	TMX	Montréal Exchange
\boxtimes	Trading - Interest Rate Derivatives	Back-office - Options
\boxtimes	Trading - Equity and Index Derivatives	Technology
\boxtimes	Back-office - Futures	Regulation

CIRCULAR 163-17 November 14, 2017

REQUEST FOR COMMENTS

INTRODUCTION OF DAILY PRICE LIMITS ON FUTURES

INTRODUCTION OF ARTICLE 6820.1 AND AMENDMENTS TO ARTICLES 6388, 6706, 6756, 6763.8, 6764.8, 6765.8, 6808, 15507, 15607, 15626, 15646, 15666, 15907, 15937, 15957, 15996.7, 15998.6 AND 15999.9 OF THE RULES OF BOURSE DE MONTREAL INC.

The Rules and Policies Committee of Bourse de Montréal Inc. (the "**Bourse**") has approved the introduction of article 6820.1 and amendments to articles 6388, 6706, 6756, 6763.8, 6764.8, 6765.8 and 6808 of the Rule Six of the Bourse and amendments to articles 15507, 15607, 15626, 15646, 15666, 15907, 15937, 15957, 15996.7, 15998.6 and 15999.9 of the Rule Fifteen of the Bourse regarding the introduction of new daily price limits on futures.

Comments on the proposed amendments must be submitted on December 31, 2017 at the latest. Please submit your comments to:

M^e Alexandre Normandeau Legal Counsel, Montréal Exchange & CDCC Office of the General Counsel Bourse de Montréal Inc. Tour de la Bourse 800 Victoria Square, P.O. Box 61 Montréal, Québec H4Z 1A9 Email: legal@tmx.ca

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

M^e 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.

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).

Regulatory Amendment Process

The Bourse is authorized to carry on business as an exchange and is recognized as a self-regulatory organization ("SRO") 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).



INTRODUCTION OF DAILY PRICE LIMITS ON FUTURES

INTRODUCTION OF ARTICLE 6820.1 AND AMENDMENTS TO ARTICLES 6388, 6706, 6756, 6763.8, 6764.8, 6765.8, 6808, 15507, 15607, 15626, 15646, 15666, 15907, 15937, 15957, 15996.7, 15998.6 AND 15999.9 OF THE RULES OF BOURSE DE MONTREAL INC.

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I. SUMMARY

Bourse de Montréal Inc. (the « Bourse ») is reviewing its price thresholds beyond which orders are rejected or prevented from trading ("Marketplace Thresholds") on futures.

Marketplace Thresholds are part of an integrated framework to prevent erroneous orders, preserve market integrity and reduce short-term price volatility. The Bourse already has multiple controls in place that play an important role in the overall market risk management. The review of the Bourse's Marketplace Thresholds will reinforce this line of defense against short-term, unexplained price volatility and liquidity shifts.

Following the recent introduction of new daily price limits on options, the Bourse now wishes to expand these Daily Price Limits ("DPL") to futures.

II. ANALYSIS

a. Background

Regulatory requirements

Regulation 23-103 respecting Electronic Trading and Direct Electronic Access to Marketplaces ("Regulation 23-103") seeks to address areas of concern and risks, such as credit and market integrity risk, related to electronic trading.

The Bourse is subject to Regulation 23-103 and must comply with its provisions. Section 8 of Regulation 23-103 requires that a marketplace must not allow the execution or orders exceeding price and volume thresholds. These price and volume thresholds are expected to reduce erroneous orders and price volatility by preventing the execution of orders that could interfere with a fair and orderly market.

These thresholds must be established either by a marketplace regulation services provider or the marketplace itself if it is a recognized exchange that directly monitors the conduct of its members and enforces requirements set under subsection 7.1(1) of Regulation 23-101 respecting Trading Rules. Since the Bourse is a recognized exchange that directly monitors the conduct of its participants, it has the authority to set these thresholds.

Current controls

Marketplace Thresholds are part of an integrated approach to prevent erroneous transactions, preserve market integrity and manage intraday sudden and unexplained market volatility. Each of the Bourse's controls play an important role in the overall risk mitigation process.

Some of the controls currently in effect on the Bourse are:

- The requirement of approved participants to implement and maintain appropriate supervisory controls and procedures (pursuant to articles 3011 and 6366 of the Rules of the Bourse);
- An order price filter that validates incoming orders based on their price (current Marketplace Thresholds);

- For derivatives the underlying of which is exchange-traded, an automatic trading halt mechanism based on the circuit-breaker policy of the underlying's exchange;
- A discretionary authority granted to market supervisors to halt trading upon sudden and unforeseeable events that may affect market integrity (pursuant to article 6007 of the Rules of the Bourse);
- Procedures for the cancellation or adjustment of trades that allow market supervisors to quickly cancel trades or adjust trades prices;
- Maximum volume thresholds that validate incoming orders based on their size

Current limitations on order prices

The Bourse currently computes and disseminates the different Marketplace Thresholds via its market data feed for every listed product traded on the Bourse. Current limits are static for futures. The range is set as a differential from the previous day settlement price.

