Credit Products
Special Report

Synthetic Overview for CMBS Investors

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Inside **Page**

■ Overview

Banks first used synthetic collateralized debt obligations (SCDOs) in the late 1990s to transfer corporate credit risk off their balance sheets without transferring physical ownership of the assets. As the market continued to develop, broker/dealers, in addition to banks, began transferring all types of credit risk though SCDOs, including the credit risk of commercial mortgage-backed securities (CMBS). Continued evolution of the dynamic market of SCDOs led to broker/dealer entry into such credit derivatives not only to hedge balance sheet risk but also to capitalize on any arbitrage opportunities that may exist.

Fitch Ratings has rated most SCDOs of CMBS completed to date, which speaks to Fitch's proactive and innovative views on SCDO products, combined with strong CMBS surveillance, which ensures timely ratings on the reference assets. The combination of these two strengths has led to Fitch's ability to publish informative and timely research reports and adapt quantitative analytical models effectively and efficiently to respond quickly to the demands of a constantly evolving market.

This report addresses CMBS investors' interest in SCDOs by highlighting the structural characteristics of recent SCDOs of CMBS with the CMBS investor in mind. The report describes a basic SCDO structure; however, structures continue to evolve, so Fitch Research on developments in the SCDO market will be updated periodically.

■ Basics of SCDOs of CMBS

The term synthetic refers to the method by which risk is transferred from a reference portfolio to investors. In a synthetic transaction, instead of purchasing a security representing an ownership interest in a portfolio, the investor owns a credit-linked note (CLN) that references a portfolio through a credit derivative *(see Appendix, page 7)*.

