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May 7, 2004

Ms. Jean A. Webb
Office of the Secretariat
Commodity Futures Trading Commission
Three Lafayette Centre
1155 21st Street, NW
Washington, DC 20581

RE: Exchange Certification of Rule 582 Governing GLOBEX Switch Trade Matching Algorithm.
Submitted per Sec. 5c(c)(1) of the CEA and Regulation Sec. 40.6(a).
CME Submission # 04-042.

Dear Ms. Webb:

Pursuant to Section 5c(c) of the Commodity Exchange Act ("CEA") and Regulation §40.6 thereunder, Chicago Mercantile Exchange Inc. ("CME" or "Exchange") hereby certifies the the Exchange Rules governing the GLOBEX Switch Trade Matching Algorithm. The Exchange certifies that this action neither violates nor is inconsistent with any provision of the CEA or of the rules thereunder.

The GLOBEX Switch Trade Matching Algorithm ("Switch Trade Algorithm", or "Switch Algorithm") is intended for contract markets specifically designated by the Exchange. A market utilizing the Switch Algorithm shall be identified as a Switch Market, e.g. a Eurodollar Switch Market. While the algorithm can be applied to any futures contracts, it is anticipated that the Exchange will most likely deploy the algorithm in short-term interest rate futures markets, with a special daily listing of the Eurodollar futures being the candidate for the inaugural application[1]. In fact, a Switch Market in Eurodollars will appeal to the participants[2] of the equivalence in the Over-the-Counter market.

For the purpose of clarity, we shall describe the Switch Market using the Eurodollar futures as an example. A Switch Market is defined as a call market, where:

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[1] Please reference CME submission #04-041 for more information for the daily listing of the Eurodollar futures.

[2] It is expected that participants of the Switch Markets in Eurodollar futures, or other interest rate futures, will be large financial institutions or other entities with significant Interest Rate Swap portfolios. These entities participate in the Switch Market to eliminate certain residual risks in their Swap portfolios. They are likely to be large traders in the regular Eurodollar and other short term interest rate futures already.

a. A series of expirations for a specific contract are available for trading, e.g. 60 consecutive daily expirations of Three-Month Eurodollar futures;
b. For each session, all the trades of the same expiration shall be consummated at the same price, at the same time, e.g. a weekly trade matching session at 3 p.m. Chicago time on Wednesdays;
c. The prices at which trades are consummated are derived from an algorithm or formula based upon prevailing prices in related markets, e.g. interpolated yield curve based upon quarterly and serial Three-month Eurodollar Futures and other related markets;
d. For each session and for each account, each contract bought shall be accompanied by a sale of a contract with a different expiration available for trading for the session, and each contract sold shall be accompanied by a purchase of a contract with a different expiration, i.e. the outcome of the trade matching for every participant is calendar spreads[3] in daily Eurodollar futures.

The Switch Market in Eurodollars may operate as follows. For each trading session scheduled[4] for 3:00 p.m. Chicago time on a Wednesday, sixty consecutive daily expirations of Eurodollar futures shall be available for trading. GLOBEX electronic trading system begins accepting orders for the trading session at 5:00 p.m. on Tuesday. Since the prices at which the contracts are traded are determined by a pricing algorithm, the participants are required to indicate the buy/sell interest and the quantity for each contract expiration. The prices entered in the orders shall be replaced by the price determined by the pricing algorithm prior to the trade matching. Throughout the trading day on Wednesday, indicative prices for each contract based on the pricing formula shall be disseminated by the Exchange. At 2:45 p.m., or 15 minutes prior to the trade matching, the Exchange publishes the prices for each contract expiration at which the trades shall be consummated. Participants may modify, cancel or add to the existing orders subsequent to reviewing the published prices. At 3:00 p.m., the trade matching shall occur.

The Switch Market relies on a pricing algorithm or formula for determining the prices at which contracts are traded. The pricing algorithm relies on the fair market prices of a number of the contract in the series of contracts available for trading. For example, within the daily listings of Eurodollar futures, there are two or three contract expirations that coincide with the regular Quarterly and Serial Eurodollar futures. As such, the prevailing market prices for these contracts are readily available from the markets in the regular Quarterly and Serial Eurodollar futures. The prices of other related financial instruments with widely available market prices may also be referenced, e.g. spot 3-month Eurodollar Time Deposit rates. The pricing algorithm derives the prices of the intervening expirations relative to these contracts by means of a suitable interpolation method.

