CIRCULAR 066-18
May 17th, 2018

REQUEST FOR COMMENTS

AMENDMENTS TO THE DAILY SETTLEMENT PRICE PROCEDURES FOR FUTURES CONTRACTS AND OPTIONS ON FUTURES CONTRACTS

The Rules and Policies Committee of Bourse de Montréal Inc. (the "**Bourse"**) has approved amendments to the *Daily settlement price procedures for futures contracts and options on futures contracts* of the Bourse in order to adapt the daily settlement price calculation methodology for S&P/TSX Index futures.

Comments on the proposed amendments must be submitted at the latest on **June 22nd, 2018**. Please submit your comments to:

Me Alexandre Normandeau
Legal Counsel
Bourse de Montréal Inc.
Tour de la Bourse
P.O. Box 61, 800 Victoria Square
Montréal, Québec H4Z 1A9
E-mail: legal@tmx.com

A copy of these comments shall also be forwarded to the *Autorité des marchés financiers* (the "**Autorité**") to:

Me Anne-Marie Beaudoin
Corporate Secretary
Autorité des marchés financiers
800 Victoria Square, 22nd Floor
P.O. Box 246, Tour de la Bourse
Montréal (Québec) H4Z 1G3
E-mail: consultation-en-cours@lautorite.qc.ca

Please note that comments received by one of these recipients will be transferred to the other recipient and that the Bourse may publish a summary of such comments as part of the self-certification process concerning this file. Unless specified otherwise, comments will be published anonymously by the Bourse.

Appendices

You will find in the appendices an analysis as well as the text of the proposed amendments. The implementation date of the proposed amendments will be determined by the Bourse, in accordance with the self-certification process as established by the *Derivatives Act* (CQLR, chapter I-14.01).

Process for Changes to the Rules

The Bourse is authorized to carry on business as an exchange and is recognized as a self-regulatory organization by the Autorité. The Board of Directors of the Bourse has delegated to the Rules and Policies Committee of the Bourse its powers to approve and amend the Rules, the Policies and the Procedures, which are thereafter submitted to the Autorité in accordance with the self-certification process as determined by the *Derivatives Act* (CQLR, chapter I-14.01).

AMENDMENTS TO THE DAILY SETTLEMENT PRICE PROCEDURES FOR FUTURES CONTRACTS AND OPTIONS ON FUTURES CONTRACTS

TABLE OF CONTENTS

I. SUMMARY

Bourse de Montréal Inc. (hereinafter the “Bourse”) proposes to amend its *Daily settlement price procedures for futures contracts and options on futures contracts* (hereinafter the “Settlement Procedures”) for the purpose of adapting the daily settlement price calculation methodology for S&P/TSX Index futures (the “Index futures”), provided that the Bourse is planning to extend the regular trading hours of these products.

II. ANALYSIS

a. Background

Subject to the self-certification of the amendments proposed hereunder and to certain regulatory filings, the Bourse is planning to extend the regular trading session (currently from 9:30 am to 4:15 pm) for its S&P/TSX index futures by closing the trading session on these products at 4:30 pm instead of 4:15 pm.

Such a modification to the regular trading hours requires the Bourse to modify its Settlement Procedures to adapt the window period used for the calculation of the daily settlement price of these Index futures. Essentially, the Bourse would propose to add 15 minutes of extra trading time for the Index futures while having the daily settlement price calculated using the VWAP (“volume weighted average price”) of the trades between 3:59 pm and 4:00 pm.

At the present time there are nine S&P/TSX Index futures listed on the Bourse:

S&P/TSX 60 Index Standard Futures (SXF)
S&P/TSX 60 Index Mini Futures (SXM)
S&P/TSX Composite Index Mini Futures (SCF)
S&P/TSX Global Gold Index (SXA)
S&P/TSX Capped Financials Index (SXB)
S&P/TSX Capped Information Technology Index (SXH)
S&P/TSX Composite Index Banks (Industry Group) (SXK)
S&P/TSX Capped Utilities Index (SXU)
S&P/TSX Capped Energy Index (SXY)

b. Description and Analysis of Market Impacts

The rationale for extending the trading session is due to market participants’ demand. Essentially, market participants have asked that the Bourse extend the regular trading hours of the aforementioned products to allow them more time to rebalance their portfolios after the underlying cash markets close. Furthermore, it would allow them to react to any impactful news that is released after the cash market close.

