

Advanced Topics in Real Estate Finance
Introduction to CMBS Credit Default Swaps

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Commercial Mortgage Backed Securities (CMBS) are the latest asset class to join the family of credit derivatives indices. Credit derivatives are bilateral financial contracts that transfer credit exposure from one counter party to another, without a transfer of the underlying asset. Credit derivatives isolate credit as a distinct asset class, and allow financial institutions and corporations to manage credit risk more efficiently.

The simplest and most widely used form of credit derivatives is the credit default swap (CDS), which is conceptually similar to credit insurance, an insurance policy associated with a specific loan against default for which the purchaser of the insurance pays a regular premium. One of the differences between credit insurance and a credit default swap is that a credit default swap provides insurance against losses suffered due to some predefined credit events. Credit events definition is outlined in the legal documentation between counterparties, and does not necessarily involve default. Another difference is that credit derivatives are tradable, while credit insurance contracts are generally not. Credit default swap contracts are very liquid in the corporate world, but have not yet emerged in the CMBS market as liquid synthetic tools.

There are two primary hindrances to the development of CMBS credit derivatives. First, the lack of contract standardization causes investors' hesitation in trading the derivatives. The efficiency and liquidity of aligning buyers and sellers highly depend on consistent, reliable legal documentations. The ISDA has been at the forefront of this development.

Second, while the ability to buy or sell protection on a specific bond may help investors hedge a position or gain exposure to an asset that is unavailable in the cash market, it is not a particularly efficient way to gain or shed exposure to a diverse pool of assets. With the introduction of tradable CMBS index in March 2006, investors can now gain a diversified CMBS exposure. The index should also increase transparency in the market.

While there are other forms of credit derivatives such as total return swaps and credit linked notes, the focus of this paper is on credit default swaps in the context of the CMBS market. In this chapter, I am introducing the credit default swaps for CMBS, explaining their benefits and applications, and finally discussing the role of index in the derivatives market.

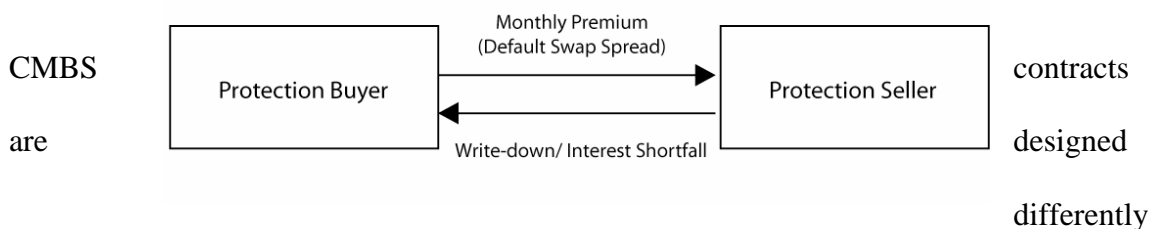
Credit Default Swap in the context of CMBS market

Synthetic CMBS deal structures involve the removal of the credit risk associated with a pool of commercial mortgages by means of a credit default swap. A Credit default swap enables the protection buyer to isolate and reduce its credit exposure to a reference entity and the protection seller to synthetically gain exposure to the same entity. The protection buyer pays a periodic fixed fee called a default swap premium to a protection seller over the life of the transaction, in return for which the seller will make a payment on the occurrence of a specified credit event. The premium is usually quoted as a basis point multiplier of the benchmarked notional value of the reference entity. In a CMBS, the reference asset is essentially a basket of CMBS securities. A cash flow exchange mechanism of a default swap is illustrated below:

Between trade initiation and a credit event or maturity:



Following a credit event:



from the traditional credit default swap contracts in the corporate world. They have been tailored to accommodate certain nuances specific to CMBS.

Mechanics

In most CMBS contracts, there are three credit events:

1. Principal write-down

A principal write-down refers to a reduction in the outstanding balance of the reference CMBS pool. In a principal write-down, the protection seller would compensate the protection buyer in the amount of the write-down. The contract ends if the reference asset is fully written down. A partial write-down amount proportionately reduces the notional value of the reference asset that the default swap

premium is based on. In this case, the protection buyer would continue paying the premium on the proportionately reduced notional amount, and the protection seller pays nothing.

2. Interest shortfall

An interest shortfall occurs when the interest passed through from the underlying mortgage loan is less than the interest to be paid on the security. CMBS subordinate classes often suffer from interest shortfalls. There are three methods that determine the mechanic of the compensation in the event of an interest shortfall.

- Fixed-cap

In a Fixed-cap method, the protection buyer is compensated for interest shortfall up to the default swap premium. The protection buyer is not compensated for the interest shortfall amount that exceeds this premium. In the case that the shortfall is equal to or higher than the swap premium, the premium paid by protective buyer offsets the interest shortfall amount, resulting in net zero payment.

