



NOTICE TO MEMBERS

No. 2015 – 055

May 8, 2015

SELF-CERTIFICATION

AMENDMENTS TO THE RISK MANUAL OF CDCC TO ADDRESS CLOSE-OUT PERIODS IN THE MARGIN CALCULATION

On July 14, 2014, the Board of Directors of the Canadian Derivatives Clearing Corporation (CDCC) approved amendments to the Risk Manual of CDCC. CDCC wishes to inform the Clearing Members that this amendments have been self-certified pursuant to the self-certification process set forth in the *Derivatives Act* (R.S.Q., c I-14.01) and approved by the Ontario Securities Commission in accordance with the “Rule Change Requiring Approval in Ontario” process.

The purpose of the proposed amendments is to set appropriate minimal number of liquidation days (close-out periods) per instrument and consider the impact of concentration on such liquidation horizon.

You will find attached hereto the amendments to be incorporated into the version of the Risk Manual of CDCC that will be made available on the CDCC website at www.cdcc.ca as of May 8, 2015 and set to come into force on May 11, 2015.

If you have any questions or concerns regarding this notice, please contact CDCC’s Corporate Operations department or direct your e-mail inquiries to cdcc-ops@cdcc.ca.

Glenn Goucher
President and Chief Clearing Officer



Risk Manual

MARGIN DEPOSIT

The Corporation has three different funds for margining purposes and each serves a specific purpose:

- Margin Fund
- Difference Fund
- Clearing Fund

MARGIN FUND

The Margin Fund is composed of the Initial Margin and the Variation Margin. The Initial Margin covers the potential losses and market risk that may occur as a result of future adverse price movements across the portfolio of each Clearing Member under normal market conditions. Furthermore, in the event of a default, the Corporation is faced with closing out the defaulters' portfolio within a short period (the liquidation period). In a complementary manner, Variation Margin is a daily payment process that covers the market risk due to the change in price since the previous day, ahead of the default of one of its Clearing Members. Variation Margin is settled in cash for Futures contracts and collateralized for Options contracts, OTCI and Fixed Income Transactions.

INITIAL MARGIN

As fundamental inputs to calculate the Initial Margin, the Corporation uses the following parameters: 1) confidence level (to reflect normal market conditions), 2) assumed liquidation period and 3) historical volatility over a specific period.

Specifically, the Corporation uses three standard deviations to consider a confidence level over 99% under the normal distribution's assumption. The Corporation also considers a variable number of days as an acceptable liquidation period. The Initial Margin amount is calculated using the historical volatility of the daily price returns of the Underlying Interests for Options contracts, the daily price returns of the futures prices for Futures contracts and the yield-to-maturity (YTM) daily variation of the on-the-run security for Fixed Income Transactions. The historical volatility, combined with the liquidation period and the confidence level gives the Margin Interval (MI) as described below.

MARGIN INTERVAL (MI) CALCULATION

The Margin Interval calculations are re-evaluated regularly. However, the Corporation may use its discretion and update the Margin Intervals more frequently if necessary. The Margin Intervals are used to calculate the Initial Margin for each Derivative Instrument.

The Margin Interval (MI) is calculated using the following formula:

$$MI = 3 \times \sqrt{n} \times \text{Max}[\sigma_{20 \text{ days}}, \sigma_{90 \text{ days}}, \sigma_{260 \text{ days}}]$$

Where 'n' is the number of liquidation days¹, 'σ' is the standard deviation of the daily variation over 20, 90 and 260 days, and 3 is equivalent to 99.87% for a one-tail confidence interval under the normal distribution's assumption.

Liquidation Period

The Corporation applies different number of liquidation days "n" depending on the type of product. The Corporation uses quantitative and qualitative analysis, established according to the degree of liquidity of the Product/Underlying Interest which is derived from parameters such as, but not limited, to, traded volume, Government of Canada/provincial yield spreads and international guidelines. For all products, "n" is determined at least once a year and communicated to Clearing Members by a written notice.

Furthermore, in anticipation of Remembrance Day (the "Banking Holiday"), the Corporation will add one (1) more Business Day to the number of liquidation days "n" for equity and Index products. Hence, the liquidation period will be increased by one (1) more Business Day prior and up to the Banking Holiday. The additional margin amount for the Banking Holiday will be released on the morning of the following Business Day.

Price Scan Range (PSR) Calculation

¹ The Corporation uses the following number of liquidation days 'n' as follows:

- For Futures contracts and Options contracts n = 2 days;
- For OTCI options n = 5 days;
- For Fixed Income Transactions, where the Underlying Interest is issued by the Government of Canada or a federal Crown corporation n = 2 days; and
- For Fixe Income Transactions, where the Underlying Interest is issued by a provincial government or a provincial Crown corporation n = a + 2 days, where a = number of additional days.

'a' is based on a quantitative and qualitative analysis, established according to the degree of liquidity of the Underlying Interest which is derived from parameters such as but not limited to traded volume, Government of Canada/ provincial yield spreads and international guidelines. For a provincial government or provincial Crown corporation issuer 'a' is determined at least once a year and communicated to Clearing Members by written notice.

Furthermore, in anticipation of Remembrance Day (the "Banking Holiday") the Corporation will add one more day to the number of liquidation days 'n'. Hence, for Options and Futures contracts where the Underlying Interest is an Equity (i.e. Stock and ETF) or an Index the liquidation period will increase to three Business Days prior and up to the Banking Holiday, and for OTCI options, the liquidation period will increase to six Business Days prior and up to the Banking Holiday. The additional margin amount for the Banking Holiday will be released on the morning of the following Business Day.

In order to calculate the most unfavourable projected liquidation value, the Risk Engine uses the MI of the above formula to calculate the Price Scan Range (PSR) and to run several scenarios through its Risk Array calculation (for a detailed description refer to the section on Risk Arrays below).

A Risk Array is a set of 16 scenarios defined for a particular contract specifying how a hypothetical single position will lose or gain value if the corresponding risk scenario occurs from the current situation to the near future (usually next day).

PSR is the maximum price movement reasonably likely to occur, for each Derivative Instrument or, for Options contracts, their Underlying Interest. The term PSR is used by the Risk Engine to represent the potential variation of the product value and it is calculated through the following formula:

$$\text{PSR} = \text{Underlying Interest Price} \times \text{MI} \times \text{Contract Size}.$$