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Trading – Interest Rate Derivatives Trading – Equity and Index Derivatives Back-office – Futures Back-office - Options Technology Regulation

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NEW AUTOMATED DAILY SETTLEMENT PRICING ALGORITHM FOR THE THREE-MONTH CANADIAN ACCEPTANCE FUTURES CONTRACT (BAX)

Bourse de Montréal Inc. (the Bourse) has developed a software program that will perform the daily settlement price procedure for the Three – Month Canadian Bankers' Acceptance Futures contract (BAX). Formerly, the daily settlement price procedure for the BAX was completed manually by market officials working in the Market Monitoring Department. In an effort to increase the speed, consistency and efficiency of the daily settlement price procedure, a daily settlement pricing algorithm has been developed. This new procedure will be effective as of January 3, 2006.

Approved participants will find a full description of the new automated pricing algorithm in section 4 of the "Daily Settlement Price Procedures for Futures Contracts and Options on Futures Contracts" included with this circular. Please keep a copy of the amended Procedures for your files.

For further information, please contact the Market Monitoring Department at (514) 871-7871 or 1-888-693-6366 or by email at monitoring@m-x.ca

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Circular no.: 199-2005

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DAILY SETTLEMENT PRICE PROCEDURES FOR FUTURES CONTRACTS AND OPTIONS ON FUTURES CONTRACTS

1 RULE

Article 6390 of the Rules of Bourse de Montréal Inc. (the Bourse) stipulates that:

"The daily settlement price or the closing quotation are determined according to the procedures established by the Bourse for each derivative instrument."

2 SUMMARY

Futures Contract and Options on Futures Contract Daily Settlement Prices

These markets use an average price during the last minutes of trading to establish a single settlement price. These calculations are executed manually by market officials or by an automated algorithm, as the case may be, using preestablished guidelines for each product.

3 OBJECTIVES

The objectives of establishing daily settlement prices are:

- Ensure a fair and orderly market close and pricing for approved participants so that they can properly mark-to-market their positions for margin calculations and back office processing, including clearing and settlement of their transactions ;
- Ensure that the Canadian Derivatives Clearing Corporation (CDCC) and all market participants are informed of the settlement prices.

4 DESCRIPTION

4.1 THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES CONTRACTS (BAX)

The daily settlement price procedure for the Three – Month Canadian Bankers' Acceptance Futures contract (BAX) is executed by a fully automated pricing

algorithm which utilizes the parameters described in sections 4.1.1, 4.1.2 and 4.1.3 to ensure accuracy in the process.

4.1.1 Identification of the front quarterly contract month

The automated daily settlement pricing algorithm identifies the front quarterly contract month from the first two quarterly contract months. The front quarterly contract month is the one, among the first two quarterly contract months, that has the largest open interest.

4.1.2 Algorithm utilized for the daily settlement price of the front quarterly contract month

Once the front quarterly contract month has been identified, the automated daily settlement price algorithm will determine the settlement price of the front quarterly contract month according to the following priorities: first, it will use the last three minute average price of trades on that contract month (trades for a minimum of 100 contracts); if no such average price is available, it will then use the last 30 minute average price of trades on that contract month (trades for a minimum of 100 contracts) and if no such average price is yet available, then the least variation between the bid or offer price and the previous day settlement price will be used.

Once the daily settlement price for the front quarterly contract month has been established, it will be verified against the booked orders and if there is a better outright bid or offer, the latter will take precedence over the daily settlement price calculated on the basis described in the paragraph above.

4.1.3 Procedure for the daily settlement price of the remaining BAX contract months

Upon completion of the aforementioned steps, the automated daily pricing algorithm will then establish the settlement prices for all other BAX contract months sequentially. The daily settlement prices of all other BAX contract months will be based first on the last three minute outright market and strategy combination traded average or, if no average price can be determined in this manner, the least variation between the bid and offer for booked orders.

4.2 S&P CANADA 60 INDEX FUTURES (SXF)

The settlement price shall be the weighted average of all trades during the closing range. The closing range is defined as the last one minute of the trading session for all contract months.

4.2.1 MAIN PROCEDURE

• Booked Orders

If there is an unfilled order with a higher bid or lower offer in an outright month, this bid or offer will override the settlement price obtained from the weighted average. It has to have been posted for 20 seconds or longer prior to the close. The size must be a total of 10 contracts or more.

• Last Trade

If there are no trades in the last one minute of trading, then the last trade will be taken into account while still respecting posted bids and offers in the market.

4.2.2 FIRST ANCILLARY PROCEDURE

When two contract months and the spread are trading (quarterly calendar roll), the ancillary procedure in 4.2.2 will apply.

- The front month must be settled first (the establishment of the front month is based on the month with the greatest open interest).
- The spread between the two contract months must be settled next by reviewing the last one minute average, and by referring to the trades in the previous 10 minutes.
- The settlement for the back month or far month is obtained by the difference between the front month and the value of the spread.