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[3] The calendar spreads of these daily expiring Eurodollar contracts are employed to hedge the "date mismatches" in an interest rate swap portfolio. In a swap portfolio, roughly offsetting swap agreements may not match up exactly in the floating interest rate "reset dates," resulting in the so-called "gap risks." This risk can be eliminated with an offsetting Eurodollar calendar spreads with the specific dates.

[4] Please note that the time schedule described herein is for illustrative purpose only. The Exchange shall communicate to the Commission the trading schedule prior to the launch of each instance of the Switch market.

This practice of relative pricing is a standard and widely accepted practice in the Over-the-Counter Interest Rate derivatives market, without which the pricing of these many similar financial instruments becomes unwieldy and impractical. The Exchange recognizes that the public acceptance of and participation in the Switch Market relies on a fair and reasonable pricing algorithm. Thus, the Exchange shall disclose to the public the pricing algorithm prior to the launch of such markets. Further, the Exchange may employ a third party for the actual calculation of the prices based on the pre-determined algorithms.

Following the conclusion of order entry, the Exchange shall perform trade matching based on the following criteria: the total number of contracts traded, aggregating across all expirations, shall be maximized, subject to the constraints that

- For each expiration, each participant/account can only be a buyer or a seller, not both;
- For each participant, each contract bought shall be accompanied by the sale of a contract of a different expiration. Similarly, each contract sold shall be accompanied by the purchase of a contract of a different expiration. i.e. the outcome shall be calendar spreads;
- If more than one possible allocation of contracts bought and sold amongst participants can achieve the maximum number of contracts traded, the allocation with the widest distribution of participation shall be chosen.

The text of the Exchange Rules governing the matching algorithm, including the interpretation of certain aspects of the Rules, is included below.

## CHAPTER 5 FLOOR PRIVILEGES – TRADING QUALIFICATIONS AND PRACTICES

### 582. GLOBEX SWITCH TRADE MATCHING ALGORITHM

The following Switch trade matching algorithm shall be applied to such markets as determined by the Exchange.

1. A Switch market is defined as a call market where:
    a. A series of expirations for a specific contract, e.g. Three-Month Eurodollar futures, are available for trading;
    b. For each session, all the trades of the same expiration shall be consummated at the same price, at the same time;
    c. The prices at which trades are consummated are derived from an algorithm or formula based upon prevailing prices in related markets, e.g. interpolated yield curve based upon quarterly and serial Three-month Eurodollar Futures and other related markets;

d. For each session and for each account, each contract bought shall be accompanied by a sale of a contract with a different expiration available for trading for the session, and each contract sold shall be accompanied by a purchase of a contract with a different expiration.

2. For the purpose of Rule 582, the Pricing Algorithm for a Switch market is defined as the algorithm or formula for determining the prices of each eligible contract for a Switch market trading session. Prior to operating a Switch market, the Exchange shall disclose the Pricing Algorithm and the method of determining the inputs to the Pricing Algorithm.

3. Order shall be good only during the specific trading session for which they are entered. Unexecuted orders and any unfilled residuals of partially filled orders shall be cancelled following the conclusion of the trade matching process.

   The Pricing Algorithm shall be used to identify a single contract price at which all executed orders for a particular contract expiration shall be filled. The Exchange shall disseminate the price of each contract expiration prior to the trade matching process by an interval X. Upon determination of prices for all contract expirations, valid orders are deemed to have bid and offer prices identical to the published prices as determined by the Pricing Algorithm. Order entry, modification and cancellation shall be allowed until the commencement of the trade matching process.

   The interval X and the price determination algorithm for each switch market shall be determined and published by the Exchange.

4. The trade matching process will employ the following mathematical algorithm to match orders to buy and orders to sell. The algorithm maximizes, for the entire set of eligible expirations, the total number of contracts traded, subject to the constraint that, for each account, the total number of contracts bought is equal to the total number of contracts sold. If there are multiple possible allocations of the long and short positions that maximize the total number of contracts traded, the allocation with the broadest distribution across accounts shall be utilized. See Interpretation of Rule 582 – GLOBEX SWITCH TRADE MATCHING ALGORITHM at the end of Chapter 5.

