit enhancement required for their respective credit ratings for the CDO securities to finance such pools.

Considerable on-going research and actual experience continues to further refine and develop these methodologies. Typically, CDOs require the CDO assets to meet certain eligibility criteria (including diversity, weighted average rating, weighted average maturity and weighted average spread/coupon) in accordance with established rating-agency methodologies to ensure the highest practicable rating for the related CDO securities.

A CDO will allocate the interest and principal proceeds of such assets on periodic distribution dates according to certain collateral quality tests (typically an overcollateralisation ratio and an interest-coverage ratio). CDO securities usually are issued in several tranches. Each tranche (other than the most junior tranche) has a seniority or priority over one or more other tranches, with 'tighter' collateral quality tests set to trigger a diversion of interest and principal proceeds that otherwise would be allocable to more junior tranches, which then are used to redeem or otherwise retire more senior tranches until the related tests are brought back into compliance.

The resulting subordination of such junior tranches constitutes the required credit enhancement for the more senior tranches and allows the CDO securities of such senior tranches to receive a credit rating that reflects such seniority or priority. Some CDOs use financial guarantees or insurance for the same effect. CDOs often allow principal proceeds to be reinvested in additional eligible CDO assets during a specified reinvestment period.

The CDO usually is 'managed' by a collateral manager, who identifies, acquires and monitors eligible assets for the CDO, although so-called 'static' CDOs will not be so managed and will not permit reinvestment of collateral proceeds. Often a CDO allows a portion of its assets to be traded annually, which allows a collateral manager to enhance the arbitrage opportunity of the CDO through adept trading.

### **Characterisation**

Generally, CDOs are either 'balance-sheet' or 'arbitrage' CDOs. Balance-sheet CDOs are transactions structured as 'sales' for accounting and regulatory capital purposes but are 'debt' for tax purposes. This 'linkage' allows the related CDO securities to be priced at narrower spreads than for comparable arbitrage CDOs.

Commercial banks use balance-sheet CDOs primarily for portfolio management and regulatory capital efficiency. With the pending implementation of Basel II and the more risk-sensitive capital standards therein, many predict the increasing use of balance-sheet CDOs by banks that would otherwise face increased capital requirements thereunder, especially for their lower-rated and unrated loan portfolios.

In contrast, arbitrage CDOs are structured as sales for all purposes, including tax, and are primarily motivated by the opportunity for arbitrage (the yield on the underlying portfolio will exceed the cost of financing such portfolio) made possible by the CDO. CDOs are also either 'funded' or 'synthetic' or a combination thereof (so-called 'hybrid' CDOs).

A funded CDO uses the proceeds of the offering of the related CDO liabilities to acquire a portfolio of the desired CDO assets. In contrast, a synthetic CDO will obtain the risk exposure to the desired portfolio by means of a credit derivative that references such portfolio. Of course, a hybrid CDO will permit both and offers the additional opportunity for a CDO manager to exploit arbitrage opportunities between the cash and synthetic markets and, within prescribed limits, to go 'short' a particular exposure. For convenience and simplicity, the remainder of this article will use terminology for funded CDOs, but in almost all cases there is a synthetic equivalent.

Arbitrage CDOs are either 'cash-flow' CDOs or 'market-value' CDOs and are distinguished by an overcollateralisation ratio determined by reference to the par or principal amount of the CDO assets (adjusted to the lower of the recovery or market value for defaulted CDO assets), in the case of a cash-flow CDO, or to the market-value of the CDO assets, in the case of a market value CDO. Typically, a market-value CDO requires more equity than a cash-flow CDO, but allows greater trading by the collateral manager. To allow the collateral manager to manage the capital structure of the CDO efficiently and to trade CDO assets as easily as possible, the capital structure of a market-value CDO usually includes a substantial revolving credit facility.

Of course, market-value CDOs are only possible where the underlying assets are sufficiently liquid so that such assets can be reliably valued. While balance-sheet CDOs are an important portfolio management and regulatory capital tool, especially for commercial banks, the remainder of this article will discuss typical arbitrage CDOs.

### **Structure**

The CDO issuer is usually established outside of the United States (for example, the Cayman Islands) and must not be engaged in trade or business in the US in order to avoid US taxation. The offering of CDO securities must be structured carefully to satisfy other applicable legal requirements, including (but not limited to):

- the perfection of the collateral lien on, and security interest in, the CDO assets;
- the exemption of such offering from registration requirements under applicable US securities laws and similar laws of other jurisdictions in which such CDO securities are offered;
- the avoidance of registration under the US Investment Company Act; and

- the exemption from adverse consequences under ERISA.

