

NOTICE TO MEMBERS No. 2021 - 012

January 27, 2021

SELF-CERTIFICATION

AMENDMENTS TO THE RULES OF THE CANADIAN DERIVATIVES CLEARING CORPORATION TO INTRODUCE FUTURES ON DIVIDEND INDICES AND TO LIST FOR TRADING LONGER DATED S&P/TSX 60 INDEX STANDARD FUTURES (SXF)

On October 29, 2020, the Board of Directors of the Canadian Derivatives Clearing Corporation ("CDCC") approved amendments to the Rules and Risk Manual of CDCC to introduce the S&P/TSX 60 Dividend Index Futures and to list for trading longer dated S&P/TSX 60 Index Standard Futures (SXF).

CDCC wishes to inform the Clearing Members that these amendments have been self-certified pursuant to the self-certification process set forth in the *Derivatives Act* (C.Q.L.R., c I-14.01) and submitted to the Ontario Securities Commission in accordance with the "Rule Change Not Requiring Approval in Ontario" process.

You will find attached hereto the amendments set to come into force and to be incorporated into the version of the Rules and Risk Manual of CDCC that will be made available on the CDCC website at <u>www.cdcc.ca</u> on **February 2, 2021**, before the market opens.

If you have any questions or concerns regarding this notice, please contact Sophie Brault at 514-787-6565 or at <u>sophie.brault@tmx.com</u>.

Jay Rajarathinam President APPENDIX 1: AMENDED RULES AMENDED VERSION



CANADIAN DERIVATIVES CLEARING CORPORATION

RULES

JUNE 16, 2020

PART C – FUTURES

<u>RULE C-22</u> <u>FUTURES ON DIVIDEND INDICES</u>

The Sections of this Rule C-22 are applicable only to Futures settling on a future date where the Underlying Interest is an Eligible Dividend Index.

Section C-2201 DEFINITIONS

Notwithstanding Section A-102 for the purposes of Futures on Dividend indices, the following terms are as defined:

"Eligible Dividend Index" – means a dividend index that is the S&P/TSX 60 Dividend Points Index (Annual).

"Exchange" – means Bourse de Montréal Inc.

"Final Settlement Price" – means the settlement price determined by the Exchange as being the official opening level of the Eligible Dividend Index on the day following the last day of trading, multiplied by the appropriate Multiplier.

"**Futures**" – means an undertaking to make settlement in cash on a future date of the difference between the Final Settlement Price and the Trade Price, multiplied by the appropriate Multiplier, pursuant to the standardized terms and conditions set forth in these Rules and in accordance with the by-laws, rules and policies of the Exchange.

"Multiplier" – means the multiplier of a Futures on an Eligible Dividend Index, as specified by the Exchange.

"Underlying Interest" – means the Eligible Dividend Index underlying of the Futures.

"Underlying Security" – means any of the securities included in an Eligible Dividend Index underlying a class of Futures on an Eligible Dividend Index.

Section C-2202 FINAL SETTLEMENT IN CASH THROUGH THE CORPORATION

Unless otherwise specified by the Corporation, settlement of positions held in Series of Futures following the close of trading on the last day of trading shall be made on the first Business Day following the last day of trading. Settlement shall be made by an exchange of cash between the Corporation and each of the short and long Clearing Members. The amount to be paid or received in final settlement of:

(a) each position opened prior to the last trading day is the difference between

(i) the Final Settlement Price, and(ii) the Settlement Price of the contract on the Business Day before the last trading day,

multiplied by the appropriate Multiplier; and

(b) each position opened on the last trading day is the difference between

(i) the Final Settlement Price, and

(ii) the Trade price of the open contract

multiplied by the appropriate Multiplier

Section C-2203 TENDER NOTICES

Rule C-5 shall not apply to Futures on Eligible Dividend Indices as they are Cash-settled.

Section C-2204 ADJUSTMENTS

No adjustments will ordinarily be made in the terms of Eligible Dividend Index Futures in the event that underlying securities are added to or deleted from an Eligible Dividend Index or when the relative representation of one or more underlying securities underlying an Eligible Dividend Index is changed. However, the Corporation may, at the request of the Exchange, adjust the terms of the affected Dividend Futures.