Consequently, the Bourse plans to make some operational changes with respect to the calculation of daily settlement prices of Index futures, which changes should promote price transparency and market integrity. The proposed changes are enumerated below.

Currently, the settlement price for each of the Index futures listed above is calculated using market activity between 4:14 pm and 4:15 pm. The Bourse's Settlement Procedures state that *"The settlement price shall be the weighted average of all trades during the closing range. The closing range is defined as the* *last minute of the trading session* *for all contract months"*. Should the Bourse extend the trading hours of the Index futures as planned, the Procedures would currently require Market Supervisors from the Market Operations Department to use trade data between 4:29 pm and 4:30 pm to calculate daily settlement prices for each of these Index futures.

The issue with the current timelines is that the underlying index for each of the Index futures ceases to calculate the index price at 4:00 pm in conjunction with the closing of the stock market on which the index constituents are listed. Furthermore, trade activity between 4:29 - 4:30 is expected to be marginally less important as the underlying index is no longer quoting and the only transactions that may occur are expected to be related to portfolio rebalancing. As a result this leaves the determination of the daily settlement price vulnerable should a market participant try to manipulate the settlement price of the futures contracts. To a much lesser degree this is also the case in the Bourse's current trading environment as the Bourse uses trade activity between 4:14 pm and 4:15 pm to calculate daily settlement prices.

Advancing the Daily Settlement price Calculation to 4:00 pm

The Bourse proposes to advance the time at which daily settlement prices are calculated to 4:00 pm (from 4:15 pm). As a result, the daily settlement price calculation would be based on market activity between 3:59 pm - 4:00 pm. The advantages of this change are twofold;

1. This change would foster a more transparent and granular settlement price that is representative of actual market conditions at the time of the settlement price calculation because the calculation period of the futures contract and would coincide with the closing time of the underlying index.
2. Any attempts at market manipulation on the futures contract would be mitigated by arbitrageurs who would exploit any opportunity and promptly eliminate the anomaly.

Furthermore, the end of day statistics presented in the table below clearly demonstrate that the closing range volume (1 minute prior to the official closing time) is greater at 4:00 pm than it is at 4:15 pm. On average the closing range volume at 4:00 pm is six times greater than the closing range volume at 4:15 pm. This can be explained by the fact that approved participants are hedging the positions in the constituents of the S&P/TSX60 Index that they acquire as the close of the underlying market approaches. Once the market for those instruments closes the need to hedge diminishes markedly. Therefore, based on what has been presented, there is a great deal of evidence to suggest that advancing the daily settlement price calculation time from 4:15 pm to 4:00 pm would be beneficial to the market.

Total Closing Range Volume at 4:15 pm vs. 4:00 pm for the SXF - 2017

Month	16:15	16:00	Ratio 16:00/16:15
January	2,360	11,055	5
February	2,057	12,492	6
April	2,355	13,442	6
May	3,991	12,950	3
July	1,081	10,087	10
August	1,319	12,378	9
November	1,619,	11,634	7
December	2,360	11,823	6
Average	**2,108**	**11,983**	**6**

c. Comparative Analysis

An overview of the settlement rules and procedures on international exchanges (for comparable products) is provided in the table below[1].

Exchange	Product	Cash market closing time	Index future settlement time	Window period of the VWAP	Duration of the VWAP
CME	S&P500	4:00 pm	4:15 pm	4:14:30-4:15:00	0.5 minutes
NSE	NIFTY50	3:30 pm	3:30 pm	3:00:00-3:30:00	30 minutes
JPX	Nikkei 225	3:00 pm	3:15 pm	3:10:00-3:15:00	5 minutes
EUREX	DAX	5:30 pm	5:30 pm	5:29:00-5:30:00	1 minute
ASX	S&P/ASX 200	4:00 pm	4:30 pm	4:29:00-4:30:00	1 minute

[1] As per the Exchanges' websites.