	Outright range from previous day settlement price (+/-)
BAX	0.90
OBX	0.30
CGB	3.00
OGB	0.30
CGZ	0.80
CGF	0.80
LGB	0.80
ONX	0.65
OIS	0.65

b. Description and Analysis of Market Impact

The Bourse will introduce the DPL functionality to enhance the granularity of its Marketplace Thresholds. The DPL functionality will allow a better control of mispriced orders and an improved management of short-term volatility on options.

The DPL functionality is comprised of two levels of control:

1- (X) which is a price limit based on a control price that filters incoming orders based on their price; and

2- (Y) which is a price limit based on a control price that validates the potential execution price of the next executable order;

Both the (X) and (Y) limits for a given product are based on the same control price.



Calculation of the control price

The control prices for (X) and (Y) on futures will be calculated daily prior to market opening while taking into consideration the previous day settlement price. The Bourse will then apply a predetermined range to the control price to determine the upper and lower limits of the (X) and (Y) limits.

Control prices can be changed at the market supervisor's discretion to ensure orderly trading should the price of a future be subject to an important movement, in order to avoid restraining clients from entering orders on such instrument. Modifications in market conditions can be caused by a variation of volatility, major news or any major change in market expectations.

Operation of the DPL functionality

1-(X) Limit

This limit, referred to as (X), validates incoming order prices against a predetermined control price. Any order above or below the limit price will be automatically rejected and a message to that effect will be sent to the market participant who entered the order. This order price validation should avoid transactions at prices that would be deemed detrimental to the market integrity.

The limits of (X) are sufficiently wide range to enable market participants to enter orders at the price they wish to trade and that wouldn't trigger an intervention from the Bourse based on its Procedures for the cancellation or adjustment of trades. (X) is the widest control and shouldn't impair market depth by rejecting reasonable orders. It is aimed at preventing obviously erroneous orders (fat fingers).

The (X) limits will be effective during the pre-opening and continuous trading phases.

A limit order that has a limit price outside the (X) limits but can nonetheless be partially executed will be rejected.

A resting order originally priced within the (X) limits that falls outside of such limits after a control price modification by the Bourse or following a new calculation of the control price at the opening of a new trading session will stay in the trading book but it will not be tradable until its price goes back within the (X) and (Y) limits.

The price limits of the (X) will be entered daily into the SOLA trading engine and disseminated to the market via the Bourse's data feed prior to the opening of trading. Intraday changes to limits will be communicated to participants via the Bourse's data feed.

Below is an example of how (X) operates:

Interest Rates Futures:	BAXZ17
Control Price:	98.285
Variation for applicable (X) limits:	0.90 ¹
Lower/Upper Band for (X):	97.385 - 99.185 (98.285 +/- (0.90))
Bid/Ask:	98.280 – 98.290

Scenario:

During the trading session a market participant enters an order to sell 10 contracts at 97.280.

Result:

The incoming order is outside the (X) price limit and is therefore rejected. The Bourse through its order entry and drop copy protocols, sends an electronic message to the market participant's trading application informing him that the order has been rejected.

2- (Y) Limit

This limit, referred to as (Y), is narrower than the (X) limit and validates the potential execution price against the same control price predetermined by the Bourse for each instrument. Any order priced within (X)'s limits is allowed in the electronic trading system. The DPL functionality will intervene if the potential execution price of an order exceeds the (Y)'s limits. (Y)'s limits aren't as wide as (X)'s thus exercising a closer control on order prices.

Opening phase

At the opening, a theoretical opening price outside the (Y) limits triggers a trading halt in the derivative instrument for a predetermined period of time. The instrument will attempt to automatically re-open through the process of a volatility auction. If the reopening price is within the (Y) limits, trading resumes normally. However, if the reopening price is outside the limits, the

¹ Range may not reflect actual chosen thresholds.

derivative instrument stays halted. A market supervisor can intervene and extend the trading halt if the derivative instrument cannot reopen within the (Y) limits after a few attempts.

The trading halt will place the instrument in a special state call "reserved state." During that state, all clients can modify or cancel their orders as well as enter new orders, but no trading is possible until the reopening of the instrument.

The market will be notified in real-time of any trading halt caused on an instrument by a breach to the (Y) limits and will be informed when trading resumes after the reopening of such instrument.