4.2.3 SECOND ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.2.1 and the ancillary procedure in 4.2.2, the ancillary procedure in 4.2.3 will apply.

Market officials will post a settlement price that will respect the same differential that was applied on the previous day settlement. The settlement price will be adjusted accordingly to respect that contract's previous settlement price.

Market officials will register in the "daily settlement price record" the criteria considered for determining the settlement price.

4.2.4 THIRD ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.2.1, the ancillary procedure in 4.2.2 and the ancillary procedure in 4.2.3, the following ancillary procedure in 4.2.4 will apply.

In this situation, market officials establish the settlement price based on available market information. They may also disregard any event (trade, bid or offer) which occurs near the end of the regular trading session and which is not compatible with a given settlement price.

Market officials will register in the "daily settlement price record" the criteria considered for determining the settlement price.

4.3 TEN-YEAR GOVERNMENT OF CANADA BOND FUTURES (CGB)

4.3.1 MAIN PROCEDURE

The settlement price shall be the weighted average of all trades during the closing range. The closing range is defined as the last one minute of the trading session for all contract months.

• Booked Orders

If there is an unfilled order with a higher bid or lower offer in an outright month, this bid or offer will override the settlement price obtained from the weighted average. It has to have been posted for 20 seconds or longer prior to the close. The size must be a total of 10 contracts or more.

• Last Trade

If there are no trades in the last one minute of trading, then the last trade will be taken into account while still respecting posted bids and offers in the market.

4.3.2 FIRST ANCILLARY PROCEDURE

When two contracts months and the spread are trading (quarterly calendar roll), the ancillary procedure in 4.3.2 will apply.

- The front month must be settled first (the establishment of the front month is based on the month with the greatest open interest).
- The spread between the two contract months must be settled next by reviewing the last one minute average and by referring to the trades in the previous 10 minutes.
- The settlement for the back month or far month is obtained by the difference between the front month and the value of the spread.

4.3.3 SECOND ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.3.1 and the ancillary procedure in 4.3.2, the ancillary procedure in 4.3.3 will apply.

Market officials will post a settlement price that will respect the same differential that was applied on the previous business day. The settlement price will be adjusted accordingly to respect that contract's previous settlement price.

4.3.4 THIRD ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.3.1, the ancillary procedure in 4.3.2 and the ancillary procedure in 4.3.3, the following ancillary procedure in 4.3.4 will apply.

In this situation, market officials establish the settlement price based on available market information. They may also disregard any event (trade, bid or offer) which occurs near the end of the regular trading session and which is not compatible with a given settlement price.

Market officials will register in the "daily settlement price record" the criteria considered for determining the settlement price.

4.4 OPTIONS ON THREE – MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES (OBX)

4.4.1 MAIN PROCEDURE

4.4.1.1 Weighted Average

The settlement price shall be the weighted average of the prices traded in the closing range (last minute of trading). If there is at the close, a higher bid or lower offer than the settlement price so obtained, that bid or offer shall be the settlement price.

4.4.1.2 Last Trades

If no trade occurs during the closing range, the market officials will consider transactions executed during the last 30 minutes of trading. Also, the bids and offers should be for a minimum of 25 contracts and should be posted at least one minute before the close to be considered.

If no trade occurs in the closing range (or in the last 30 minutes of trading), the settlement price shall be the theoretical price generated by the Bourse (as described in section 4.4.2). If there is at the close a higher bid or lower offer than the settlement price so obtained, that bid or offer shall be the settlement price.

4.4.2 ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.5.1, the following ancillary procedure in 4.5.2 will apply.

The settlement price shall be determined by inserting the following parameters into a standard option pricing model (Black & Scholes):

Price of the underlying:

• The Bourse will capture the settlement price of the underlying BAX futures contract. This will be the price of the underlying.

Interest rate:

• The interest rate used will be the rate implied by the settlement price of the BAX futures contract nearest to expiration.

Volatility:

• The Bourse will use the implied volatility (per contract month, put and call) obtained from the acting Market Maker. The same volatility is applied for the calls and for the puts.

The strike price of the options' series and the time to expiration are the other parameters that will be inserted into the model.

In determining the closing price, the Bourse shall take into account the information provided by the spread market, for example; if the SEP 9200 straddle is 98 bid, the total of the closing prices of these two series should not be inferior to 98.

4.5 30-DAY OVERNIGHT REPO RATE FUTURES (ONX)

4.5.1 Main Procedure

The settlement price shall be the weighted average of all trades during the closing range. The closing range is defined as the last three minutes of the trading session for all contract months.

4.5.1.1 Weighted Average of closing range trades

The weighted average will be derived from trades that occurred in the outright months in the closing range. The total volume traded in each outright month must be for 25 or more contracts in each of the months.

4.5.1.2 Booked Orders

If there is an unfilled order with a higher bid price or lower offer price in a month, this bid or offer will override the settlement price obtained from the weighted average. It has to have been posted for 15 seconds or longer prior to the close. The size must be a total of 25 or more contracts in each of the months.