MX (as proposed)	S&P/TSX60	4:00 pm	4:00 pm	3:59:00-4:00:00	1 minute

CME termination of trading for the SP&500 contracts happens 15 minutes after the closing of the NYSE cash market at 4:00 pm ET time. The daily settlement price is calculated using the VWAP of all trades of the designated lead month contracts executed in the full-sized futures contract on the trading floor and in the E-mini futures contract executed on CME Globex from 4:14:30 pm to 4:15:00 pm Eastern Time ("ET").

At EUREX, the daily settlement price of the DAX future contract is calculated using the volume-weighted average price ("VWAP") of all trades of the designated lead month contracts executed on the last 1 minute of trading from 5:29:00 pm to 5:30:00 pm Central Europe Time ("CET") while the cash market at XETRA closes at 5:30:00 pm ("CET")

In conclusion, some exchanges close/daily-settle their future index contracts at the same time than the cash market closes, while others have longer derivative sessions (ranging from an extra 15-30 minutes) with the close/settlement occurring after the end of the regular cash market. The Bourse proposes a hybrid solution between those two distinct approaches, benefiting from the best practices followed comparable international exchanges.

d. Proposed Amendments

See attached modified Procedures.

III. AMENDMENT PROCESS

The amendment process was initiated by the desire to extend the trading hours of the regular trading session of the Bourse's Index futures to close at 4:30 pm, which would require modifications to the settlement Procedures. A consultation process was already conducted to gauge participant interest and revealed such a move could prove beneficial as it offers the Canadian marketplace increased access to risk mitigating tools.

IV. IMPACTS ON TECHNOLOGICAL SYSTEMS

The proposed amendments should have no impact on the Bourse's, CDCC's, approved participants' or ISV's technological systems.

V. OBJECTIVES OF THE PROPOSED AMENDMENTS

The objective of the proposed amendments is to minimize the impacts caused by the planned modification to trading hours of Index futures on the daily settlement prices calculation for such products. The new daily settlement price calculation will enhance transparency and the price discovery mechanism of the listed futures. It will allow the Bourse to align its settlement calculation with the closing of the cash market at TSX thereby improving operational efficiency, reducing market uncertainty at a time when markets are prone to inefficiencies due to diminishing liquidity. Finally it will render daily settlement price determination of the futures contracts more representative of actual market conditions.

VI. PUBLIC INTEREST

The Bourse considers the objectives described above of enhancing the transparency and price discovery inherent in listed futures markets, making the daily settlement price determination more transparent and representative of actual conditions and increased access to risk management tools to be in the interest of the public.

VII. EFFICIENCY

By aligning the daily settlement price for all Index Futures with the closing of the cash market, indexers will have their exposure to tracking error reduced, fostering a more efficient and attractive market.

VIII. PROCESS

The proposed amendments will be presented for approval to the Rules and Policies Committee of the Bourse and will then be submitted to the *Autorité des marchés financiers* (*AMF*) for self-certification purposes. These modifications will also be transmitted to the Ontario Securities Commission (OSC) for informational purposes.

IX. ATTACHED DOCUMENTS

Proposed amendments to the Procedures.

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 CONTRACTS AND OPTIONS ON FUTURES CONTRACTS DAILY SETTLEMENT PRICES

- These markets use the average price during the last minutes of trading or other calculation methods, as specified for each instrument in the following procedures, so as to establish a single settlement price. These calculations are executed manually by market officials or, as the case may be, by an automated algorithm using pre-established guidelines for each product.

- The prices at which block trades, Exchange for Physical (EFP), Exchange for Risk (EFR) or Substitution transactions are arranged shall not be used to establish the open, high, low or daily settlement price.

3. OBJECTIVES

The objectives of establishing daily settlement prices are to:

- 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 the 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.

DEFINITIONS:

"Regular orders": Orders routed by approved participants to the Montréal Exchange trading system.

"Implied orders": Orders generated by the implied pricing algorithm (using regular orders) and registered in the order book by the trading engine.

"Minimum Threshold": The applicable threshold for BAX will be:

- 150 contracts for the first four quarterly contract months ("whites");
- 100 contracts for quarterly contract months 5 to 8 ("reds"); and
- 50 contracts for quarterly contract months 9 to 12 ("greens").