Continuous trading phase

During the continuous trading phase, any participant can enter a passive order that would be priced outside the (Y) limits but within the (X) limits. However, the DPL functionality will intervene if the potential execution price of an incoming order is outside the (Y) limits. In such a situation, the functionality will eliminate the incoming order, preventing the trade. A message to that effect will be sent to the market participant who entered the incoming order.

Limit orders that have a price limit outside (Y) and can be executed in part can be entered in the trading system. A limit order can drill through the liquidity up until the next lot is priced outside (Y). The remaining quantity of the order will remain in the trading system as a limit order priced at the applicable (Y) limit.

The (Y) limit aims at limiting the price fluctuation of a derivative instrument during a trading session and has no impact on market depth or liquidity. It is meant to assure that a derivative instrument's price will not increase or decrease unreasonably during a trading session.

The percentages of the (Y) limits will be made publicly available.

Below is are examples of how (Y) operates:

Interest Rates Futures:	BAXZ17	
Control Price:	98.285	
Lower/Upper Band for (X):	97.385 – 99.185 (98.285 +/- (0.90))	
Variation for applicable limit (Y):	0.60 ²	
Lower/Upper Band for (Y):	97.685 – 98.885 (98.285 +/- (0.60))	
Bid/Ask:	97.680 – 98.290	

Scenario A:

During the pre-opening phase, a market participant enters an order to sell 10 contracts at 97.680, which causes the theoretical opening price to be calculated at 97.680.

Result A:

The incoming order is within the (X) price limit, therefore it is not rejected and placed in the central limit order book ("CLOB"). However, holding everything else constant, the DPL functionality calculates that the order will cause the theoretical opening price to be 97.680. As a result, the instrument will enter into a reserved state because of the

² Variation may not reflect actual chosen thresholds.

violation of the (Y) limit and will remain in such state for a period of time defined by the Bourse.

The time lapse will permit market participants to adjust their orders so that the trade price does not violate the (Y) price limit. If this occurs, the DPL functionality will automatically re-open the instrument and allow the new established transaction to occur at a price within the (Y) price limit. If the order price is not adjusted such that the transaction price is within the (Y) limits then the instrument will remain in a Reserved State.

Scenario B:

During the regular trading session, a market participant enters an order to sell 10 contracts at 98.680 which would result in a potential transaction.

Result B:

As the potential execution price of this incoming order is outside the (Y) price limit, such incoming order is eliminated by the system. The Bourse through its order entry and drop copy protocols, sends an electronic message to the market participant's trading application informing him that the order has been eliminated.

Impact on market makers

Bulk quote orders from market makers will not be subject to the (X) limits.

Market makers' quoting obligations are not linked to the (X) or (Y) limits. While market markers' bulk quotes priced outside of the (X) and (Y) limits will be allowed in the system, the execution of a trade with an off-limit price will be prevented as the limits will not allow an incoming order, including through other bulk quotes, to be executed against such market markets' bulk quotes.

During regular trading hours, an order from a bulk quote triggering a potential transaction outside the (Y) limits on a specific instrument will not be allowed to trade: the system will reject the bid and offer order specifically for such instrument and let all other orders from the initial bulk quote reach the order book.

Market Impacts

Activating the DPL functionality on futures may cause some impacts on the market and bear some risks, which the Bourse will actively monitor and mitigate. The Bourse intends to activate the DPL functionality on futures gradually. The aforementioned risks are as follows.

As mentioned above, the Bourse will calculate the control prices for each instrument on a daily basis, and in the event that market conditions importantly affect the movement of a specific underlying instrument, the Market Operations Department will move the (X) and (Y) limits to ensure orderly trading of futures on such instrument. To do so and to prevent trading disruption, the Market Operations Department will closely monitor the movement of all futures that are subject to the (X) and (Y) limits, and will trigger an adjustment of limits when needed.

There is also a risk of trade disruption when the (Y) limit is breached during the pre-opening phase and a specific instrument is placed in a reserved state, as participants will not be able to trade

such instrument until it reopens for trading. While the breach will trigger a trading halt, the Bourse deems it reasonable as it serves the objectives justifying the activation of the limits: preventing erroneous trading and limiting short-term, unexplained price volatility and liquidity shifts. The Bourse believes that in such circumstances, the benefits outweigh potential impacts on the market. Proper mitigation for such risk involves setting up the (Y) limits at the right levels to avoid unnecessary trading halts while still reaching such objectives.

In the same vein, the Bourse understands that there is some risk in the process of setting up the variation range of the limits at appropriate levels where they would achieve its goals while not disrupting orderly trading. The Bourse is currently testing multiple scenarios to mitigate such risk, analysing the effects of various ranges with actual market data. The course of action chosen by the Bourse upon activation of the DPL functionality is to err on the side of larger (X) and (Y) limits initially to prevent market disruption, and adjust such limits over some period of time to reach the most effective balance point.