4.5.1.3 Remaining Balances of Booked Orders

In the case of a booked order as stipulated in paragraph 4.5.1.2 above, which would be only partially executed, the trades during the closing period as well as the remaining balance of booked orders will be considered to establish the settlement price. Example 1: If there is a booked order for 25 ONX contracts at 97.92 and of those 15 contracts are executed, the 10 remaining contracts, if they are still present on the market at the same price, will be considered to establish the required minimum of 25 contracts.

Example 2: If there is a trade of 15 ONX contracts during the closing period at 97.92 and there is a booked order bid for 10 ONX contracts at 97.91 (respected time limit), the bid will be considered in addition to the trades in the closing period to establish a settlement price.

4.5.1.4 Strips and Spreads

All trades and unfilled booked orders for strips and spreads related to the expiry months will be ignored.

4.5.2 FIRST ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.5.1, the ancillary procedure 4.5.2 will apply.

4.5.2.1 Weighted Average of trades on strategies

The settlement price shall be the weighted average of the trades on the strategies traded during the last five minutes provided the volume for the strategy taken into account was of 25 or more contracts.

4.5.2.2 Booked Orders

If there is an unfilled order with a higher bid or lower offer, this bid or offer will override the settlement obtained from the weighted average described in 4.5.2.1. It has to have been posted for three minutes or longer prior to the close and the size must be for a total of 25 or more contracts.

4.5.3 SECOND ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.5.1 and the ancillary procedure in 4.5.2, the ancillary procedure in 4.5.3 will apply.

4.5.3.1 Differential with the previous contract month's settlement price

The settlement price will be defined by a price that reflects an appropriate differential with the settlement price of the previous contract month always starting with the contract month closest to expiry.

4.5.3.2 Conflicts between spreads

If two spreads are in conflict, the calendar spread closest to expiry will have priority.

4.5.4 THIRD ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.5.1, the ancillary procedure in 4.5.2 and the ancillary procedure in 4.5.3, the ancillary procedure in 4.5.4 will apply.

In this situation, market officials establish the settlement price based on the available market information. They may also disregard any event (trade, bid or offer) which occurs near the end of the regular trading session and which is not compatible with a given settlement price.

Market officials will register in the "daily settlement price record" the criteria considered for determining the settlement price.

4.6.1 MAIN PROCEDURE

The settlement price shall be the weighted average of all trades during the closing range. The closing range is defined as the last three minutes of the trading session for all contracts months.

• Booked Orders

If there is an unfilled order with a higher bid or lower offer in an outright month, this bid or offer will override the settlement price obtained from the weighted average. It has to have been posted for 30 seconds or longer prior to the close. The size must be a total of 20 contracts or more.

• Remaining Balances of Booked Orders

In the case of a booked order as stipulated in paragraph above which would only be partially executed during the closing period and if no other trade has occurred during the closing period, the remaining balance will be considered to establish the closing price.

In the absence of average during the closing range, the reference period will be extended to the last 10 minutes of the trading session.

4.6.2 FIRST ANCILLARY PROCEDURE

When two contracts months and the spread are trading (quarterly calendar roll), the first ancillary procedure will apply.

The front month must be settled first (the establishment of the front month is based on the month with the greatest open interest).

The spread between the two contracts months must be settled next by reviewing the last three minutes average and by referring to the trades in the previous 10 minutes.

• Booked Orders

If there is an unfilled order with a higher bid or lower offer in an outright month, this bid or offer will override the settlement price obtained from the weighted average. It has to have been posted for 30 seconds or longer prior to the close. The size must be a total of 20 contracts or more.

• Remaining Balances of Booked Orders

In the case of a booked order as stipulated in paragraph above which would only be partially executed during the closing period and if no other trade has occurred during the closing period, the remaining balance will be considered to establish the closing price.

The settlement for the back month is obtained by the difference between the front month and the value of the spread.

4.6.3 SECOND ANCILLARY PROCEDURE

In the absence of trading during the last 10 minutes of the trading session, the second ancillary procedure will apply.

The settlement price for the front month will be the median of the market posted at the closing of the market. Bids and offers have to have been posted for 30 seconds or longer prior to the close and the size must be for a total of 20 contracts or more.

The value of the spread will be either the settlement price of the previous trading day or the weighted average of all trades during the closing range as defined above in the first ancillary procedure.

The settlement for the back month is obtained by the difference between the front month and the value of the spread.

4.6.4 THIRD ANCILLARY PROCEDURE

In the absence of the items required to apply the previous procedures, the third ancillary procedure will apply.

In this situation, market officials establish the settlement price based on available market information. They may also disregard any event (trade, bid or offer) which occur near the end of the regular trading session and which is not compatible with a given settlement price.

Usually, the settlement price for the back month is always adjusted depending on the settlement prices obtained for the front month and the spread.