## INTERPRETATION OF RULE 582 – GLOBEX SWITCH TRADE MATCHING ALGORITHM

Bids or offers may be entered for all available contract expirations on behalf of an account during each trading session. If both bids and offers for the same contract expiration are entered on behalf of an account, the trade matching algorithm will net the offsetting bids and offers and recognize the net order.

Orders can be entered into GLOBEX during the pre-open period. A notification of receipt of such order shall be sent by GLOBEX indicating that the order has been accepted. GLOBEX will disregard any price associated with the order and substitute the price as determined for the specific expiration. Since all the outstanding orders for the same expiration carry the same price at the conclusion of order entry period, all trades for the same expiration will be consummated at the same price.

While the outcome of the trade matching process is a calendar spread, it is not necessary to enter matching buy and sell orders.

The following example demonstrates the outcome of the trade matching process. For illustrative purposes, assume that there are 4 separate accounts and 10 available contract expirations. The following table shows the outstanding orders for each account for each contract expiration. A positive number in the following table represents a bid and a negative number represents an offer. For example, for account 1, there is a bid for 98 contracts for expiration 1, a bid for 68 contracts for expiration 2, ..., an offer of 125 contracts for expiration 5, ..., and no outstanding order for expiration 10.

**Table: Summary of outstanding bids and offers**

| Expiration | Account 1 | Account 2 | Account 3 | Account 4 |
|---|---|---|---|---|
| 1 | 98 | -118 | 6 | -38 |
| 2 | 68 | 65 | -6 | -74 |
| 3 | 60 | 39 | -83 | 39 |
| 4 | 18 | 36 | 69 | -46 |
| 5 | -125 | -83 | 98 | 28 |
| 6 | 68 | -121 | -13 | -111 |
| 7 | 123 | 21 | -61 | -101 |
| 8 | 49 | -13 | 77 | -71 |
| 9 | 122 | -61 | 115 | -63 |
| 10 | 0 | 10 | 111 | -28 |

The trade matching algorithm will determine the distribution of contracts bought and sold such that the total number of contracts matched is maximized, and, for each account, the total number of contracts bought equals to the total number of contracts sold. The following table shows an admissible allocation that maximizes the objective. For example, Account 1 bought 64, 6, 13, 40 and 2 contracts of expiration 1, 3, 6, 7 and 9 respectively, and sold 125 contracts of expiration 5.

**Table: Summary of contracts bought and sold**

| Expiration | Account 1 | Account 2 | Account 3 | Account 4 |
|---|---|---|---|---|
| 1 | 64 | -70 | 6 | 0 |
| 2 | 0 | 26 | -6 | -20 |
| 3 | 6 | 39 | -83 | 38 |
| 4 | 0 | 36 | 0 | -36 |
| 5 | -125 | -1 | 98 | 28 |
| 6 | 13 | 0 | -13 | 0 |
| 7 | 40 | 21 | -61 | 0 |
| 8 | 0 | 0 | 0 | 0 |
| 9 | 2 | -61 | 59 | 0 |
| 10 | 0 | 10 | 0 | -10 |

If there are multiple admissible distributions of positions yielding the same total number of contracts matched, the algorithm will choose among the admissible distribution the one with the least total sum of squares of positions to achieve widest distribution of positions. For example, the sum of squares of the positions for account 1 is $64^2 + 6^2 + 125^2 + 13^2 + 40^2 + 2^2$. The total sum of squares of positions shall be the sum of squares of the positions for all accounts under the distribution.

The algorithm shall not recognize any time priority for purposes of filling orders.

[*The remainder of this Chapter remains unchanged.*]

Please do not hesitate to contact Mr. Richard Co at 312-930-3227 or rco@cme.com if any questions arise during the review of this submission. Please reference our CME Submission #04-042 on all future correspondence for this submission.

Sincerely,

John W. Labuszewski, Director
Research & Product Development

CC: Mr. Thomas M. Leahy Jr., Mr. Steven B. Benton, Mr. David Van Wagner,
CFTC Division of Market Oversight