Section C-2205 UNAVAILABILITY OR INACCURACY OF CURRENT VALUE

(1) If the Corporation determines that the Final Settlement Price for an Eligible Dividend Index underlying any series of Eligible Dividend Index Futures is unreported or otherwise unavailable for purposes of calculating the Gains and Losses, then, in addition to any other actions that the Corporation may be entitled to take under these Rules, the Corporation may do any or all of the following:

a) Suspend the Settlement of Gains and Losses. At such times as the Corporation determines that the required Final Settlement Price is available, the Corporation shall fix a new date for Settlement of the Gains and Losses.

(b) Fix the Final Settlement Price in accordance with the best information available as to the correct Final Settlement Price.

(2) The Final Settlement Price as reported by the Exchange shall be conclusively deemed to be accurate except that where the Corporation determines in its discretion that there is a material inaccuracy in the reported Final Settlement Price, it may take such action as it determines in its discretion to be fair and appropriate in the circumstances. Without limiting the generality of the foregoing, the Corporation may require an amended Final Settlement Price to be used for all settlements.

Section C-2206 PAYMENT AND RECEIPT OF PAYMENT OF THE TRADE PRICE

The settlement value of the maturing contract shall be included with other settlement amounts on the daily Detailed Futures Consolidated Activity Report and the Futures Sub-Accounts Consolidated Activity Report.

PART C - FUTURES

RULE C-22 FUTURES ON DIVIDEND INDICES

The Sections of this Rule C-22 are applicable only to Futures settling on a future date where the Underlying Interest is an Eligible Dividend Index.

Section C-2201 DEFINITIONS

Notwithstanding Section A-102 for the purposes of Futures on Dividend indices, the following terms are as defined:

"**Eligible Dividend Index**" – means a dividend index that is the S&P/TSX 60 Dividend Points Index (Annual).

"Exchange" – means Bourse de Montréal Inc.

"Final Settlement Price" – means the settlement price determined by the Exchange as being the official opening level of the Eligible Dividend Index on the day following the last day of trading, multiplied by the appropriate Multiplier.

"**Futures**" – means an undertaking to make settlement in cash on a future date of the difference between the Final Settlement Price and the Trade Price, multiplied by the appropriate Multiplier, pursuant to the standardized terms and conditions set forth in these Rules and in accordance with the by-laws, rules and policies of the Exchange.

"**Multiplier**" – means the multiplier of a Futures on an Eligible Dividend Index, as specified by the Exchange.

"Underlying Interest" – means the Eligible Dividend Index underlying of the Futures.

"**Underlying Security**" – means any of the securities included in an Eligible Dividend Index underlying a class of Futures on an Eligible Dividend Index.

Section C-2202 FINAL SETTLEMENT IN CASH THROUGH THE CORPORATION

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(a) each position opened prior to the last trading day is the difference between

(i) the Final Settlement Price, and

(ii) the Settlement Price of the contract on the Business Day before the last trading day,

multiplied by the appropriate Multiplier; and

(b) each position opened on the last trading day is the difference between

(i) the Final Settlement Price, and

(ii) the Trade price of the open contract

multiplied by the appropriate Multiplier

Section C-2203 TENDER NOTICES

Rule C-5 shall not apply to Futures on Eligible Dividend Indices as they are Cash-settled.

Section C-2204 ADJUSTMENTS

No adjustments will ordinarily be made in the terms of Eligible Dividend Index Futures in the event that underlying securities are added to or deleted from an Eligible Dividend Index or when the relative representation of one or more underlying securities underlying an Eligible Dividend Index is changed. However, the Corporation may, at the request of the Exchange, adjust the terms of the affected Dividend Futures.

Section C-2205 UNAVAILABILITY OR INACCURACY OF CURRENT VALUE

(1) If the Corporation determines that the Final Settlement Price for an Eligible Dividend Index underlying any series of Eligible Dividend Index Futures is unreported or otherwise unavailable for purposes of calculating the Gains and Losses, then, in addition to any other actions that the Corporation may be entitled to take under these Rules, the Corporation may do any or all of the following:

a) Suspend the Settlement of Gains and Losses. At such times as the Corporation determines that the required Final Settlement Price is available, the Corporation shall fix a new date for Settlement of the Gains and Losses.

(b) Fix the Final Settlement Price in accordance with the best information available as to the correct Final Settlement Price.