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 and the required market information. In the absence of both these criteria together, then the front quarterly contract month shall be determined by market officials based on available market information.

4.1.2 ALGORITHM UTILIZED FOR THE DETERMINATION OF 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 weighted average price of cumulated trades that meet the Minimum Threshold, during the last three minute prior to 3:00pm, or prior to 1:00pm on early closing days, on that contract month; if no such average price is available, it will then use the weighted average price of cumulated trades for a total equal to the Minimum Threshold on that contract month for a period not exceeding the last 30 minutes prior to 3:00pm, or prior to 1:00pm on early closing days. Trades resulting from both regular and implied orders will be used in the process. If no such average price is yet available, then the least variation between the bid or offer price that is not as a result of implied orders and the previous day settlement price will be used.

The settlement price must be within the bid/offer price of the individual contract provided that the bid or offer meets the Minimum Threshold of volumes required.

All volumes and orders on a spread will be weighted at 50% relative to the orders and volumes on individual contracts, whereas a butterfly spread will be weighted at 25% relative to the orders and volumes on individual contracts.

4.1.3 PROCEDURE FOR THE DETERMINATION OF 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 (resulting from regular and implied orders) prior to 3:00pm, or prior to 1:00pm on early closing days, and strategy combination traded weighted average or, if no weighted average price can be determined in this manner, the least variation between the bid or offer for booked orders.

The settlement price must be within the bid/offer price of the individual contract provided that the bid or offer meets the Minimum Threshold of volumes required.

All volumes and orders on a spread will be weighted at 50% relative to the orders and volumes on individual contracts, whereas a butterfly spread will be weighted at 25% relative to the orders and volumes on individual contracts.

4.1.4 ANCILLARY PROCEDURE

In the absence of any required items to apply the aforementioned procedure, market officials will establish the settlement price based on available market information. They may also disregard any event (trade, bid or offer) which occurs close to 3:00pm, or close to 1:00pm on early closing days, and which is not compatible with a given settlement price.

In this situation, market officials will keep a record of the criteria used to establish the settlement price.

4.2 FUTURES CONTRACTS ON S&P/TSX INDICES AND ON THE FTSE EMERGING MARKETS INDEX

The settlement price shall be the weighted average of all trades during the ~~closing~~ calculation ~~range~~period, which ranges from 3:59pm to 4:00pm ~~. The closing range is defined as the last minute of the trading session~~ for all contract months. In the case of mini futures contracts on S&P/TSX indices, the settlement price shall be the same as the standard futures contracts on S&P/TSX indices when such standard futures contracts exist.

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. The order must have been posted for 20 seconds or longer prior to the close and its size must be for a total of 10 contracts or more.

- **Last trades**

  If there are no trades in the ~~last minute of trading~~calculation period, then the last trade before the calculation period 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 of this section 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 taking into account the ~~last minute~~ average trading price of the calculation period and by examining the trades executed during the previous 10 minutes.
- The settlement price for the back month or far month is obtained by the difference between the front month settlement price 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 following ancillary procedure will apply.

Market officials will post a settlement price that will reflect 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.

4.2.4 THIRD ANCILLARY PROCEDURE

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

In this situation, market officials will 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.

In this situation, market officials will keep a record of the criteria used to establish the settlement price.

4.3 GOVERNMENT OF CANADA BOND FUTURES CONTRACTS

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 minute of trading prior to 3:00pm, or prior to 1:00pm on early closing days, 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. This order must have been posted for 20 seconds or longer prior to 3:00pm, or prior to 1:00pm on early closing days, and its size must be for 10 contracts or more.

- **Last trades**

  If there are no trades in the last 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 contract months and the spread are trading (quarterly calendar roll), the following 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 contract months must be settled next by taking into account the last minute average trading price prior to 3:00pm, or prior to 1:00pm on early closing days, and by examining the trades executed during the previous 10 minutes.
- The settlement price for the back month or far month is obtained by the difference between the front month settlement price 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 following ancillary procedure will apply.

Market officials will post a settlement price that will reflect 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 and the ancillary procedures in 4.3.2 and 4.3.3, the following ancillary procedure will apply.