The Bourse will closely monitor the market impacts related to the DPL functionality activation, and make appropriate corrections to the system calibrations where and when required to ensure orderly trading.

c. Comparative Analysis

Comparable exchanges

For the purpose of the comparative analysis, the Bourse has considered three large futures exchanges. The comparable exchanges selected for comparison are the CME group, ICE Europe and the Australian Securities Exchange (ASX Group). Such exchanges were chosen based on their size and respective regional importance.

Comparable functionalities

We have reviewed and compared the various functionalities offered (or not) by the comparable exchanges based on the presence of:

(X) The exchange validates incoming order prices against a predetermined control price.

(Y) The exchange validates the potential execution price against a control price predetermined by the exchange.

	CME ³	ICE Europe ⁴	ASX⁵
Presence of (X)	Yes	No	No
Presence of (Y)	Yes	Yes	Yes

Presence of (X) on comparable exchanges:

CME applies concepts called "daily price limit and special price fluctuation limits" where a day order priced outside the daily range is rejected from reaching the central book of order. In the case of a GTC or a GTD orders, such orders are accepted and cannot trade until the order is inside the daily price limit range.

ICE Europe doesn't have a mechanism in place for the automatic rejection of incoming orders. On the other hand, it does have a No Cancellation Ranges ("NCR") policy in place. Any trade executed at a price outside of the NCR, if notified to the Exchange within the designated time period, shall be investigated by Market Supervision.

ASX does not use an automatic order rejection concept similar to the Bourse's proposed (X): ASX does have procedures to cancel trades that are placed in an Extreme Trade Range, and applies a concept called Anomalous Order Threshold ("AOT") which is closer to the Bourse's proposed (Y), where orders outside a predefined limit cannot be matched.

Presence of (Y) on comparable exchanges:

CME applies a mechanism called "Limit Price banding", which subjects all orders to price validation and rejects orders outside the given price band.

ICE Europe applies a concept called "price reasonability limits". The ICE Platform will not execute limit or Market orders unless the Market moves to bring such orders within the reasonability limit range.

ASX applies the concept of Anomalous Order Threshold ("AOT"). An order triggering a potential transaction outside a predefined range will not be matched and an auction will be conducted in the relevant order book.

Presence of a dynamic limit on comparable exchanges:

The Bourse is aware that a few comparable exchanges also use a dynamic price limit concept, which is another set of limits that moves in real-time based on trade prices. Given the dynamics

³ CME Group. Rulebook. [online] Available at: <u>http://www.cmegroup.com/rulebook/CME/I/5/5.pdf for</u> <u>special price fluctuation concept</u>, and CME Group, Limits and Banding. [online] Available at: <u>https://www.cmegroup.com/confluence/display/EPICSANDBOX/Limits+and+Banding</u> for daily price limit and banding range. [Accessed 15 Sept. 2017]

⁴ICE Europe. ICE Futures Europe Trade Adjustment and Cancellation Policy [online] Available at: https://www.theice.com/publicdocs/futures/Trade_Adjustment_Policy.pdf [Accessed 15 Sept. 2017]

⁵ ASX Limited (2017). ASX Operating Rules Procedures. [online] Available at:

http://www.asx.com.au/documents/rules/asx_or_procedures.pdf [Accessed 15 Sept. 2017]

of its market, the Bourse believes that the implementation of the (X) and (Y) limits is sufficient to meet the objectives stated herein. If and as market realities evolve, the Bourse may consider other types of limits in the future.

Conclusion of the comparative analysis

The Bourse considers that by offering the proposed DPL functionality, it remains consistent with other exchanges offering similar functionality. The DPL functionality will further refine the existing level of protection against market risks.

d. Proposed Amendments

The Bourse proposes to introduce new section 6820.1 to its Rules, introducing the DPL functionality on futures. The Bourse also proposes to modify the terminology of sections 6388, 6706, 6756, 6763.8, 6764.8, 6765.8, 6808, 15507, 15607, 15626, 15646, 15666, 15907, 15937, 15957, 15996.7, 15998.6 and 15999.9 in order to differentiate between the newly introduced daily prices limits and what the Bourse calls the maximum price variation thresholds, which do not share the same objectives as the DPL functionality.

It is to be noted that the modifications to certain of these articles take into account the modifications proposed as part of the Introduction of Daily Price Limits on Options project, submitted for comments in September 2017.

III. AMENDMENT PROCESS

The Bourse will improve overall market integrity by enhancing the granularity of the Marketplace Thresholds applicable to futures. The DPL functionality will increase the overall protection against market risks and prevent undue price fluctuations.

IV. IMPACTS ON TECHNOLOGICAL SYSTEMS

Development work by the Bourse has been done and is completed to implement the DPL functionality.

