CME Group
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Advisory Notice

Clearing House

09-348

TO: Clearing Member Firms
Back Office Managers

FROM: CME Clearing

SUBJECT: **Margin Parameters in the New Combined SPAN Files**

DATE: Wednesday, August 12, 2009

This advisory provides additional information about the new combined SPAN® files, which contain data for NYMEX, COMEX, DME, CME, CBOT and OneChicago products.

Margin Rates & Rules in the New Combined SPAN Files

The new combined SPAN files use various features currently present in the CME/CBOT SPAN files, as well as new functionalities detailed below:

- Super Inter-commodity Spreads (Delta-based & Scanning-based)
- Calculation of Implied Volatility
- Decay of Price Scan Range (Performance Bond Requirement)

Super Inter-commodity Spreads (Delta-based & Scanning-based)

The new combined SPAN files make use of a feature of SPAN called **super-intercommodity spreading**. Simply put, super-intercommodity spreads are intercommodity spreads which are evaluated **first**, before either intra-commodity (calendar) spreads or normal inter-commodity spreads.

There are two types of super Inter-commodity spreads, delta-based and scanning-based, and both will be used.

Delta-based:

Delta-based super Inter-commodity spreads will be used for margining spread products against positions in their respective underlying products. An example is the spread between HK (New York Harbor Heating Oil Crack Spread Calendar Swaps) vs. HO (Heating Oil Futures) and CL (Light-Sweet Crude Oil Futures).

The spread formation process is identical to that for any regular inter-commodity spread at the specified credit rate for the spread.

Example:

1 Long HK 200909
1 Short HO 200909
1 Long CL 200909

Outright performance bond requirements:

HK 200909 = $3,500
HO 200909 = $6,500
CL 200909 = $5,750
Total = $15,750

Given a credit rate of 98%, Inter-commodity spread credits for combined commodities would be:

HK 200909 = $3,430
HO 200909 = $6,370
CL 200909 = $5,635
Total = $15,435

Therefore, the charge on the spread would be $315 [$15,750 - $15,435 = $315]

Scanning-based:

Scanning-based super inter-commodity spreads will be used for margining closely related physically-delivered and financially settled products.

An example would be NG (Henry Hub Natural Gas Futures) which are physically-delivered and NN (Henry Hub Swaps) which are financially settled.

Scanning-based spreads include a target leg which would be NG in this example. The performance bond requirement is aggregated to the target leg, using appropriate ratios to account for differing contract sizes and the credit rate.

Example:

1 Long NG 200909
4 Short NN 200909

The outright performance bond requirement for one NG 200909 futures contract is $5,000 and the outright performance bond requirement for one NN futures contract is $1,250.

The credit rate on the spread is applied as a haircut to the positions that gain in value during the analysis of risk. Given a performance bond requirement point equivalent decrease in the price of NG, a $5,000 loss would occur on the long 200909 NG contract and a gain of $5,000 would occur on the short 4 NN 200909 contracts. With a credit rate of 99%, the $5,000 loss on NG would be offset by a gain of $4,950 on NN:

[0.99 * ($5,000) = $4,950]

Therefore, the performance bond requirement for the spread would be $50 [$5,000 – $4,950 = $50].

As a result of the scanning spread being formed, all performance bond requirements and deltas in NN will be zeroed out.

Calculation of Implied Volatility

The same method will be used for determining implied volatilities for NYMEX and COMEX option products as is currently used for CME and CBOT products.

Namely, for each call/put pair at the same strike, the implied volatility will be calculated for the option in the pair that is out of the money. This volatility is then used for both options in the pair.

In other words, the implied volatility of the out-of-the-money option is applied to the in-the-money option.

Decay of Price Scan Range (Performance Bond Requirement)

Certain NYMEX products have price scan ranges (the core performance bond rate for a single futures contract) which decrease as you move through the front month. An example would be UF, the European Gas Oil contract, which is based on the average price of the remaining days as you move through the front month.

In the separate NYMEX SPAN files, this decay is based on a linear method, where the price scan range decreased by the same amount each day.

In the new combined SPAN files, the decay will be based, more appropriately, on the square root of the remaining time in the front month.

For example, in the separate NYMEX SPAN files, the following formula is currently used to calculate the decay of the performance bond requirement:

Decayed Price Scan Range = Undecayed Range *
(Number of remaining business days / Original number of business days)

In the new combined SPAN files, the formula will be:

Decayed Price Scan Range = Undecayed Range * Square root of (Remaining calendar days in the averaging period / Total calendar days in the averaging period)

*Example: The August 2009 Dubai Crude Oil Calendar Swap becomes the front month contract following the final settlement date of the July 2009 contract which is Thursday, August 7, 2009. On Friday, August 7, 2009 the 200908 contract has a full price scan range of $9,000. The final settlement date of the 200908 contract is September 8, 2009. Therefore, the decay begins on Monday, August 10, 2009 and continues until final settlement on September 8, 2009 (30 calendar days). As of the end of day on Monday, August 10, 2009, there are 29 calendar days remaining until final settlement and the performance bond requirement is $8,849. The calculation is [$9,000 * sqrt (29/30) = $8,849].*

For more information, please direct questions to the CME Group Risk Hotline at 312-648-3888.