

At A Glance | Part of NERA's Series on Structured Products

Constant Maturity Swaps (CMSs) and CMS-Linked Notes¹

Overview

A constant maturity swap (CMS) is a type of *interest rate swap*. In a “plain vanilla” interest rate swap one party periodically pays cash flows equal to a pre-determined *fixed rate* on a notional principal to a counterparty for the duration of the contract. In exchange, the counterparty periodically pays cash flows equal to a variable (“*floating*”) rate on the same notional amount and for the same duration of the contract. The floating rate depends on a reference index or rate such as 3 month LIBOR.² At swap initiation, the fixed rate is typically chosen in such a way as to make the present value of cash flows equal between the two parties to the transaction. Such a fixed rate is referred to as a par swap rate or just a “*swap rate*”. An example of a plain vanilla interest rate swap is a 30-year contract in which one party pays a fixed rate of 3% annually in semi-annual installments, and in exchange receives a LIBOR rate paid each quarter.

In a CMS, one party periodically pays a swap rate of a specific tenor³ (or the spread between swap rates of different specified tenors), known as the *CMS rate*, and in exchange receives a specified fixed or floating rate from the counterparty. A CMS rate is re-set every period to equal the most recent swap rate of the specified tenor (or the spread between the most recent swap rates of different specified tenors). For example, a CMS might obligate one party to pay the most recent 30-year swap rate to a counterparty whose obligation is to pay the first party a rate referencing LIBOR.

There are different types of CMS and CMS-related financial products. One common variant is a CMS-linked note: a structured product typically issued by a financial institution such as a bank. The payoffs from such a note are more complex than those from a plain-vanilla fixed income product. The investors in CMS-linked notes receive coupon payments linked to a CMS rate or a difference (spread) between two CMS rates. In the simplest type of CMS-linked note, an investor may receive a periodic coupon payment equal to the CMS rate on, say, a 20-year swap.

A Closer Look

Two examples of spread-based CMS-linked notes are “*steepeners*” and *non-inversion* notes.

A steepener is a CMS-linked note that allows investors to profit from a steepening of the CMS curve,⁴ i.e., from an increase in longer-tenor CMS rates relative to shorter-tenor CMS rates. For a specified period of time after issuance, known as the “*initial interest period*,” the coupon payments of a steepener are typically fixed at an above-market rate. In the variable rate period that follows, a steepener’s coupon payments rise, in accordance with a pre-specified formula, with an increase in the spread between a specified longer-tenor CMS (for example, a 30-year CMS) and a specified shorter-tenor CMS (for example, a 5-year CMS). The coupon rate typically has a “*floor*” of zero percent, and may also have a “*cap*.”⁵

A non-inversion note is a note whose coupon rate is fixed as long as the CMS rate curve between two specified maturities does not “invert.” The CMS curve is said to be inverted in a range if the CMS rate is lower for the swap with the longer tenor, e.g., if the 10-year, CMS rate is lower than the 2-year CMS rate. No interest accrues on days when the curve is inverted in the relevant range.⁶

CMS notes, steepeners and non-inversion notes among them, may be “callable,” meaning that the issuer has an option to pay off the principal prior to maturity.

Risks of CMS and CMS-Linked Notes

A party to a CMS or CMS-linked note contract is exposed to various risks. Among these are market risk, illiquidity risk, credit risk, and early redemption risk.

- *Market risk:* CMS and CMS-linked notes are exposed to market-wide movements in interest rates. Although some CMS-linked notes have an “initial interest” period during which they pay attractive fixed rates, they may pay low or no coupons to investors depending on the market conditions following the “initial interest” period.
- *Illiquidity risk:* CMS and CMS-linked notes are typically not exchange-listed and may have limited liquidity.
- *Credit risk:* CMS expose the parties to one another’s credit risk. CMS-linked notes expose the investor to the credit risk of the issuer.
- *Early redemption risk:* If a CMS-linked note is callable, the owner is subject to early redemption, which carries reinvestment risk.

Recent Developments

CMS-related products such as CMS-linked notes have remained popular in recent years, as some institutional and retail investors have sought higher -yielding investments in a low interest rate environment. These products vary in their complexity. In a January 2012 Regulatory Notice, Financial Industry Regulatory Authority (FINRA) listed steepeners as an example of a product that may warrant enhanced oversight by brokerage firms.⁷ There have been a number of legal actions involving CMS-related products. Some of these are summarized below.