(2) The Final Settlement Price as reported by the Exchange shall be conclusively deemed to be accurate except that where the Corporation determines in its discretion that there is a material inaccuracy in the reported Final Settlement Price, it may take such action as it determines in its discretion to be fair and appropriate in the circumstances. Without limiting the generality of the foregoing, the Corporation may require an amended Final Settlement Price to be used for all settlements.

Section C-2206 PAYMENT AND RECEIPT OF PAYMENT OF THE TRADE PRICE

The settlement value of the maturing contract shall be included with other settlement amounts on the daily Detailed Futures Consolidated Activity Report and the Futures Sub-Accounts Consolidated Activity Report.

APPENDIX 2: AMENDED RISK MANUAL

AMENDED VERSION



RISK MANUAL

JUNE 12, 2020



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6.5 MARGIN INTERVAL

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Section 6: Appendix

6.1 BASE INITIAL MARGIN CALCULATION FOR OPTIONS, FUTURES AND UNSETTLED ITEMS¹

For greater certainty, this sections only applies to Options, Futures and Unsettled Items.

To calculate the Base Initial Margin the risk methodology is based on the PSR and the VSR which are then converted into the Scanning Risk parameter. The Scanning Risk parameter represents the difference between the most unfavourable projected liquidation value and the initial reference price². The most unfavourable projected liquidation value amongst the Risk Array is obtained by varying the values of the Underlying Interest and implied volatility according to several scenarios representing adverse changes in normal market conditions. The projected liquidation values are obtained using specific valuation models such as Black 76, Black-Scholes, Binomial and others.

The Scanning Risk is calculated at the Combined Commodity level and is denominated in the same currency as the contract. For contracts belonging to the same Combined Commodity, the Risk Array results are added up for all contracts under the same scenario. The highest loss represents the Scanning Risk.

The other variables influencing the value of the Base Initial Margin are the Intra-Commodity, the Inter-Commodity and the Short Option Minimum. The following table summarizes the variables used in the calculation.

Input variables to calculate the Base Initial Margin	Options	Futures	Unsettled Items
Scanning Risk	•	•	•
Intra-Commodity		•	
Inter-Commodity ³		•	

¹ Unsettled Items resulting of a physical delivery of Government of Canada Bond Futures are margined under the VaR methodology.

² The initial reference price is the market price or the theoretical price derived from market observations.

³ Not applicable for Share Futures.



Short Option Minimum

6.1.1 Scanning Risk

The Scanning Risk parameter represents the difference between the most unfavourable projected liquidation value and the initial reference price. The most unfavourable projected liquidation value amongst the Risk Array is obtained by varying the values of the Underlying Interest and implied volatility according to several scenarios representing adverse changes in normal market conditions. The table at the end of this section shows all the risk scenarios. The projected liquidation values are obtained using specific valuation models such as Black 76, Black-Scholes, Binomial and others. If the largest loss is negative, the Scanning Risk is set to zero. The Scanning Risk is then compared to the Short Option Minimum. This amount is required if the Short Option Minimum is higher than the result of the Risk Arrays.

6.1.1.1 Price Scan Range

The term PSR represents the potential variation of the contract value and it is calculated through the following formula:

$$PSR = Price \times MI \times Contract Size$$

The methodology for the MI is detailed in Section 6.5.

6.1.1.2 Volatility Scan Range

The term VSR represents the potential variation of the implied volatility and it is calculated through the following formula:

$$VSR = Volatility Shock \times \sqrt{n}$$

Where 'n' is the MPOR, and 'Volatility Shock' represents the 95% confidence level of the historical daily fluctuations for the series volatility over a one year look-back period. The daily fluctuations are scaled up with the use of MPOR. VSR values are subject to a floor value and a cap value.



Risk Scenarios	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Underlying Price Variation *	0	0	1/3	1/3	-1/3	-1/3	2/3	2/3	-2/3	-2/3	1	1	-1	-1	2	-2
Volatility Variation *	1	-1	1	-1	1	-1	1	-1	1	-1	1	-1	1	-1	0	0
Weight Fraction Considered	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	35%	35%

* Expressed in scan range

The MI, MPOR and Volatility Shocks values are updated by the Corporation from time to time.

6.1.2 Intra-Commodity

Long positions on Futures maturing in one month are automatically matched with short positions on Futures maturing in another month. The resulting Base Initial Margin on these two Futures belonging to the same Combined Commodity, could be lower than the real risk associated with the combination of the two contracts. In order to cover this inter-month spread risk, a charge is included in the Base Initial Margin.