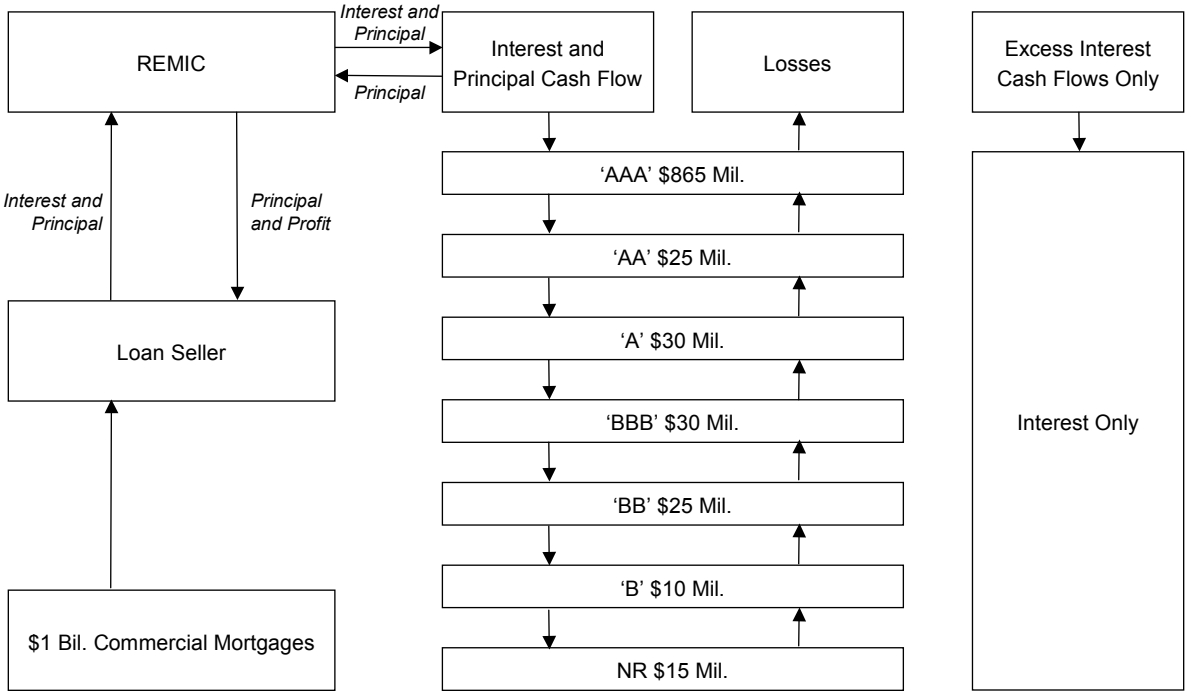
Parties to the Transaction

The foundation of an SCDO of CMBS is a credit derivative contract, called a credit default swap (CDS), between a protection buyer, usually a bank or broker/dealer, and a protection seller, which is the investor, typically structured as a special purpose vehicle (SPV). The CDS transfers a portion of the credit risk of owning a reference portfolio of CMBS from the protection buyer to the protection seller. The protection buyer pays a premium to the issuer SPV for the credit loss protection until either the contract matures or losses due to credit events reduce the principal balance of the CLNs to zero.

Charged Asset

The SPV issues CLNs that it sells to investors, investing the proceeds in highly rated, highly liquid collateral, referred to as the charged

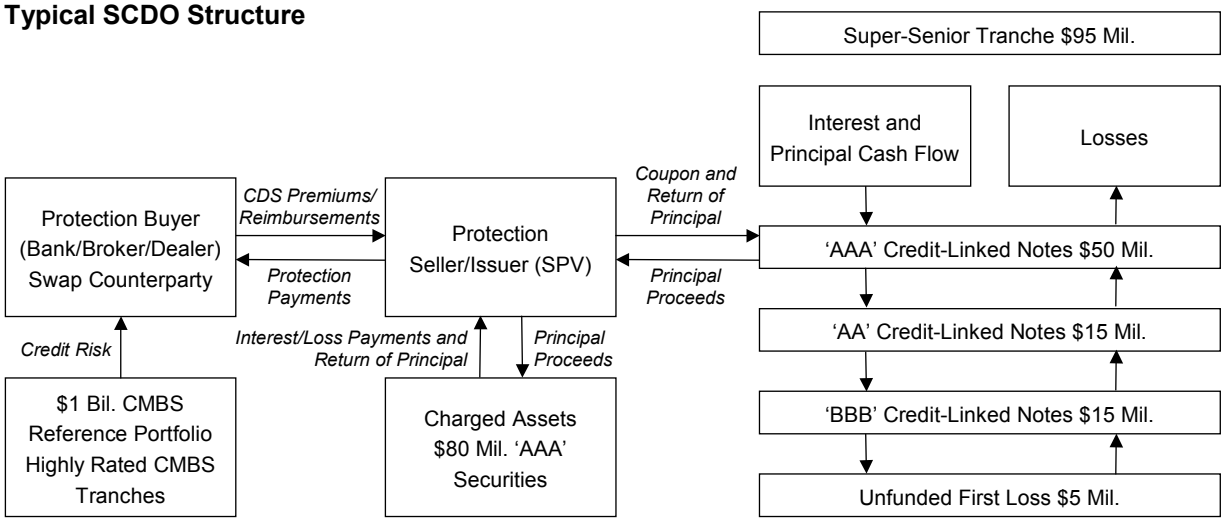
Typical CMBS Structure



CMBS – Commercial mortgage-backed securities. REMIC – Real estate mortgage investment conduit. NR – Not rated.

assets. If necessary, the charged assets will be liquidated to make loss payments to the protection buyer. CMBS investors should be aware that unless a third party guarantees against the risk of default of the charged assets, a default of this kind may lead to early termination, which could lead to losses for the investor due to changes in the market value of these assets. Therefore, note proceeds should be invested in highly rated charged assets

Typical SCDO Structure



SCDO – Synthetic collateralized debt obligation. CDS – Credit default swap. SPV – Special purpose vehicle. CMBS – Commercial mortgage-backed securities.