In this situation, market officials will establish the settlement price based on available market information. They may also disregard any event (trade, bid or offer) which occurs close to 3:00pm, or close to 1:00pm on early closing days, and which is not compatible with a given settlement price.

In this situation, market officials will keep a record of the criteria used to establish the settlement price.

4.4 OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES CONTRACTS

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 prior to 3:00pm, or prior to 1:00pm on early closing days). 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 prior to 3:00pm, or prior to 1:00pm on early closing days. Also, to be considered, the bids and offers shall be for a minimum of 25 contracts and shall have been posted at least one minute before 3:00pm, or before 1:00pm on early closing days, to be considered.

If no trade occurs in the closing range (or in the last 30 minutes of trading prior to 3:00pm, or prior to 1:00pm on early closing days), the settlement price shall be the theoretical price calculated 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 4.4.1, the following ancillary procedure 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, for puts and calls) obtained from the acting Market Maker. The same volatility will be applied for both calls and 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 posted strategy, 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 CONTRACTS (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 trading prior to 3:00pm, or prior to 1:00pm on early closing days, 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 during the closing range. The total volume traded in each outright month must be for 25 or more contracts.

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. This order must have been posted for 15 seconds or longer prior to 3:00pm, or prior to 1:00pm on early closing days, and its size must be for a total of 25 or more contracts in each of the months.

4.5.1.3 Remaining balances of booked orders partially executed at the close

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 15 of those 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 (respecting the required 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 any 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 following ancillary procedure 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 of trading prior to 3:00pm, or prior to 1:00pm on early closing days, 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 3:00pm, or prior to 1:00pm on early closing days, and the size must be for 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 following ancillary procedure 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 and the ancillary procedures in 4.5.2 and 4.5.3, the following ancillary procedure will apply.

In this situation, market officials will establish the settlement price based on the available market information. They may also disregard any event (trade, bid or offer) which occurs close to 3:00pm, or close to 1:00pm on early closing days, and which is not compatible with a given settlement price.

In this situation, market officials will keep a record of the criteria used to establish the settlement price.

4.6 FUTURES CONTRACTS ON CARBON DIOXIDE EQUIVALENT (CO_2e) UNITS

4.6.1 MAIN PROCEDURE

The settlement price shall be the weighted average of all traded prices during the closing range. The closing range is defined as the last fifteen minutes of trading prior to 3:00pm, or prior to 1:00pm on early closing days, for all contract expiries.

- **Booked orders**

  If there is an unfilled order with a higher bid or lower offer in a particular contract expiry, this bid or offer will override the settlement price obtained from the weighted average. This order must have been posted for 20 seconds or longer prior to 3:00pm, or prior to 1:00pm on early closing days, and its size must be for 10 contracts or more.

- **Last trades**

  If there are no trades in the last fifteen minutes of trading prior to 3:00pm, or prior to 1:00pm on early closing days, then the last trade will be taken into account while still respecting posted bids and offers in the market.

4.6.2 FIRST ANCILLARY PROCEDURE

When two contracts expiries and the spread are trading (calendar roll), the following ancillary procedure will apply.

- The contract having the earliest expiry must be settled first.
- The spread between the two contracts must be settled next by taking into account the last fifteen minute average trading price prior to 3:00pm, or prior to 1:00pm on early closing days, and by examining the trades executed during the previous 30 minutes.
- The settlement price for the far-dated contracts corresponds to the difference between the settlement price of the contract having the earliest expiry and the value of the spread.

4.6.3 SECOND ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.6.1 and the ancillary procedure in 4.6.2, the following ancillary procedure will apply.

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

4.6.4 THIRD ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.6.1 and the ancillary procedures in 4.6.2 and 4.6.3, the following ancillary procedure will apply.

In this situation, market officials will establish the settlement price based on available market information. They may also disregard any event (a trade, a bid or an offer) which occurs close to 3:00pm, or close to 1:00pm on early closing days, 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.

4.7 FUTURES CONTRACTS ON CANADIAN CRUDE OIL

The daily settlement price procedure for Futures contracts on Canadian Crude Oil is executed by a fully automated pricing algorithm which utilizes the parameters described in sections 4.7.1, 4.7.2 and 4.7.3 to ensure accuracy in the process.