For the Futures, the Intra-Commodity which is an additional dollar amount charge applied to each combination of two different Futures, is determined as follows:

Intra – Commodity =
$$\alpha \times \sqrt{n} \times \sigma$$

Where 'n' is the number of MPOR, ' α ' is equal to the confidence value equivalent to 99.87% (three standard deviations) of the cumulative normal distribution (applicable to all products except for the Three-Month Canadian Bankers' Acceptance Futures (BAX), the and CORRA Futures (COA & CRA)) the S&P/TSX 60 <u>Dividend Index Futures</u>) or equal to the confidence value equivalent to 99% of the cumulative student's t-distribution with 4 degrees of freedom (applicable to the BAX<u>, and CORRA Futures and the S&P/TSX 60 Dividend Index Futures</u>). ' σ ' is the volatility estimator of the Futures combination's daily profit and loss over the reference period and is computed using the EWMA approach. Further details on the EWMA are described in Appendix 6.5.



In addition, CDCC considers a floor for the EWMA volatility estimator. The level of such floor is calculated as an average of daily EWMA volatility estimator observed over the last 10 years. The EWMA volatility estimator that will be used to calculate the Intra-Commodity cannot be lower than the calculated floor.

With respect to the BAX, and the CORRA Futures (COA & CRA), -the S&P/TSX 60 Index Standard Futures (SXF) and the S&P/TSX 60 Dividend Index Futures, CDCC calculates the Intra-Commodity for all combinations of spreads and/or butterfly strategies and applies a same charge for a same group of combinations with close maturities. If multiple Intra-Commodity are defined, the Corporation will prioritize the ones providing the lowest Base Initial Margin.

The combinations and the spread priorities for the Intra-Commodity are updated by CDCC from time to time.

6.1.3 Inter-Commodity

The Corporation may consider the correlation that exists between different Futures when calculating the Base Initial Margin. The Corporation will grant a credit according to the historical correlation of the returns of the two Futures. If multiple Inter-Commodity are defined, the Corporation will prioritize the ones with the highest correlation.

The Inter-Commodity and the spread priorities are updated by CDCC from time to time.



6.5 MARGIN INTERVAL

The MI is calculated using the following formula:

 $MI = \alpha \times \sqrt{n} \times \sigma$

Where 'n' is the MPOR, ' α ' is equal to the confidence level equivalent to 99.87% (three standard deviations) of the cumulative normal distribution (applicable to all products except for the BAX, <u>the -CORRA Futures</u>, the S&P/MX International Cannabis Index Futures and <u>the S&P/TSX 60 Dividend Index FuturesCORRA Futures</u>) or equal to the confidence value equivalent to 99% of the cumulative student's t-distribution with 4 degrees of freedom (applicable to the BAX, the <u>CORRA Futures</u>, the S&P/MX International Cannabis Index Futures and <u>the S&P/TSX 60 Dividend Index Futures</u>, the S&P/MX International Cannabis Index Futures and the S&P/TSX 60 Dividend Index Futures, the S&P/MX International Cannabis Index Futures and the S&P/TSX 60 Dividend Index Futures, the S&P/MX International Cannabis Index Futures and the S&P/TSX 60 Dividend Index Futures (CORRA Futures). ' σ ' is the volatility estimator of the contract's returns and is computed using an exponentially weighted moving average (EWMA) approach.

The implemented formula for the estimator at any time *t* is:

$$IM = \alpha \times \sqrt{n} \times \sigma$$

$$\sigma_t = \sqrt{\frac{(1-\lambda)\sum_{i=1}^{260}\lambda^{i-1}(R_{t-i}-\bar{R})^2}{(1-\lambda^{260})}}$$

Where R is the daily price returns of the Underlying Interests for Options and Share Futures and the daily price returns of the Futures prices for Futures (excluding Share Futures), \overline{R} is the mean return over the specified period and λ is the decay factor. CDCC uses $\lambda = 0.99$ (applicable to all products except for the S&P/TSX 60 Dividend Index Futures) or $\lambda = 0.98$ (applicable to the S&P/TSX 60 Dividend Index Futures).

