

Advisory Notice

Clearing House

TO: Clearing Member Firms
Back Office Managers
Service Bureaus

FROM: Clearing House Department

ADVISORY #: 05-135

DATE: July 1, 2005

SUBJECT: Clearing Processing for Crush Spread Options

Introduction

The CBOT is preparing to introduce trading in crush spread options. This advisory provides information about clearing and bookkeeping processing for these new options, including enhancements to the SPAN file generically applicable to any options on futures spreads.

The crush spread options will use the value **31** as their clearing code. A typical crush spread option might be a July 2005 call, with a strike price of 0.50, with its underlying being the July 2005 crush spread. Exercising a long position in this call, means buying 1 July 2005 crush spread at the strike price, which in turn translates into buying 11 of the July 2005 soy meal futures, buying 9 of the July 2005 soy oil futures, and selling 10 of the July 2005 soybean futures.

So the crush spread options are in some ways analogous to CME's options on 5-year Eurodollar bundles. You can think of the option as an **option on a combination**, rather than an option on a future. The option has a single underlying – the crush spread combination – which in turn breaks out into its underlying legs.

It is possible for options on combinations to have strike prices, which are zero or negative. For CBOT's crush spread options when they are launched, however, strike prices will always be positive.

In doing bookkeeping processing for these options, firms have two challenges relating to option exercise and assignment: first, identifying what are the exact underlying futures for each crush spread, and in what ratio; and second, determining the exact leg prices to use for each such underlying future. First, we'll explain the business rules relating to these, and second, we'll explain how you can use data provided in the SPAN® file to obtain this information.

Other than exercise-and-assignment processing, there are no special requirements for crush spread options. In particular, we do not plan on using any special features of SPAN, such as super-intercommodity spreading, at launch time.

Identifying the underlyings for each crush spread

CBOT has specified that the underlyings of each crush spread purchased consist of buying **eleven** of the soy meal future, buying **nine** of the soy oil future, and selling **ten** of the soybean future. But you also need to know on which contract months. Here the rule is that the contract month of the crush spread matches the contract months of each underlying future, with the exception of October, November and December. For these:

- The underlyings of the October crush spread, are the October soy meal and soy oil futures, and the November soybean future.
- The underlyings of the December spread, are the **December** soy meal and soy oil futures, and the November soybean future.

To state it more briefly: the underlyings of the October crush are October meal and oil, versus November beans; the underlyings of the December crush are December meal and oil, versus November beans.

Determining the leg prices

The prices for these futures transactions created when an option on a crush spread option is exercised or assigned, are determined as follows (again using July 2005 as an example):

- Take the end-of-day settlement price for the July 2005 soy meal future, and round normally to the nearest 2.50. This is the price to use for the soy meal leg.
- Take the end-of-day settlement price for the July 2005 soy oil future, and round normally to the nearest 0.25. This is the price to use for the soy oil leg.
- Multiply the meal leg price by 0.022. Add to this, the product of the oil leg price times 0.11. Subtract the strike price. The result is the price to use for the soybean leg.

Firms will be able to use data contained in the daily CBOT-CME SPAN files to determine the underlying futures of each crush spread, and the leg prices to use for any option exercise into that crush spread. Firms may either use this data, or may program this logic themselves into their bookkeeping systems.

In the SPAN files

The product type for the crush spread options will be provided as **OOC** – option on combination – rather than the normal **OOF** (option on future.) Similarly, the underlying crush spread will have product type **CMB** rather than **FUT**.

The X, Y and Z record types, which provide information about options on combinations, will be provided for the crushes. They are located immediately prior to the type "B" records for the combined commodity. There will be a single **X** record, followed by a single **Y** record. The X record specifies the clearing product code for the crush combinations, and has a blank in the "combination margining method code" field, meaning that no special margin processing will be performed. The Y record provides the clearing product code for the crush options. (Both clearing product codes will be **31**.)

The Y record will be followed by a series of **Z** records, which specify the underlying legs of each crush combination purchased. Thus, there will be three records for each crush. Take for example, the three records for the December 05 crush. The first Z record will specify "buy 11 December soy meal", the second will specify "buy 9 December soy oil", and the third Z record will specify "sell 10 November soybeans." So this is what you'd get if you exercised a call option, or were assigned on a put option.

In order to provide the leg prices on the Z records, we have added four new fields at the end of the record:

- The **Leg Price Available Flag**, with a value of either **Y** (leg prices for this leg for the current day are available), or **N** (or any other value, meaning that leg prices are not available.)
- The **Leg Price** itself, which will be provided as zero if the Leg Price Available Flag is not set to Y. This will be formatted in exactly the same manner as settlement prices for that future.
- The **Leg Price Sign**, either **+** or **-**. All crush spread leg prices will be positive.
- The two-byte **Leg Price Usage Flag**, either **L**, **S+** or **S-**. **L** means that the value provided **is** the leg price to use. **S+** and **S-** mean that you take the value provided and either add or subtract the strike price, respectively, to obtain the leg price to use.

So for example for the crush spreads, the soy meal and soy oil legs will have **L** in this flag, meaning that the value provided is the value to use for the leg prices. The soybean leg will have **S-** meaning that you take the value provided and subtract the strike price from it in order to obtain the leg price value.

For the layout of the X, Y and Z records, including the enhancements to the "Z" records, please see www.cme-ch.com/span/spanl300.htm. In the XML-based SPAN files, analogous changes will be made.

TREX messages, the settlement price file, and the edit file

These formats do not distinguish between options on futures and options on combinations. The crush spread options will appear simply as normal calls and puts.

In FIXML

In FIXML, the fourth byte of the CFI code for an option specifies the type of the underlying. The crush spread options will have **C** in this value, meaning that the underlying is a combination. This byte is not required to be defined and firms may continue to simply put **X** in this position of the CFI code.

Impact on CME's Y5 options in the SPAN file

In the CBOT-CME SPAN files, currently the Y5 options, which are options on 5-year Eurodollar bundles, are treated as if they were ordinary options on futures. As part of the changes for the crush spread options, we will treat the Y5 options in the exactly analogous manner:

- They will appear as type **OOC**, with an underlying of type **CMB**, rather than OOF and FUT.
- X, Y and Z records will be provided, specifying no special margin processing.
- For each Y5 combination, 20 records will be provided, specifying each of the underlying futures of the 5-year bundle. The leg-price-available flag will always be **Y**, the value of the provided price will always be zero, and the leg-price-usage flag will be **S+**. In other words, the leg price is obtained by taking zero and adding the strike price to it, yielding the strike price.

Sample SPAN files, and implementation dates for SPAN file changes

A sample SPAN file showing crush spread options and the change to the Y5 options, will shortly be made available at ftp.cme.com/pub/span/data/ccl/test/crush.pa2.

In the near future, the files published daily in that "test" directory (for example, <ftp.cme.com/pub/span/data/ccl/test/ccl.s.pa2>) will be the actual CBOT-CME SPAN files, but with the changes to how the Y5 options are provided. Firms will be able to use these files to make sure that their applications are able to process the Y5 options, and subsequently the crush spread options when they are launched, with the above-described changes.

We will send an update to this advisory when the sample SPAN file for the crush spread options is available, and again when the sample files with the changes for the Y5 options, are available every day.