DEFINITIONS:

"Regular orders": Orders routed by approved participants to the Bourse's trading system.

"Implied orders": Orders generated by the implied pricing algorithm (using regular orders) and registered in the order book by the trading engine.

4.7.1 IDENTIFICATION OF THE FRONT CONTRACT MONTH

The automated daily settlement pricing algorithm identifies the front contract month from the first two contract months. The front contract month is the one, among the first two contract months, that has the largest open interest and the required market information. In the absence of both these combined criteria, the front contract month shall be determined by market officials based on available market information.

4.7.2 ALGORITHM UTILIZED FOR THE DETERMINATION OF THE DAILY SETTLEMENT PRICE OF THE FRONT CONTRACT MONTH

4.7.2.1 Main Procedure

A. Once the front contract month has been identified, the automated daily settlement price algorithm will determine the settlement price of the front contract month according to the following priorities:

1) first, it will use a weighted average price of cumulated trades executed during the last five minutes of trading prior to 3:00pm, or prior to 1:00pm on early closing days, and amounting to at least 10 contracts on that contract month;

2) if no such average price is available, it will then use the weighted average price of cumulated trades executed during the last 30 minutes of trading prior to 3:00pm, or prior to 1:00pm on early closing days, and amounting to at least 10 contracts on that contract month.

B. Trades resulting from both regular and implied orders will be used in the process.

C. If no such average price is yet available, the bid price or offer price, that is not the result of implied orders and representing the smallest variation compared to the previous day settlement price will be used.

Once the daily settlement price for the front contract month has been established, it will be verified against the booked orders and if there is a better outright bid or offer that is not resulting from implied orders, the latter will take precedence over the daily settlement price calculated as described in paragraphs 4.7.2.1 A), B) and C) above.

4.7.3 PROCEDURE FOR THE DETERMINATION OF THE DAILY SETTLEMENT PRICE OF THE REMAINING CONTRACT MONTHS

Upon completion of the aforementioned steps, the automated daily pricing algorithm will then establish the settlement prices for all other contract months sequentially. The daily settlement prices of all other contract months will be established as follows:

A. first it will use the weighted average price of transactions (resulting from regular and implied orders) and strategies executed during the last five minutes of trading prior to 3:00pm, or prior to 1:00pm on early closing days, ; or,

B. if no weighted average price can be determined in this manner, then the same variation from the previous day's settlement price as calculated for the preceding contract expiry will be applied while respecting the posted market;

4.7.4 ANCILLARY PROCEDURE

A. In the absence of the required items to apply the aforementioned procedure, market officials will establish the daily settlement price based on available market information. They may also disregard any event (trade, bid or offer) which occurs close to 3:00pm, or close to 1:00pm on early closing days, and which is not compatible with a given settlement price.

B. In this situation, market officials will keep a record of the criteria used to establish the settlement price.

4.8 OVERNIGHT INDEX SWAP FUTURES CONTRACTS (OIS)

4.8.1 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 trading prior to 3:00pm, or prior to 1:00pm on early closing days, for all contract months.

4.8.1.1 Weighted average of closing range trades

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

4.8.1.2 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. This order must have been posted for 15 seconds or longer prior to 3:00pm, or prior to 1:00pm on early closing days, and its size must be for a total of 25 or more contracts in each of the months.

4.8.1.3 Remaining balances of booked orders partially executed at the close

In the case of a booked order as stipulated in paragraph 4.8.1.2 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 OIS contracts at 97.92 and 15 of those 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 OIS contracts during the closing period at 97.92 and there is a booked order bid for 10 OIS contracts at 97.91 (respecting the required time limit), the bid will be considered in addition to the trades in the closing period to establish a settlement price.

4.8.1.4 Strips and spreads

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

4.8.2 FIRST ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.8.1, the following ancillary procedure will apply.

4.8.2.1 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 of trading prior to 3:00pm, or prior to 1:00pm on early closing days, provided the volume for the strategy taken into account was of 25 or more contracts.