Flow of Funds

CDS premiums received from the protection buyer are combined with the interest on the charged assets to provide interest payments to the noteholders. If the reference CMBS portfolio incurs losses that exceed the credit enhancement of the lowest funded class of CLNs, the SPV will make a cash settlement payment to the protection buyer by liquidating part of the charged assets. A corresponding amount of the notes will be written down, in reverse sequential order of priority.

Protection Buyer (Swap Counterparty) Risk

A significant risk to the SCDO of CMBS investor is the risk associated with the default of the protection buyer, also referred to as the CDS swap counterparty. SCDO transactions are structured typically so that the swap counterparty's default will result in the termination of the entire transaction, which usually requires the liquidation of the charged assets prior to its maturity, exposing investors to a risk of loss arising from changes in the charged asset's market value.

Therefore, the swap counterparty must carry minimum ratings dependant on the highest rated funded note. If the protection buyer's rating falls below the minimum rating requirement, the swap counterparty must either replace itself with a suitable swap counterparty, seek a guarantor, or post collateral to cover potential loss upon its default, or the notes may be downgraded. For further information on Fitch's counterparty criteria, see Fitch Research on "Counterparty Risk in Structured Finance Transactions: Swap Criteria," dated Sept. 13, 2004, and any subsequent updates, available on Fitch's web site at www.fitchratings.com.

Legal Structure

There are several major differences in the legal structures employed by CMBS and SCDOs of CMBS. The most significant difference is that CMBS transactions use a real estate mortgage investment conduit (REMIC) structure, whereas most SCDO structures utilize Cayman Island limited partnerships to issue notes. The SCDO structures are capable of incorporating a large degree of flexibility for the SPV to purchase and sell securities that serve as the charged assets. These structures may also issue a mix of fixed and floating liabilities.

REMIC structures contain a large number of restrictions on the structure's flexibility to maintain tax-free status. As a result, portfolios are fully funded at the onset of the transaction, substitution of collateral is very limited, fixed or floating assets equal fixed or floating liabilities, and there are no revolving periods.

■ Capital Structure

Funded Amount

Unlike CMBS transactions, where the funded amount of the certificates equals the full balance of the underlying pool of mortgage loans, the funded amount of the SCDO of CMBS equals only the portion of credit risk being transferred from the reference portfolio via the CDS. To date, the funded amount of the SCDOs of CMBS has been small relative to CMBS transactions. The primary reason for the difference in size is that to date, SCDOs of CMBS have referenced only highly rated tranches of CMBS transactions. Also, protection buyers have chosen to transfer only a small portion of the credit risk of the entire reference portfolio through a funded CDS.

In the SCDO of CMBS structure, as seen in the charts on page 2 and 4, the protection buyer transfers only $80 million of credit risk from a $1 billion CMBS portfolio. As a result, the SPV issues $80 million in CLNs to collateralize or match the amount of credit risk being transferred.

Excess Cash Flow

Unlike a CMBS transaction that structures an interest-only class to receive excess interest, there is no excess cash flow in an SCDO of CMBS. Within an SCDO, the premiums paid by the protection buyer plus the interest received on the charged assets equals the interest owed on the funded liabilities. Hedging and arbitrage are the motivations to structure an SCDO, not to profit from excess cash flows. Interest may be reduced and reimbursed on the SCDO funded classes, but interest will never be restored beyond the expected amount.

Fully Ramped Up Portfolios

In CMBS transactions, the collateral portfolio is known at the time of closing and no new assets are added throughout the life of the transaction. Similarly, to date, SCDO of CMBS structures have referenced static CMBS portfolios at closing. However, as the SCDO of CMBS market evolves and single-name CMBS CDS become more liquid, reference portfolios might become managed and, therefore, revolving.