- Variable cap

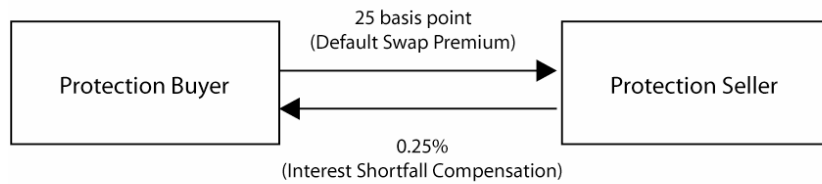
In a Variable cap method, the protection buyer is compensated for interest shortfall up to a floating rate such as LIBOR plus the default swap premium.

- No cap

In this method, the protection buyer is compensated for the entire amount of interest shortfall.

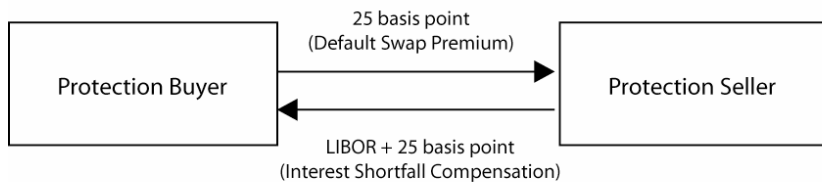
The 3 methods of interest shortfall treatment in a CDS is illustrated below:

Fixed cap method:



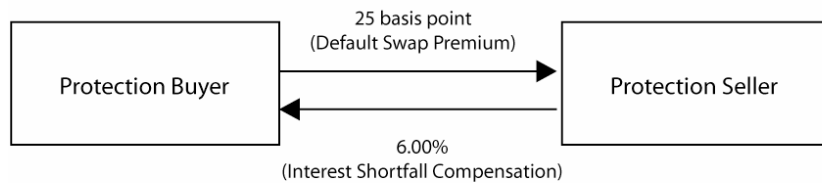
Net Cash Flow: 0 bp

Variable cap method:



Net Cash Flow: Protection Seller pays Protection Buyer LIBOR

No cap method:



Net Cash Flow: Protection Seller pays Protection Buyer 5.75% (6% coupon - 25bp)

Note: The assumption is that the underlying security has coupon payment of 6%. The CDS has a premium of 25 basis point. For simplicity, the assumption is that the underlying security is suffering 100% interest shortfall.

Under each method, any subsequent recovery of interest shortfall from the underlying security triggers a pro-rated reimbursement back from the protection buyer to the protection seller. The amount of this reimbursement is called “Additional Fixed Payment.”

3. Principal shortfall

A principal shortfall occurs when the reference CMBS fails to pay off principal by the legal maturity date. This even is equivalent to the principal default of a structured finance security.

The CDS contract in CMBS does not terminate on the occurrence of a credit event as in the corporate world. Instead, it is structured on a “Pay As You Go” (PAUG) basis, which involves ongoing two-way payments over the life of the contract between the counter parties. Since the International Swaps and Derivatives Association (ISDA) credit derivatives documentation standardization of the PAUG basis in June 2005, the market for CMBS CDS has grown dramatically.

The PAUG also includes a provision for an option, called “Physical Settlement Option,” for the protection buyer to terminate the contract by delivering the reference entity. This feature is triggered by a credit event similar to the physical settlement under the corporate CDS contract. The contract terminates when the protection buyer physically delivers the full notional amount.

Applications and benefits: CDS contracts in CMBS have many useful applications.

Expressing credit views

Before the introduction of credit default swap in CMBS, investors have no convenient means of expressing credit views on the market. With CMBS CDS, investors now have the option to convert negative credit outlook into a position in CDS.

Hedging credit risk

Investors desire exposure to debt that is more risky because of the higher returns it offers. However, such exposure brings with it credit risk. This is when credit derivatives come in useful. CMBS CDS allow investors to have gain or shed exposure unachievable in the cash market. CDS contracts can be used by CMBS conduits to hedge the pipeline of loans they hold awaiting securitization against credit widening and negative credit performance. Conduits historically hedge the risk of fluctuating Treasury rates and fluctuating interest rate swap rates, but they had no means to hedge against the risk of CMBS credit spreads widening.

Access to assets in restricted markets

Some parts of CMBS capital structure such as mezzanine and non-investment grade are difficult to access.

Diversifying investment options

There is potential to create diversified portfolio through CMBS CDS trading. This would allow investors to be selective about CMBS exposure, leveraging their underwriting capabilities.