The Bourse expects that the DPL project will have no technological impacts on ISVs or participants given that the (X) limits will be disseminated in the same way as current Marketplace Thresholds.

V. OBJECTIVES OF THE PROPOSED ADMENDMENTS

The Bourse believes that DPL will complement and refine its tools to prevent erroneous transactions, preserve market integrity and manage intraday sudden and unexplained market volatility by reducing the potential of transactions with an unreasonable price on the futures market as well as the need for the Bourse to intervene through the application of its Procedures for the cancellation or adjustment of trades.

VI. PUBLIC INTEREST

The Bourse considers that the present initiative is in the interest of the public since its goal is to reduce potential unreasonable price swings. The proposed launch of the DPL functionality will improve the quality of the Bourse's futures markets by enhancing the risk management tools offered by the Bourse to mitigate the risks associated with order entry errors and ensure that market participants have an increase degree of protection when executing transactions. In addition, the procedural changes proposed should further reduce the frequency with which the Bourse has to intervene in the market to make trade price adjustments.

VII. EFFICIENCY

"Market efficiency refers to the ability of market participants to transact business easily and at a price that reflects all available market information. Factors considered when determining if a market is efficient include liquidity, price discovery and transparency."⁶

The Bourse is of the view that the present initiative will improve market efficiency: these price thresholds are expected to reduce erroneous orders and price volatility by preventing the execution of orders that could interfere with a fair and orderly market, thus encouraging market participants to trade at a price that reflects reliable available information.

VIII. PROCESS

The proposed amendments, including this analysis, must be approved by the Bourse's Rules and Policies Committee and submitted to the Autorité des marchés financiers, in accordance with the self-certification process, and to the Ontario Securities Commission for information purposes.

IX. ATTACHED DOCUMENTS

Proposed amendments to the Bourse's rules.

⁶ IOSCO (2011). Regulatory Issues Raised by the Impact of Technological Changes on Market Integrity and Efficiency. [online] Available at: <u>http://www.iosco.org/library/pubdocs/pdf/IOSCOPD354.pdf</u> [Accessed 14 Jul. 2017]

RULE SIX

TRADING

[...]

Section 6365- 6401 Electronic Trading of Derivatives Instruments Traded on the Bourse

[...]

6388 Daily Price Limits Maximum Price Variation Thresholds (25.09.00, 24.09.01, 29.10.01, 00.00.00, 00.00.00)

Unless otherwise specified in the Rules, the Bourse establishes for each derivative instrument a daily price limitmaximum price variation thresholds, based on a percentage, with respect to the previous day's settlement price and there shall be no trading above or below that limitese thresholds.

[...]

OPTIONS ON TEN-YEAR GOVERNMENT OF CANADA BOND FUTURES

[...]

6706 Daily Price Limit<u>Maximum Price Variation Thresholds</u> (20.03.91, 07.04.94, 18.01.16, 00.00.00)

There is no daily price limit for Ooptions on Ten-year Government of Canada Bond futures are not subject to maximum price variation thresholds.

[...]

REGULAR OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

6756 <u>Maximum Price Variation Thresholds</u> Daily Price Limit (07.04.94, 18.01.16, 00.00.00)

Regular Options on Three-month Canadian Bankers' Acceptance futures are not subject to a-maximum price variation thresholds daily price limit.

[...]

SERIAL MID-CURVE OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

6763.8 <u>Maximum Price Variation Thresholds</u> Daily Price Limit (18.01.16, 00.00.00) Serial Mid-Curve options on Three-month Canadian Bankers' Acceptance futures are not subject to a maximum price variation thresholdsdaily price limit.

[...]

ONE-YEAR QUARTERLY MID-CURVE OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

6764.8 Maximum Price Variation Thresholds Daily Price Limit (18.01.16, 00.00.00)

One-year Quarterly Mid-Curve options on Three-month Canadian Bankers' Acceptance futures are not subject to a daily price limitmaximum price variation thresholds.

[...]

TWO-YEAR QUARTERLY MID-CURVE OPTIONS ON THREE-MONTH CANADIAN **BANKERS' ACCEPTANCE FUTURES**

[...]

6765.8 Maximum Price Variation Thresholds Daily Price Limit (18.01.16, 00.00.00)

Two-year Quarterly Mid-Curve options on Three-month Canadian Bankers' Acceptance futures are not subject to a maximum price variation thresholdsdaily price limit.

[...]