Comparison of CMBS and SCDO Structures

CMBS Structure	SCDO Structure
Collateral Principal Amount = $1 Bil. *Total Certificate Balance = $1 Bil.*	*Proceeds from Issuance = $80 Mil.* *Reference Portfolio = $1 Bil.* *Total Funded Balance = $80 Mil.*
'AAA' $865 Mil. Subordination = (25 + 30 + 25 + 15)/1,000 = 13.50%	Super-Senior (NR) $915 Mil. Subordination = (50 + 15 + 15 + 5)/1,000 = 8.50% AP = 8.5%; DP = 100.0%
'AA' $25 Mil. Subordination = (30 + 30 + 25 + 10 + 15)/1,000 = 11.00%	'AAA' $50 Mil. Subordination = (15 + 15 + 5)/1,000 = 3.50% AP = 3.5%; DP = 3.5%
'A' $30 Mil. Subordination = (30 + 25 + 10 + 15)/1,000 = 8.00%	'AA' $15 Mil. Subordination = (15 + 5)/1,000 = 2.00% AP = 2.0%; DP = 3.5%
'BBB' $30 Mil. Subordination = (25 + 10 + 15)/1,000 = 5.50%	'BBB' $15 Mil. Subordination = 5/1,000 = 0.50% AP = 0.5%; DP = 2.0%
'BB' $25 Mil. Subordination = (10 + 15)/1,000 = 2.50%	NR $5 Mil.
'B' $10 Mil. Subordination = 15/1,000 = 1.50%	
NR $15 Mil.	

CMBS – Commercial mortgage-backed securities. SCDO – Synthetic collateralized debt obligation. NR – Not rated. AP – Attachment point. DP – Detachment point.

The trend toward active management of reference portfolios is already occurring in the SCDO of residential mortgage-backed securities (RMBS) market. If SCDO of CMBS reference portfolios move down the credit spectrum toward mezzanine CMBS, investors may select portfolios that are actively managed to avoid credit loss events on the reference obligations.

Credit Enhancement

Similar to cash CMBS, credit enhancement is derived through subordination, which is calculated as the par amount of notes subordinate to the tranche in question as a percentage of the total deal size. However, CMBS investors should be aware of additional terminology associated with SCDOs of CMBS.

While credit enhancement is calculated using the same method in SCDO of CMBS structures, the level at which each class is exposed to aggregate losses in the reference portfolio is called the attachment point (AP). For example, if the AP is 2.0% for a class of notes, then the principal of the class will not be written down until the aggregate losses in the reference portfolio exceed 2.0%. Conversely, the detachment point (DP) is the point at which a class's exposure to the aggregate losses in the portfolio ends. The DP is calculated by adding the tranche thickness percentage to the AP. If a $15 million class has an AP of 2.0% and a DP of 3.5% on a $1 billion portfolio, the class has exposure to aggregate losses in a portfolio beginning at $20 million and ending at $35 million.

■ Market Update

Since 2003, a small percentage of CMBS had been included in SCDO reference portfolios. CMBS were usually included to add diversification to a portfolio composed of mostly RMBS or to mitigate risks of a collateralized debt obligation squared (CDO^2) transaction. However, more recently, Fitch has been rating SCDOs that transfer only CMBS risk. Standardization of credit derivative documentation, as described below, has helped facilitate the development of SCDOs of CMBS.

ISDA Documentation and Credit Events

For both corporate and structured finance (SF) collateralized debt obligations (CDOs), credit events — the mechanisms for triggering potential losses — are defined in the swap confirmation. Due to the unique characteristics of SF assets, credit events defined for such assets do not conform to the standard, unmodified 2003 International Swaps and Derivatives Association, Inc. (ISDA) credit derivative definitions, which were designed to reference single corporate entities. The latest version of these definitions, which was released in 2003, had resulted in a market convention of the following three main credit events:

- Bankruptcy.
- Failure to pay.
- Restructuring.