These requirements, together with a description of the innumerable variations of and refinements to the CDO structures described above, are beyond the scope of this article. The underlying CDO assets affect the capital structure of the CDO.

For example, if the underlying debt obligations are floating rate, the CDO securities also should be floating rate or must be hedged to avoid or minimise the interest-rate mismatch. If the underlying CDO assets require additional advances (e.g., they include construction or post-completion working-capital facilities), the CDO securities should allow borrowings thereunder so that the CDO can make the required advances.

Often, such CDO securities are held by commercial paper conduits that offer attractive pricing and flexible funding; however, the conduit will be required to have a minimum rating (which if 'lost' effectively requires the conduit to find a replacement or to post collateral to cover the obligation to make borrowings) and must be able to commit to make such borrowings when required by the CDO and the conduit will require a minimum rating of such CDO securities. Obviously, these complex mechanics can be avoided if the CDO only holds fully funded debt obligations.

### **Insurance risk as a CDO 'asset'**

CDOs, especially in synthetic form, may be thought of as an arrangement whereby investors 'sell' credit risk insurance on the underlying portfolio since the investors bear the risk of credit losses (other risks - currency, interest, etc. - are typically hedged by the CDO) arising in such portfolio according to the relative priority of their investment (junior-most CDO tranches bear the first risk of portfolio loss) and the amount of such investment. Similarly, a CDO can 'sell' insurance against other risks and there are a few examples thereof that will be reviewed later in this article.

Insurance risk can be obtained by a CDO in a variety of ways: ranging from traditional insurance/reinsurance arrangements to less traditional or novel instruments, such as industry loss warranties, so-called event or 'loss' swaps or similar derivatives or by so-called catastrophe bonds (often referred to as 'cat-bonds') and other insurance-linked securities (increasingly referred to as 'ILS'), which indirectly bear such risk. Just as for a financial asset CDO, the insurance risk CDO can have funded or unfunded exposures and can issue funded or unfunded securities, although in its simplest form an insurance risk CDO will likely issue funded securities and then pledge the proceeds thereof to secure the CDO's obligations under the underlying insurance risk transfer arrangements.

In addition, insurance risk CDOs will require special structuring in order to avoid usually unfavourable (and, in some cases, draconian) regulatory or tax consequences of an 'insurance' business or product.

## **Why?**

Insurance risk CDOs offer an attractive way for an investor (which, of course, might include insurance and reinsurance companies) to obtain exposure to a diversified portfolio of insurance risk and the opportunity to pick the desired risk/reward investment in the tranching CDO structure. For many investors this would also represent an investment that has an insignificant correlation with such investor's other investments and, accordingly, would provide portfolio diversification benefits.

Also, the CDO exposure would not have the 'cliff' risk that is present in other insurance-linked securities (for example, cat-bonds), whereby if the relevant event, although unlikely, actually occurs the CDO incurs substantial exposure. For an insurance or reinsurance company, insurance risk CDOs will provide additional risk transfer capacity to the market and liquidity and transparency for risk transfer pricing.

Further, CDO technology is especially effective at 'pooling' non-investment-grade assets or risks and efficiently financing them in an optimised capital structure.

### **Exposure to diversified risk**

There are many forms of insurance risk that are not easily obtainable in traditional markets and instruments and, where they are available, they may not have the benefit of the rating methodologies that underlie the insurance risk CDO and the diversification by originator, vintage, etc. that is required thereby. Examples of such risk include mortality and longevity life risks, certain property and casualty risks and, of course, specialty insurance lines.

### **Risk/reward choice**

As for financial asset CDOs, the tranching structure of an insurance risk CDO allows an investor to determine its appropriate risk/return investment: as the more junior tranches of the related CDO will bear more related risk, but also will have greater yield. This allows an investor to determine its preferred risk/reward investment and to make judgments about relative value among tranches of an insurance risk CDO.

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### **Low correlation and portfolio diversification benefits**

As noted above, some insurance risk is not easily obtained in traditional markets and, in any event, most insurance risk will have a low or insignificant correlation to other portfolio investments of even large sophisticated investors. As a result, an investor in an insurance risk CDO may obtain portfolio diversification benefits therefrom.