Ability to trade term unfunded CMBS credit exposure

CMBS CDS provides a way for investors to trade term basis between CMBS CDS and Corporate CDS. Also, investors can trade capital structure term such as longing BBs and shorting BBBs.

Potential protection buyers include

- Hedge funds expressing a negative market view
- High-yield real estate players looking to hedge specific exposures
- Financial institution looking to reduce loan portfolio risk following mergers and acquisitions

Potential protection sellers include

- B-piece buyers interested in leveraging their underwriting capabilities
- Traditional CMBS investors who cannot satisfy real estate allocation requirements in cash markets
- Structured vehicles looking for diversified exposure to higher-yielding CMBS assets

The role of index in derivatives market

As other derivatives products, the development of the CMBS credit derivatives highly depends on the availability of a benchmarked index. One of the most significant events in the CDS market was the launch of global indices for CDS of corporate credit risk in 2004, which remarkably increased trading volumes and provided a strong platform for other index CDS products. Since then, the total notional amount in the credit derivatives market has more than quadrupled. The recent growth has finally expanded into a new sector: the CMBS market.

The introduction of CMBX¹ index in March 2006 provides investors with a more liquid and standardized tool for trading and structuring a diverse pool of assets. CMBX is a tradable synthetic family of indices based on US CMBS securities consisting of six sub-indices, each based on the 25 most recently issued CMBS deals, where the notional amount mirrors amortization of the reference bonds. The six index tranches are based on the rating of the reference obligations, rated AAA through BBB-. A new series of CMBX is issued every six months. The CMBX reference entities are selected through an algorithm that identifies the most recently issued deals over a minimum size of \$700 million, and which satisfy additional diversity requirements. The CMBX index uses the standardized template based on the PAUG template published by the ISDA. The template for CMBX trading is standardized with three floating amount events with a fixed cap for the interest shortfall event. Market quotes are based on spread, not on price. Protection buyers pay monthly premiums based on a predetermined fixed rate. Also, the CMBX index contract does not include a physical delivery option for protection buyers.

An investment in a tranche of the CMBX index is technically analogous to entering into a separate credit derivatives transaction on each of the 25 underlying reference obligations.

The index represents aggregate performance of a basket of credit default swaps.

¹ CMBX was launched by Markit Group Ltd., and CDS IndexCo LLC. Markit Group is a provider of independent mark-to-market pricing and valuations, and CDS IndexCo is a consortium of 16 investment banks licensed as market makers. The market makers in the new CMBX index are Bank of America, Bear Stearns, Citigroup, Credit Suisse, Deutsche Bank, Goldman Sachs, J.P. Morgan, Lehman Brothers, Merrill Lynch, Morgan Stanley, Nomura International, RBS, Greenwich Capital, UBS, and Wachovia. Markit serves as the Administration and Calculation Agent for the indices.

Potential applications of CMBX: The new index benchmark for CDS of CMBS provides investors with additional benefits.

While the CMBS CDS market allowed investors to express their views towards specific bonds, the approach is inefficient for investors who wish to express a view on an entire rating category of mortgages. For example, an investor may buy protection in one rated index while sell protection in another rated index, expressing a relative value opinion among asset classes. The CMBX eliminates specific bond-level basis risk therefore provides a more operationally efficient and low cost method of sector rotation trading. Another possible strategy is to exploit relative value between the general market and specific deals by taking a long-short position in single-name CMBS CDS and a CMBX index. An investor would also separate spread risk and credit risk of the CMBS market by rolling into a new index series every six months.

The broad-based exposure of CMBX would allow investors who benchmark against a CMBS index to hedge their position without being influenced by bond-specific credit concerns. The investors can then spend their time harvesting alpha through careful bond selection and either buying protection or selling under-perform cash bonds or selling protection or buying outperform cash bonds. This strategy would help investors to outperform the given index.

CDO managers would use the CMBX for managing their portfolios, either for a quick ramp-up or by engaging in a long-short strategy. They can also engage in a hybrid deal

where they can choose between cash and synthetic collateral to take advantage of asset availability and market spread levels.

The availability of the CMBX should result in increased efficiency in synthetically trading and transferring the credit risk of commercial real estate market. The liquidity of trading will increase trade flow, impact cash spreads, and eliminate arbitrage opportunities in the market. The readily available public information on construction and calculation of the index will lead to increased investors' confidence and ensure transparency. Quick dissemination of pricing information would lead to greater liquidity. The standardized documentation for CMBX contracts will promote operational efficiency.

With the newly introduced CMBX index, a tradable index that tracks default risk of securities constructed from CMBS, it is hoped that the real estate synthetic debt market will soon take off. The growth of a market in derivatives would go a long way towards further enhancing CMBS' reputation as a mainstream asset class in the fixed-income world, driving financial capital into real estate.

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