However, CMBS and other SF assets have different characteristics than corporates in terms of interest and principal allocations and the treatment of losses on the underlying receivables pools. As a result, confirmations specifically for SF trades needed to be developed to standardize and facilitate growth. In June 2005, ISDA published the following two dealer forms governing asset-backed securities (ABS) transactions: CDS on ABS with Cash and Physical Settlement (CDS on ABS); and Pay As You Go on ABS or Physical Settlement (PAUG). Differences between the two confirmations include credit events, settlement procedures, and notional amount adjustments.

Typically, European deals trade using the CDS dealer form, and this form is not restricted to a particular type of SF transaction. On the other hand, deals in the U.S. trade using the PAUG form, which was created primarily for RMBS and CMBS transactions. Credit events in the CDS on ABS form include failure to pay, loss event, and, potentially, bankruptcy and rating downgrade. Credit events in the PAUG form include failure to pay principal, writedown, and, potentially, distressed ratings downgrade and maturity extension. Fitch expects to publish more detailed upcoming research on these forms and their implications for Fitch's rating process.

What Are Soft Credit Events?

- Sometimes a credit event may be called that is not immediately followed by default (a soft credit event) — i.e. a writedown that could be written back up.
- Soft credit events can be triggered on occasions when the relevant reference asset continues to perform, thereby exposing the protection seller to undeserved risk.

■ Fitch's Rating Approach

The centerpiece of Fitch's CDO rating methodology for all types of CDOs, including synthetic CMBS CDOs, is its default VECTOR model. The model is a portfolio analysis tool that uses Monte Carlo simulations incorporating default probability, recovery rate assumptions, and asset correlation to calculate potential portfolio default and loss distributions, referred to as rating loss rate (RLR). For more details on VECTOR, see Fitch Research on "Global Rating Criteria for Collateralised Debt Obligations," dated Sept. 13, 2004, available on Fitch's web site at www.fitchratings.com.

RLR is the expected portfolio loss for a particular credit portfolio in the respective rating scenario. The portfolio loss is calculated using Fitch's recovery rate assumptions for each asset, taking into account the asset's jurisdiction, its ranking in the capital structure of the issuer, and the rating stress level. The RLR is gross of any structural mitigants, such as excess spread and is derived from the portfolio loss distribution. In the absence of structural support, static credit enhancement has to cover the RLR for the respective rating.

Fitch's assessment of default probability for a portfolio of CMBS is based on the credit quality of such reference entities, usually measured using ratings. Fitch's ratings are the primary indicators of credit quality; however, if no Fitch rating is available, the agency looks to the lowest public rating assigned by another rating organization (if rated by more than one such organization) or the only public rating assigned by another rating organization (if rated by only one such organization). Fitch reserves the right to adjust the rating used in either of these cases if there is an indication that Fitch's credit opinion may differ.

Default Probability

Fitch may apply an adjustment to the default probability of each asset within a synthetic SF CDO to account for any increased risk of default arising from potential soft credit events that are introduced through transaction documentation.

Correlation

For each reference entity entered into the VECTOR model, one of Fitch's SF securities asset classes and the country in which the SF security's underlying assets are domiciled must be indicated. This allows the model to determine the appropriate correlation for a particular portfolio of SF securities.

Recovery Rates

Recovery rates for each SF security are a function of the security's priority in the capital structure of the issuer, the credit rating of the respective tranche, and the tranche size within its own capital structure. One of Fitch's SF securities asset types must be indicated for each SF security reference entity for the VECTOR model to determine the appropriate recovery rate.

■ Considerations for Investors

CMBS investors will find that the idea of risk transfer through a derivative contract differs from CMBS. However, if investors learn the SCDO structure, the investor can concentrate on the credit risk of the CMBS reference obligation, which the CMBS investor understands.

This report only covers an introduction to SCDOs of CMBS structures. For a complete understanding of Fitch's approach to rating SCDOs, see Fitch Research on "Considerations for Funded Portfolio Credit Derivatives (Synthetic CDOs)," dated June 8, 2005, and "Synthetic Structured Finance CDOs," dated Feb. 17, 2004, and any subsequent updates, all available on Fitch's web site at www.fitchratings.com.