4.8.2.2 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 4.8.2.1. It has to have been posted for three minutes or longer prior to 3:00pm, or prior to 1:00pm on early closing days, and the size must be for 25 or more contracts.

4.8.3 SECOND ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.8.1 and the ancillary procedure in 4.8.2, the following ancillary procedure will apply.

4.8.3.1 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.

4.8.3.2 Conflicts between spreads

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

4.8.4 THIRD ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.8.1 and the ancillary procedures in 4.8.2 and 4.8.3, the following ancillary procedure will apply.

In this situation, market officials will establish the settlement price based on the available market information. They may also disregard any event (trade, bid or offer) which occurs close to 3:00pm, or close to 1:00pm on early closing days, and which is not compatible with a given settlement price.

In this situation, market officials will keep a record of the criteria used to establish the settlement price.

4.9 CANADIAN SHARE FUTURES CONTRACTS

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

4.9.1 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. The order must have been posted for 20 seconds or longer prior to the close and its size must be for a total of 10 contracts or more.

- **Last trades**

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

4.9.2 FIRST ANCILLARY PROCEDURE

When two contract months and the spread are trading (quarterly calendar roll), the ancillary procedure of this section 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 taking into account the average trading price of the last minute and by examining the trades executed during the previous 10 minutes.
- The settlement price for the back month or far month is obtained by the difference between the front month settlement price and the value of the spread.

4.9.3 SECOND ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.9.1 and the ancillary procedure in 4.9.2, the following ancillary procedure will apply.

Market officials will post a settlement price that will reflect 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.

4.9.4 THIRD ANCILLARY PROCEDURE

In the absence of the items required to apply the main procedure in 4.9.1 and the ancillary procedures in 4.9.2 and in 4.9.3, market officials will establish the daily 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.

In this situation, market officials will keep a record of the criteria used to establish the settlement price.

Disclaimer: Bourse de Montréal Inc. has entered into a licence agreement with FTSE to be permitted to use the FTSE Emerging Markets Index that FTSE owns rights in, in connection with the listing, trading and marketing of derivative products linked to the FTSE Emerging Markets Index.

The FTSE Emerging Markets Index Futures are not in any way sponsored, endorsed, sold or promoted by FTSE or its licensors and neither FTSE nor any of its licensors: (a) assume any liability or obligations in connection with the trading of any contract based on the FTSE Emerging Markets Index; or (b) accept any responsibility for any losses, expenses or damages arising in connection with the trading of any contract linked to the FTSE Emerging Markets Index. "FTSE®" is a trademark of the London Stock Exchange Group companies.

FTSE MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR THE RESULTS TO BE OBTAINED BY ANY PERSON OR ANY ENTITY FROM THE USE OF THE FTSE EMERGING MARKETS INDEX, ANY INTRADAY PROXY RELATED THERETO OR ANY DATA INCLUDED THEREIN IN CONNECTION WITH THE TRADING OF ANY CONTRACTS, OR FOR ANY OTHER USE.

Neither FTSE nor its licensors have provided or will provide any financial or investment advice or recommendation in relation to the FTSE emerging Markets Index to Bourse de Montréal Inc. or its clients. The Index is calculated by FTSE or its agent and all rights in the Index vest in FTSE. Neither FTSE nor its licensors shall be (a) liable (whether in negligence or otherwise) to any person for any error in the Index or (b) under any obligation to advise any person of any error therein.

Disclaimer: Bourse de Montréal Inc. does not: (a) assume any liability or obligations in connection with the trading of any contract based on the FTSE Emerging Markets Index; or (b) accept any responsibility for any losses, expenses or damages arising in connection with the trading of any contract linked to the FTSE Emerging Markets Index except as provided in Rule 2511 the Bourse de Montréal Inc. Rules.

BOURSE DE MONTRÉAL INC. MAKES NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR THE RESULTS TO BE OBTAINED BY ANY PERSON OR ANY ENTITY FROM THE USE OF THE FTSE EMERGING MARKETS INDEX, ANY INTRADAY PROXY RELATED THERETO OR ANY DATA INCLUDED THEREIN IN CONNECTION WITH THE TRADING OF ANY CONTRACTS, OR FOR ANY OTHER USE.