### **Absence of 'cliff' risk**

Many forms of other insurance-linked securities have a present 'cliff' risk, since they are structured to effectively transfer liability for extreme or remote (or, in financial modelling terms, 'tail') risk, for which (even though unlikely) there are disproportionately severe losses (so-called 'fat tail' risk). As a consequence, the event that triggers payment under the related ILS will likely result in substantial losses and exposes the investor in the related ILS to such 'cliff' risk.

Since the underlying insurance risk portfolio of an insurance risk CDO will be required to be appropriately diversified in order to obtain the highest ratings practicable, it is less likely that the occurrence of a single trigger event with respect to an underlying risk will 'wipe-out' a tranche or an investor therein completely or to the same extent as such other ILS.

### **Additional risk transfer capacity**

As for the underlying assets in financial asset CDOs, insurance risk CDOs can be expected to bring substantial capacity to the risk transfer markets and, as the product matures, the insurance risk CDOs may provide the market 'bid' that establishes the price for risk transfer and against which other forms of risk transfer, even traditional risk transfer markets and instruments, will have to compete. This has been the experience with other forms of CDOs, especially CLOs, the bid from which is often said to set pricing for the syndicated leveraged loan market.

### **Liquidity and transparency for risk transfer pricing**

The rating methodology underlying an insurance risk CDO will provide substantial transparency regarding the nature and degree of risk transfer in the related CDO and the pricing thereof, which will be disseminated into the applicable markets in order to convince investors to invest therein. In contrast, risk transfer and pricing in traditional insurance markets are reasonably opaque as a result of the predominantly private, bi-lateral nature thereof.

In addition, an insurance risk CDO may be more 'opportunistic' in offering efficient risk transfer for discrete exposures than traditional insurance or reinsurance markets may allow.

### **Efficient financing in optimised capital structure**

Like other CDOs, insurance risk CDOs provide highly efficient financing for the underlying exposures in a rating-optimised capital structure. For insurance and reinsurance companies, both as investors and risk transferors, insurance risk CDOs are potential buyers of discrete risk. This will be especially attractive to those insurance and reinsurance companies that have enterprise risk management or that seek to manage required regulatory capital efficiently.

## **Now?**

Three recent transactions appear to confirm the broader opportunity for insurance risk CDOs.

The first, Bay Haven Ltd. sponsored by Caitlin and arranged by ABN AMRO involved the sale of US\$200 million of Notes, tranching into 2 classes; Class A being rated 'AA' and Class B being rated 'BBB', and bearing the risk of the fourth through ninth of nine specified natural catastrophe events against which Bay Haven had sold risk protection under certain natural catastrophe swaps. The risk of the first three such events occurring was retained by the sponsor. The Bay Haven transaction closed in November 2006.

Following the evident success of the Bay Haven transaction, the Fremantle Ltd. program and the Series 2007-I issuance thereunder (the only issuance to date; although the program does permit additional issuances) closed in June 2007. Fremantle Series 2007-I was sponsored by Brit and again arranged by ABN AMRO and involved the sale of US\$200 million of Notes, tranching into 3 classes: Class A being rated 'AA/Aa1', Class B being 'BBB+/A3' and Class C being 'BB-/Ba2' and bearing the risk of the fourth through tenth of ten specified natural catastrophe events against which Fremantle Series 2007-I had sold risk protection under certain natural catastrophe swaps. Again the risk of the first three such events occurring was retained by the sponsor.

The third insurance risk CDO transaction, mistakenly claiming to be the 'first' in related press releases, was Bridge Re's Puma Capital transaction arranged by Dresdner Kleinwort (which owns Bridge Re), which also closed in June 2007. Puma Capital issued US\$182 million of Notes, broken into seven tranches rated from Class A at 'BBB+' to Class G at 'B', which served to provide risk protection against which Bridge Re, a newly-formed reinsurer, could write business.

There are other examples of related uses of CDO technology for insurance and reinsurance risk. For example, Hannover Re obtained credit default protection from a CDO called Merlin CDO I arranged by Calyon to protect against possible credit default by certain specified insurance and reinsurance counterparties.

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Of course, only time will tell whether the substantial promise of insurance risk CDOs will be realised, but the opportunity is compelling and the evidence to date is encouraging.

**Notes**

1. See CDOs-A View From the Tranches, Merrill Lynch, 14 February 14, 2005 at p.24.
2. See Global CDO Market Issuance Data, Securities Industry and Financial Markets Association, January 2007.
3. This article was written in late October 2007.
4. See UBS CDO Insight - ABS CDO Collateral Losses - Version 2.0, UBS Global Fixed Income Research, 9 August 2007

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