In addition, CDCC considers a floor for the EWMA volatility estimator defined above. The level of such floor is calculated as an average of daily EWMA volatility estimator observed over the last 10 years. <u>CDCC also considers a cap for products whose decay factor used by CDCC is below 0.99</u>. The level of such cap is calculated using the distribution of <u>historical daily price returns over a minimum of 10 years</u>. The volatility estimator that will be used to calculate the MI cannot be lower than the calculated floor, or higher than the <u>calculated cap</u>.

CLEAN VERSION



RISK MANUAL

, 2020



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Section 6: Appendix

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$$VSR = Volatility Shock \times \sqrt{n}$$

Where 'n' is the MPOR, and 'Volatility Shock' represents the 95% confidence level of the historical daily fluctuations for the series volatility over a one year look-back period. The daily fluctuations are scaled up with the use of MPOR. VSR values are subject to a floor value and a cap value.



Risk Scenarios	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Underlying Price Variation *	0	0	1/3	1/3	-1/3	-1/3	2/3	2/3	-2/3	-2/3	1	1	-1	-1	2	-2
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Weight Fraction Considered	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	35%	35%

* Expressed in scan range

The MI, MPOR and Volatility Shocks values are updated by the Corporation from time to time.

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Intra – Commodity =
$$\alpha \times \sqrt{n} \times \sigma$$

Where 'n' is the number of MPOR, ' α ' is equal to the confidence value equivalent to 99.87% (three standard deviations) of the cumulative normal distribution (applicable to all products except for the Three-Month Canadian Bankers' Acceptance Futures (BAX, the CORRA Futures (COA & CRA)) the S&P/TSX 60 Dividend Index Futures) or equal to the confidence value equivalent to 99% of the cumulative student's t-distribution with 4 degrees of freedom (applicable to the BAX,CORRA Futures and the S&P/TSX 60 Dividend Index Futures). ' σ ' is the volatility estimator of the Futures combination's daily profit and loss over the reference period and is computed using the EWMA approach. Further details on the EWMA are described in Appendix 6.5.



In addition, CDCC considers a floor for the EWMA volatility estimator. The level of such floor is calculated as an average of daily EWMA volatility estimator observed over the last 10 years. The EWMA volatility estimator that will be used to calculate the Intra-Commodity cannot be lower than the calculated floor.

With respect to the BAX, the CORRA Futures (COA & CRA), the S&P/TSX 60 Index Standard Futures (SXF) and the S&P/TSX 60 Dividend Index Futures, CDCC calculates the Intra-Commodity for combinations of spreads and/or butterfly strategies and applies a same charge for a same group of combinations with close maturities. If multiple Intra-Commodity are defined, the Corporation will prioritize the ones providing the lowest Base Initial Margin.

The combinations and the spread priorities for the Intra-Commodity are updated by CDCC from time to time.

6.1.3 Inter-Commodity

The Corporation may consider the correlation that exists between different Futures when calculating the Base Initial Margin. The Corporation will grant a credit according to the historical correlation of the returns of the two Futures. If multiple Inter-Commodity are defined, the Corporation will prioritize the ones with the highest correlation.

The Inter-Commodity and the spread priorities are updated by CDCC from time to time.



6.5 MARGIN INTERVAL

The MI is calculated using the following formula:

 $MI = \alpha \times \sqrt{n} \times \sigma$

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The implemented formula for the estimator at any time *t* is:

$$IM = \alpha \times \sqrt{n} \times \sigma$$

$$\sigma_t = \sqrt{\frac{(1-\lambda)\sum_{i=1}^{260}\lambda^{i-1}(R_{t-i}-\bar{R})^2}{(1-\lambda^{260})}}$$

Where R is the daily price returns of the Underlying Interests for Options and Share Futures and the daily price returns of the Futures prices for Futures (excluding Share Futures), \overline{R} is the mean return over the specified period and λ is the decay factor. CDCC uses $\lambda = 0.99$ (applicable to all products except for the S&P/TSX 60 Dividend Index Futures) or $\lambda = 0.98$ (applicable to the S&P/TSX 60 Dividend Index Futures).

In addition, CDCC considers a floor for the EWMA volatility estimator defined above. The level of such floor is calculated as an average of daily EWMA volatility estimator observed over the last 10 years. CDCC also considers a cap for products whose decay factor used by CDCC is below 0.99. The level of such cap is calculated using the distribution of historical daily price returns over a minimum of 10 years. The volatility estimator that will be used to calculate the MI cannot be lower than the calculated floor, or higher than the calculated cap.