D. SPECIAL RULES FOR TRADING FUTURES CONTRACTS

Section 6801 - 6820.1 **Terms of Trade Futures**

6808 Price Limits Maximum Price Variation Thresholds / Trading halts

(24.01.86, 22.04.88, 08.09.89, 16.04.92, 19.01.95, 07.09.99, 31.01.01, 14.06.02, 03.05.04, 24.07.06, 30.05.08, 17.04.09, 15.05.09, 18.06.10, 16.02.12, 09.06.14, 28.07.14, 18.01.16, 00.00.00)

The price limitsmaximum price variation thresholds/trading halts for each futures contract are set forth in Rule 15 in the section specific to a futures contract.

[...]

6820.1 Daily Price Limits on Futures (00.00.00)

For the purpose of this article:

a) "control price" means a price calculated for each futures based on the previous day settlement price.

- b) "X limits" means price limits based on a percentage of the control price under and above which an order is not allowed to register in the central limit order book.
- c) "Y limits" means price limits based on a percentage of the control price under and above which an incoming order would not be executed and would be eliminated, or under and above which a theoretical opening price would put the derivative instrument into a reserved state.
- d) "reserved state" means a trading halt triggered by a theoretical opening price under or above the Y limits at the opening of a given instrument.

The Bourse may subject futures to the X limits and Y limits as follows:

a) X limits: any order entered by a participant in breach of the X limits is automatically rejected by the trading system and a message is automatically sent to the participant to confirm such order rejection.

b) Y limits

- i) At the opening of an instrument, a theoretical opening price under or above the calculated Y limits causes the derivative instrument to enter into a reserved state.
- ii) Participants can enter new orders and modify or cancel their orders on an instrument which is in reserved state.
- iii) When an instrument is in reserved state, the trading system will attempt to automatically re-open the trading of such instrument through a volatility auction. Should the resulting reopening price be within the Y limits, trading on the instrument will resume. Should the resulting reopening price be outside the Y limits, the instrument will be maintained in a reserved state and another volatility auction will take place. Such process will automatically take place until trading on the instrument resumes. The Bourse can extend the trading halt created by the reserved state to ensure orderly trading.
- iv) The Bourse will notify the market through its market data feed when an instrument enters into a reserved state and when trading is resumed for such instrument.
- v) During the continuous trading phase, passive orders priced outside the Y limits but within the X limits will be allowed in the trading system. Should the potential execution price of an incoming order be outside the Y limits, such incoming order will be eliminated, preventing the trade, and a message will be automatically sent to the participant to confirm such order elimination.
- vi) A limit order priced outside the Y limits that could otherwise be partially executed will be partially executed up until a lot is priced outside of the Y limits, and the remaining quantity of the order will be priced at the Y limit.

Control prices and percentages of the X limits and Y limits can be modified and Y limits can be temporarily lifted at the Bourse's discretion to ensure regular trading.

The X limits are disseminated to the market via the Bourse's market data feed daily prior to the opening of the market.

The X limits do not apply to bulk quotes entered by participants while acting as duly appointed market makers pursuant to article 6820.

RULE SIX

TRADING

[...]

Section 6365- 6401 Electronic Trading of Derivatives Instruments Traded on the Bourse

[...]

6388 Maximum Price Variation Thresholds

(25.09.00, 24.09.01, 29.10.01, 00.00.00, 00.00.00)

Unless otherwise specified in the Rules, the Bourse establishes for each derivative instrument maximum price variation thresholds, based on a percentage, with respect to the previous day's settlement price and there shall be no trading above or below these thresholds.

[...]

OPTIONS ON TEN-YEAR GOVERNMENT OF CANADA BOND FUTURES

[...]

6706 Maximum Price Variation Thresholds (20.03.91, 07.04.94, 18.01.16, 00.00.00)

Options on Ten-year Government of Canada Bond futures are not subject to maximum price variation thresholds.

[...]

REGULAR OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

6756 Maximum Price Variation Thresholds (07.04.94, 18.01.16, 00.00.00)

Regular Options on Three-month Canadian Bankers' Acceptance futures are not subject to maximum price variation thresholds.

[...]

SERIAL MID-CURVE OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

6763.8 Maximum Price Variation Thresholds (18.01.16, 00.00.00) Serial Mid-Curve options on Three-month Canadian Bankers' Acceptance futures are not subject to maximum price variation thresholds.

[...]

ONE-YEAR QUARTERLY MID-CURVE OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

6764.8 Maximum Price Variation Thresholds

(18.01.16, 00.00.00)

One-year Quarterly Mid-Curve options on Three-month Canadian Bankers' Acceptance futures are not subject to maximum price variation thresholds.

[...]

TWO-YEAR QUARTERLY MID-CURVE OPTIONS ON THREE-MONTH CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

6765.8 Maximum Price Variation Thresholds

(18.01.16, 00.00.00)

Two-year Quarterly Mid-Curve options on Three-month Canadian Bankers' Acceptance futures are not subject to maximum price variation thresholds.

[...]