Investor and Transaction Counterparty Complaints

In 2008, Ille Papier-Service (IPS) brought a suit against Deutsche Bank related to a CMS (steepener)-based transaction that both were party to. Under the transaction agreement, Deutsche Bank would pay IPS a fixed rate until maturity, and IPS would pay Deutsche Bank a fixed rate for the first year of the contract, and a variable rate based on the spread between the 2-year and the 10-year CMS rates thereafter. In 2011, the German Federal Supreme Court found that Deutsche Bank did not properly disclose the risks of the transaction and failed to inform IPS that upon inception that the transaction had a negative market value. The Court ordered Deutsche Bank to pay over half a million Euro in damages. The court also held that there was a conflict of interest, since Deutsche Bank was both advising the client and hedging its exposure under the transaction.

In 2008, a class action complaint was filed against Lehman Brothers’ directors and officers, Ernst & Young, and a number of underwriters. The proposed class consisted of investors who purchased securities issued by Lehman Brothers, including CMS-linked notes. The plaintiffs alleged that one of the brokerage firms sold these notes to its customers despite knowing that Lehman might not be able to meet its obligations. In 2013, there was a settlement exceeding \$100 million related to this case.

In 2009, the Irish Stock Exchange found the leading stockbroker in Dublin, J&E Davy, to be in violation of the exchange rules. The violation related to the sale of CMS bonds in an amount exceeding €180 million to nearly 150 credit union customers. J&E Davy settled with the credit unions for approximately 35 million euros.

In 2012, Morgan Stanley settled a case involving its sale of approximately \$6 million in euro-denominated CMS-linked notes to Irish investors. The notes were linked to bonds issued by Germany-based Dresdner Bank. According to the claim, Morgan Stanley allegedly failed to redeem the CMS notes in early 2009 when a mandatory redemption clause based on the change in the underlying bonds’ credit rating was triggered, and instead waited for more favorable market conditions to redeem the notes.

It is possible that additional complaints will follow, with investors claiming that the risks inherent in other CMS-related products were inadequately disclosed.

How NERA Helps: Key Areas of Expertise

NERA assists clients in disputes relating to a wide range of interest rate products and structured products including CMS and CMS-linked notes. NERA's securities experts have been involved in numerous disputes where we have analyzed issues related to suitability, risk, and valuation of such products. Our experts have extensive experience valuing and analyzing complex interest rate products, structured products, and other derivatives. Our relevant expertise includes:

Investor Complaints and Broker-Customer Disputes

- Evaluating suitability and risk of specific investments
- Assessing portfolio performance
- Examining portfolio-level risk characteristics
- Evaluating liability
- Evaluating opposing expert reports and analyses
- Analyzing and calculating damages (if any)

Valuation and Risk Management

- Valuing interest rate products including CMS and options on CMS

- Valuing structured products including CMS-linked notes
- Analyzing and evaluating hedging and trading strategies involving positions in interest rate products and structured notes (including CMS, options on CMS, and CMS-linked notes)
- Analyzing trading data to examine liquidity and efficiency of trading in secondary markets

About NERA

NERA Economic Consulting (www.nera.com) is a global firm of experts dedicated to applying economic, finance, and quantitative principles to complex business and legal challenges. For over half a century, NERA's economists have been creating strategies, studies, reports, expert testimony, and policy recommendations for government authorities and the world's leading law firms and corporations. With its main office in New York City, NERA serves clients from more than 25 offices across North America, Europe, and Asia Pacific.

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Endnotes

- 1 This topic is further explored in the authors' forthcoming paper on CMS and CMS-linked notes.
- 2 LIBOR (London Interbank Offered Rate) is an indication of the average offer rate at which a leading bank can obtain unsecured funding for a given period in the Eurocurrency market.
- 3 Tenor is the amount of time left till expiration of a financial contract (such as a swap contract). It is also commonly referred to as "maturity."
- 4 The "CMS curve" relates CMS tenor to CMS rate at a point in time. Generally, CMS rates increase with tenor. When the reverse holds, the CMS curve is said to be "inverted."
- 5 There may be further provisions of varying degrees of complexity regarding how a coupon is computed. For example, a steepener may pay a fixed rate (for example, 9 percent) for a year after issuance, followed by a coupon equal to the spread between the 30-year CMS rate and the 2-year CMS rate *less* a certain percentage amount or "strike" (for example, 25 basis points), increased by some "multiplier" or "leverage factor" (for example, 4).
- 6 Some non-inversion notes have an initial interest period during which a fixed rate is paid, regardless of the shape of the CMS curve.
- 7 FINRA Regulatory Notice, 12-03, January 2012, available at: <http://www.finra.org/web/groups/industry/@ip/@reg/@notice/documents/notices/p125397.pdf> (accessed 31 December 2013).