Reference Section

Characteristics and Definitions of SCDOs

The term synthetic collateralized debt obligation (SCDO) covers a multitude of transaction types, often with different structural features, collateral, motivations, and types of reference entity. The key features that qualify a transaction as an SCDO are an element of synthetic risk reference (through the use of credit derivatives) and the use of debt obligations as reference points for the risk transfer.

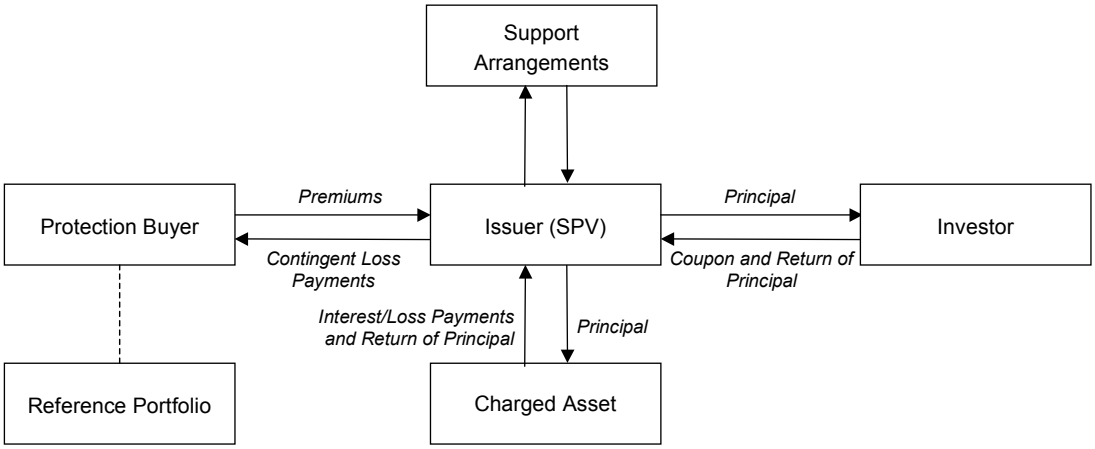
A Typical Funded Structure

Funded transactions typically involve the issuance of credit-linked notes, which may be constituted in a number of ways, including issuance by a collateralized special purpose vehicle (SPV) or from a medium-term notes program. The SPV issues notes that it sells to investors, investing the proceeds in highly rated collateral. Credit default swap (CDS) premiums received from the swap counterparty are combined with the interest on the collateral to provide interest payments to the noteholders.

When the collateralized debt obligation incurs losses that exceed the attachment point for the relevant tranche (the credit enhancement), the SPV will make a cash settlement payment to the swap counterparty by liquidating part of the collateral. A corresponding amount of the notes will be written down, in reverse order of priority.

In unfunded SCDOs, the credit risk is transferred purely by the creation of CDS; in this case, the protection seller makes no up-front payment of the notional amount.

Structural Diagram



SCDO – Synthetic collateralized debt obligation. CLNs – Credit-linked notes. SPV – Special purpose vehicle.

Definitions

Capital Structure: Single vs. Multiple Tranche

A fully placed collateralized debt obligation (CDO) is a structure in which the risk of the reference pool is multi-tranched and fully sold to investors, although a first-loss piece/equity will often be retained by the protection buyer. In a single-tranche CDO, only the tranche desired by an investor is created and distributed.

Definitions (continued)

Protection Buyer
Typically, the arranger of the synthetic collateralized debt obligation (SCDO) is the protection buyer. Protection may be bought on all or part of the capital structure and may be tranched into individual credit default swaps (CDS). The protection buyer pays CDS premiums and, in return, receives payments if losses are sustained by the CDS tranches.

Protection Seller
The protection seller is the party taking on the portfolio credit risk. For a funded CDO, the protection seller is usually the special purpose vehicle (SPV), which, in turn, issues credit-linked notes (CLNs) to investors.