D. SPECIAL RULES FOR TRADING FUTURES CONTRACTS

Section 6801 – 6820.1 Terms of Trade Futures

6808 Maximum Price Variation Thresholds / Trading halts

(24.01.86, 22.04.88, 08.09.89, 16.04.92, 19.01.95, 07.09.99, 31.01.01, 14.06.02, 03.05.04, 24.07.06, 30.05.08, 17.04.09, 15.05.09, 18.06.10, 16.02.12, 09.06.14, 28.07.14, 18.01.16, 00.00.00)

The maximum price variation thresholds/trading halts for each futures contract are set forth in Rule 15 in the section specific to a futures contract.

[...]

6820.1 Daily Price Limits on Futures

(00.00.00)

For the purpose of this article:

a) "control price" means a price calculated for each futures based on the previous day settlement price.

- b) "X limits" means price limits based on a percentage of the control price under and above which an order is not allowed to register in the central limit order book.
- c) "Y limits" means price limits based on a percentage of the control price under and above which an incoming order would not be executed and would be eliminated, or under and above which a theoretical opening price would put the derivative instrument into a reserved state.
- d) "reserved state" means a trading halt triggered by a theoretical opening price under or above the Y limits at the opening of a given instrument.

The Bourse may subject futures to the X limits and Y limits as follows:

- a) X limits: any order entered by a participant in breach of the X limits is automatically rejected by the trading system and a message is automatically sent to the participant to confirm such order rejection.
- b) Y limits
 - i) At the opening of an instrument, a theoretical opening price under or above the calculated Y limits causes the derivative instrument to enter into a reserved state.
 - ii) Participants can enter new orders and modify or cancel their orders on an instrument which is in reserved state.
 - iii) When an instrument is in reserved state, the trading system will attempt to automatically re-open the trading of such instrument through a volatility auction. Should the resulting reopening price be within the Y limits, trading on the instrument will resume. Should the resulting reopening price be outside the Y limits, the instrument will be maintained in a reserved state and another volatility auction will take place. Such process will automatically take place until trading on the instrument resumes. The Bourse can extend the trading halt created by the reserved state to ensure orderly trading.
 - iv) The Bourse will notify the market through its market data feed when an instrument enters into a reserved state and when trading is resumed for such instrument.
 - v) During the continuous trading phase, passive orders priced outside the Y limits but within the X limits will be allowed in the trading system. Should the potential execution price of an incoming order be outside the Y limits, such incoming order will be eliminated, preventing the trade, and a message will be automatically sent to the participant to confirm such order elimination.
 - vi) A limit order priced outside the Y limits that could otherwise be partially executed will be partially executed up until a lot is priced outside of the Y limits, and the remaining quantity of the order will be priced at the Y limit.

Control prices and percentages of the X limits and Y limits can be modified and Y limits can be temporarily lifted at the Bourse's discretion to ensure regular trading.

The X limits are disseminated to the market via the Bourse's market data feed daily prior to the opening of the market.

The X limits do not apply to bulk quotes entered by participants while acting as duly appointed market makers pursuant to article 6820.

RULE FIFTEEN FUTURES CONTRACTS SPECIFICATIONS

[...]

CANADIAN BANKERS' ACCEPTANCE FUTURES

[...] **15507** Daily Price Limit Maximum Price Variation Thresholds (22.04.88, 00.00.00)

There shall be no daily price limitmaximum price variation thresholds.

[...]

TWO-YEAR GOVERNMENT OF CANADA BOND FUTURES

[...] **15607** <u>Maximum Price Variation Thresholds</u> <u>Daily Price Limit</u> (08.09.89, 17.04.09, 18.01.16, <u>00.00.00</u>)

There is shall be no maximum price variation thresholds daily price limit.

[...]

FIVE-YEAR GOVERNMENT OF CANADA BOND FUTURES

[...] **15626** <u>Maximum Price Variation Thresholds</u> Daily Price Limit (18.01.16, 00.00.00)

There shall be no maximum price variation thresholdsdaily price limit.

[...]

15646 <u>Maximum Price Variation Thresholds</u> [...] (18.01.16, 00.00.00)

There shall be no maximum price variation thresholds daily price limit.

[...]

THIRTY-YEAR GOVERNMENT OF CANADA BOND FUTURES

15666 <u>Maximum Price Variation Thresholds</u> Daily Price Limit (18.01.16, 00.00.00) There shall be no maximum price variation thresholds daily price limit.

[...]

30-DAY OVERNIGHT REPO RATE FUTURES

[...] **15907** <u>Maximum Price Variation Thresholds</u> <u>Daily Price Limit</u> (14.06.02, 18.01.16, 00.00.00)

There is shall be no maximum price variation thresholds daily price limit.

[...]

