
Collateralized Debt Obligations – an overview

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What commonly is referred to as “Collateralized debt obligations” or CDOs are securitization of a pool of asset (generally non-mortgage), in other words a securitized interest. The underlying assets (a.k.a. collateral) usually comprise loans or other debt instruments. A CDO may be called a collateralized loan obligation (CLO) or collateralized bond obligation (CBO) if it holds only loans or bonds, respectively. Investors bear the “structured” credit risk of the collateral.

Typically, multiple tranches (or notes) of securities are issued by the CDO, offering investors various composite of maturity and credit risk characteristics. Tranches are categorized as senior, mezzanine, and subordinated/equity, according to their degree of credit risk. If there are defaults or the CDO's collateral otherwise underperforms/migrates/early amortize, scheduled payments to senior tranches take precedence over those of mezzanine tranches, and scheduled payments to mezzanine tranches take precedence over those to subordinated/equity tranches. This is referred to as the “Cash Flow Waterfall”.

Senior and mezzanine tranches are typically rated by one or more of the rating agencies, with the former receiving ratings equivalent of “A” to “AAA” and the latter receiving ratings of “B” to “BBB”. The ratings reflect both the expected credit quality of the underlying pool of collateral as well as how much protection a given tranche is afforded by tranches that are subordinate to it (i.e. acting as credit enhancement).

The sponsoring organization of the CDO establishes a special purpose vehicle to hold collateral and issue securities. Sponsors can include banks, other financial institutions or investment managers, as described below. Expenses associated with running the special purpose vehicle are subtracted from cash flows to investors. Often, the sponsoring organization retains the most subordinate equity tranche of a CDO (typically called the equity piece or the first-loss position).

For the neophyte, CDOs structures and concepts may seem difficult to grasp because there are actually a variety of different instruments that are all lumped together under the name “CDO.” Some of the different structures are detailed hereafter.

Static vs. Managed

One important distinction is between static and managed deals: whereby in the former, the collateral or referenced entity is known and fixed through the life of



the CDO. Investors can assess the various tranches of the CDO with full knowledge of what the collateral will be (or variation thereof). The primary risk they face is credit risk. On the other hand, with a managed CDO, a portfolio manager is appointed to “actively” manage the underlying collateral of the CDO. The life of a managed deal can therefore be divided into three phases:

1. Ramp-up phase which lasts about a year, during which the portfolio manager initially invests the proceeds from sales of the CDO's securities – sometime there is a warehousing period during which it is the sponsor who finances the build-up before securitizing.
2. A reinvestment (a.k.a. revolver) period that may last five or more years. During this phase, the manager actively manages the CDO's collateral, reinvesting cash flows as well as buying and selling assets within the guidelines prescribed.
3. In the final period, where the collateral matures, prepay or is sold, and where the different tranches' investors may receive some or all of their investment back according to the pre-establish waterfall.

At the time they purchase the CDO's securities, investors in a managed deal do not know what specific assets the CDO will invest in, and understand that those assets will change over time. The only known fact is the “current” identity of the portfolio manager and the investment guidelines that he will work under. Accordingly, investors in managed CDOs face both credit risk as well as the risk of poor management. Today, most CDOs are managed deals whereby investors have the added burden of paying portfolio management fees, and the portfolio manager is the sponsor or related.

Cash-Flow vs. Market-Value

CDOs can be structured as cash-flow or market-value deals. The former is analogous to a CMO (Collateralized Mortgaged Obligation). Cash flows from collateral are used to pay principal and interest to investors, and if such cash flows prove inadequate, principal and interest is paid to tranches according to seniority (a.k.a. the waterfall). At any point in time, all immediate obligations to a given tranche are met before any payments are made to less senior tranches.

With a market value deal, principal and interest payments to investors come from both collateral cash flows as well as sales of collateral. Payments to tranches are not contingent on the adequacy of the collateral's cash flows, but rather the adequacy of its market value. Should the market value of collateral drop below a certain level, payments are suspended to the equity tranche. If it falls even further, more senior tranches are impacted. An advantage of a market value CDO is the added flexibility they afford the portfolio manager who is not constrained by a need to match the cash flows of collateral to those of the various tranches.