Issue Proceeds
The proceeds from the issuance of the CDOs are normally invested either in highly rated securities (e.g. government bonds), an investment agreement, or cash. These assets (sometimes described as charged assets) are available to: make any payments due from the issuer to the protection buyer under the terms of the portfolio CDS; and redeem the note at maturity. The charged asset securities will mature before the notes.

Support Arrangements
The protection buyer may provide support for the transaction in the form of a put agreement, an exchange agreement, or a repo arrangement to guarantee the value of the charged asset securities in the event of their early liquidation.

Attachment Point
The attachment point (AP) defines the amount of subordination below the rated tranche. It is measured as a percentage of the reference portfolio and is effectively the entire credit enhancement if the CDO has no cash flow structure.

Detachment Point
The detachment point (DP) is the point of exhaustion for a tranche. It is measured as a percentage of the reference portfolio and defines the thickness of a tranche when compared with an AP. If the DP less the AP is a small percentage, the tranche is thin and more susceptible to high loss severity on the occurrence of an event of default.

Reference Entities
Various underlying assets are found in referenced structures. Transactions may reference investment-grade or speculative-grade corporate obligations, asset-backed securities (ABS), and emerging market exposures.

Credit Event
The underlying reference portfolio can experience credit events on individual referenced obligations. Credit events may usually be called when the protection buyer gives notice of two sources of publicly available information that indicate that the credit event conditions are satisfied. Credit events in the Pay As You Go on ABS or Physical Settlement (PAUG) form include failure to pay principal, writedown, and, potentially, distressed ratings downgrade and maturity extension.

Rating Loss Rate
The rating loss rate, which is the portfolio loss for a particular credit portfolio in the respective rating scenario, is an output of Fitch Ratings' default VECTOR model. It is defined as the level of losses VECTOR requires a tranche of the CDO to absorb to be consistent with a particular rating. Specifically, it is a function of the number of defaults in the reference portfolio (rating default rates) and recoveries that are consistent with the target rating.

Managed vs. Static
A static SCDO has a fixed portfolio of reference entities. Changes to the portfolio only occur when an entity is deleted following a credit event or in other specific circumstances, such as a merger. In a managed SCDO, the portfolio of referenced entities is not static, but dynamic, allowing the asset manager or investor to add exposures by entering into additional CDS and remove exposures by unwinding or off-setting existing CDS (subject to certain trading criteria).

Definitions (continued)

CDO Squared

CDO squared transactions are SCDOs that reference portfolios of single-tranche CDOs (inner CDOs). These are structured synthetically in the form of portfolio CDS. The master portfolio will reference inner CDO tranches and may, additionally, reference ABS. Inner tranches are each defined by their AP, which represents credit enhancement, and their DP, which determines each inner CDO's tranche thickness.

If total losses in one of the inner CDOs' underlying reference portfolios exceed the AP for that CDO, the tranche notional will be written down (via the CDS), which will cause a credit event on the master CDO. The CDS of the inner tranches allow multiple credit events over the term of the CDO structure, and losses on each of the inner CDOs will be capped at the DP for that inner CDO. The CDO squared noteholders benefit from additional subordination at the master CDO level. If losses in the master CDO exceed the threshold for the CDO squared tranche, a cash settlement payment becomes due under the master CDO.

CMBS vs. SCDO of CMBS

	CMBS	SCDO of CMBS
Funded Amount (%)	100	5–10*
Credit Enhancement	Derived Through Subordination	Derived Through Subordination
Excess Cash Flow	Yes	No
Fully Ramped Up Portfolio at Closing	Yes	Yes or No
Legal Structure	REMIC	Off-Shore LLP

*This percentage will likely increase as the commercial mortgage-backed securities (CMBS) reference portfolios move down the rating spectrum.
SCDO – Synthetic collateralized debt obligation. REMIC – Real estate mortgage investment conduit. LLP – Limited liability partnership.