FUTURES CONTRACTS ON CARBON DIOXIDE EQUIVALENT (CO₂e) UNITS WITH PHYSICAL SETTLEMENT

[...] **15937** <u>Maximum Price Variation Thresholds</u> Daily Price Limit (30.05.08, 00.00.00)

There shall be no <u>maximum price variation thresholds</u>daily price limit for futures contracts on carbon dioxide equivalent (CO₂e) units with physical settlement.

[...]

FUTURES CONTRACTS ON CARBON DIOXIDE (CO₂e) EQUIVALENT UNITS WITH CASH SETTLEMENT

[...]

15957 <u>Maximum Price Variation Thresholds</u> Daily Price Limit (30.05.08, 00.00.00)

There shall be no <u>maximum price variation thresholds</u>daily price limit for futures contracts on carbon dioxide equivalent (CO₂e) units with cash settlement.

[...]

FUTURES CONTRACTS ON CANADIAN CRUDE OIL

[...]

15996.7 <u>Maximum Price Variation Thresholds</u> <u>Daily Price Limit</u> (18.06.10, 00.00.00)

There shall be no <u>maximum price variation thresholds</u>daily price limit for futures contracts on Canadian Crude Oil.

[...]

OVERNIGHT INDEX SWAP FUTURES

[...] **15998.6 <u>Maximum Price Variation Thresholds</u> Daily Price Limit** (16.02.12, 18.01.16, 00.00.00)

There is shall be no maximum price variation thresholds daily price limit.

[...]

FTSE EMERGING MARKETS INDEX FUTURES

[...]

15999.9 Daily Price Limits Maximum Price Variation Thresholds (09.06.14, 18.01.16, 00.00.00, 00.00.00)

There is shall be no maximum price variation thresholds daily price limit for FTSE Emerging Markets Index futures.

RULE FIFTEEN FUTURES CONTRACTS SPECIFICATIONS

[...]

CANADIAN BANKERS' ACCEPTANCE FUTURES

[...]

15507 Maximum Price Variation Thresholds (22.04.88, 00.00.00)

There shall be no maximum price variation thresholds.

[...]

TWO-YEAR GOVERNMENT OF CANADA BOND FUTURES

[...]

15607 Maximum Price Variation Thresholds (08.09.89, 17.04.09, 18.01.16, 00.00.00)

There shall be no maximum price variation thresholds.

[...]

FIVE-YEAR GOVERNMENT OF CANADA BOND FUTURES

[...]

15626 Maximum Price Variation Thresholds (18.01.16, 00.00.00)

There shall be no maximum price variation thresholds.

[...]

[...]

15646 Maximum Price Variation Thresholds (18.01.16, 00.00.00)

There shall be no maximum price variation thresholds.

[...]

THIRTY-YEAR GOVERNMENT OF CANADA BOND FUTURES

[...]

15666 Maximum Price Variation Thresholds (18.01.16, 00.00.00) There shall be no maximum price variation thresholds.

[...]

30-DAY OVERNIGHT REPO RATE FUTURES

[...]

15907 Maximum Price Variation Thresholds (14.06.02, 18.01.16, 00.00.00)

There shall be no maximum price variation thresholds.

[...]

FUTURES CONTRACTS ON CARBON DIOXIDE EQUIVALENT (CO₂e) UNITS WITH PHYSICAL SETTLEMENT

[...]

15937 Maximum Price Variation Thresholds (30.05.08, 00.00.00)

There shall be no maximum price variation thresholds for futures contracts on carbon dioxide equivalent (CO₂e) units with physical settlement.

[...]

FUTURES CONTRACTS ON CARBON DIOXIDE (CO₂e) EQUIVALENT UNITS WITH CASH SETTLEMENT

[...]

15957 Maximum Price Variation Thresholds (30.05.08, 00.00.00)

There shall be no maximum price variation thresholds for futures contracts on carbon dioxide equivalent (CO₂e) units with cash settlement.

[...]

FUTURES CONTRACTS ON CANADIAN CRUDE OIL

[...]

15996.7 Maximum Price Variation Thresholds (18.06.10, 00.00.00)

There shall be no maximum price variation thresholds for futures contracts on Canadian Crude Oil.

[...]

OVERNIGHT INDEX SWAP FUTURES

[...]

15998.6 Maximum Price Variation Thresholds (16.02.12, 18.01.16, 00.00.00)

(10.02.12, 18.01.10, 00.00.00)

There shall be no maximum price variation thresholds.

[...]

FTSE EMERGING MARKETS INDEX FUTURES

[...]

15999.9 Maximum Price Variation Thresholds (09.06.14, 18.01.16, 00.00.00, 00.00.00)

There shall be no maximum price variation thresholdsfor FTSE Emerging Markets Index futures.