Balance-Sheet vs. Arbitrage

Another distinction is that between balance-sheet CDOs and arbitrage CDOs. These names correspond to respective motivations of the sponsoring organization. With a balance sheet deal, the sponsoring organization is typically a bank or another institution that holds (or anticipates acquiring) loans or debt that it wants off-balance-sheet. Similar to traditional ABS (Asset Backed Securities), the CDO is the vehicle used to achieve such end. Instead, Arbitrage CDO deals are motivated by the opportunity to add value by repackaging collateral into tranches (same motivation for most CMOs). In finance, market efficiency theory suggests that the securities of a CDO should have the same market value as its underlying collateral (taking into account correlation), however like other markets, this is often not the case in practice. Accordingly, a CDO can represent a theoretical arbitrage.

Much of the "arbitrage" in a CDO arises from a persistent market imperfection related to the somewhat arbitrary distinction between investment grade and below investment grade debt (a.k.a. high yield or junk). Many institutional investors face limits on their ability to hold below-investment-grade debt: this can take the form of regulations, capital requirements, and investment restrictions imposed by management (eg. insurance companies, pension plans, banks and mutual funds). As a result, below investment grade debt often trades at spreads to investment grade debt that are wider than might be explained purely by credit considerations. With a CDO, a portfolio of below-investment-grade debt can be repackaged into tranches, some of which receive investment grade ratings (including AAA).

CDOs are mostly about repackaging and transferring credit risk. While it is possible to issue a CDO backed entirely by high-quality bonds, the structure is more relevant for collateral comprised partially or entirely of marginal obligations.

Cash vs. Synthetic

The last important distinction is to be made between cash and synthetic CDOs. The above explanations mainly apply to cash CDOs. The investors are exposed to credit risk by actually holding collateral that is subject to default. By comparison, a synthetic deal holds high quality or cash collateral that has little or no default risk. It exposes investors to credit risk by adding credit default swaps (CDSs) to the collateral. As with Cash CDOs, Synthetic CDOs can be static or managed, as well as balance-sheet or arbitrage deals.

Arbitrage synthetic deals are motivated by regulatory or practical considerations that might make a bank want to retain ownership of debt while achieving capital relief through CDSs. In this case, the sponsoring bank retains its referenced portfolio, but offloads its credit risk by transacting CDSs with the CDO.

For arbitrage synthetic deals, two main advantages are



- an abbreviated ramp-up period (for managed deals), and
- the possibility that selling protection through CDSs can be less expensive than directly buying the underlying bonds. This is often true at the lower end of the credit spectrum.

Concurrently, synthetic CDOs don't have to be fully funded which by-itself is very attractive. Indeed, for a cash CDO to have credit exposure to \$4Bn of debt, it must attract \$4Bn in investments, on the other hand, with a synthetic deal, credit exposure to \$4Bn in obligations might be supported by only \$600MM in high-quality collateral. In such a partially-funded deal, the entire \$4Bn referenced portfolio is tranching, but only the lower-rated tranches are funded. In this example, the most senior \$3.4Bn tranche would be called a "super senior" tranche and it might be retained by the sponsor or sold off as a CDS. The funded piece might comprise \$400MM of investment grade tranches and \$200MM of mezzanine and unrated tranches.

In arbitrage deals, partial funding offers higher capital relief than does full funding under the current Basle capital requirements. For synthetic deals, it is generally less expensive to sell the super senior tranche as a CDS than it would be to fund that tranche.

Conclusion

From a risk management and investment decision perspective, analyzing CDOs is difficult: not only is there an entire portfolio of credits to analyze, but in managed deals, an investor won't know what collateral will be purchased. An additional complexity is the requirement to properly evaluate and appreciate the cash-flow structure (or waterfall) and the tranching, as well as the source of risk for each position given underlying defaults and migrations. Sophisticated portfolio credit risk models should be used, and proper due diligence and ongoing monitoring and interaction with manager as there is much potential for manipulation or abuse by sponsors.