Guidance Note

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Key concepts:

Determination of Daily Settlement Price for Option Contracts

Related information:

FGL Operating Rules

Part 4

FGL Procedures

Part 4

Recommended Audience:

Trading Participants

Derivatives Staff Members

Previous Issues:

Nil

GN 35 – Daily Settlement Price for Option Contracts

Introduction

The purpose of this Guidance Note is to describe how the Exchange calculates the Daily Settlement Price for Option Contracts.

Guidance

The Daily Settlement Price for an Option Contract is based on the Daily Settlement Price for the underlying Futures Contract and is calculated in a group of all Option Contracts based on the same Futures Contract (option series). For example all Option Contracts based on the FEX API5 Newcastle Coal (AUD) December 2023 Futures Contract are an option series and are calculated together.

The following factors are required to determine the Daily Settlement Prices for all options in an option series:

- The Daily Settlement Price for the underlying Futures Contract

- The volatility for the At-the-Money Exercise Price (ATM) from the previous Trading Day

- The volatility variations from the ATM for all other Exercise Prices in the option series (volatility curve)

- Trades for each Exercise Price for the Trading Day

- Orders that meet the requirements of FGL Procedure 4.7.3.

- The Option Pricing Model specified in the relevant Contract Specification

When the indicative Daily Settlement Price for a Futures Contract has been calculated, as specified in Operating Rule 4.7.2, the indicative Daily Settlement Price for the option series is calculated as follows:

1   Determine the ATM for the option series.

The ATM is determined from the indicative Daily Settlement Price for the underlying Futures Contract. The ATM will be set to –

(a) The indicative Daily Settlement Price for the underlying Futures Contract rounded to the nearest Exercise Price Interval; or

(b) Where the indicative Daily Settlement Price is halfway between two (2) Exercise Price Intervals the higher Exercise Price will be used.

2   Set the volatility for the ATM.

The volatility for the (new) ATM will be set to the volatility for the ATM from the previous Trading Day.

3   Set the volatility for each Exercise Price in the option series.

    The volatility for all other Exercise Prices in the option series will be set from the volatility curve in relation to the ATM volatility and each Exercise Price's proximity to the ATM.

4   Calculate the option prices.

    Using the Exercise Price, volatility and Option Pricing Model specified in the relevant Contract Specification, calculate a price for each Exercise Price in the option series.

5   Determine if an amendment is required to the ATM option price calculated.

    The Exchange will review Trades and Orders that meet the requirements specified in FGL Procedure 4.7.3 for the ATM and consider if the option price calculated in step 4 requires amending. If it does –

    (a) The option price will be amended;

    (b) The volatility for the ATM will be reset to the volatility for this option price and will be used in Daily Settlement Price calculations for subsequent days;

    (c) The volatility for each Exercise Price will be reset as per step 3;

    (d) The option price for each Exercise Price in the option series will be recalculated as per step 4.

6   Determine if an amendment is required to the option price calculated for any Exercise Price in the option series (not the ATM).

    The Exchange will review Trades and Orders that meet the requirements specified in FGL Procedure 4.7.3 for each Exercise Price and consider if the option price calculated in step 4 requires amending. If it does –

    (a) The option price will be amended;

    (b) The volatility curve will not be amended.

Dissemination of Daily Settlement Prices and volatility curve

All Daily Settlement Prices (indicative, final and any adjustments) are available for Trading Participants and Data Vendors to download from the Trading System.

The volatilities that the Exchange uses to determine the Daily Settlement Prices for Option Contracts are also available for download from the Trading System.

Volatility curve – initial and amendments

Initial volatility curve

When a spot month option series expires, a new back month option series becomes active. The volatility curve for the new option series will be set to the previous back month option series.

Volatility for a new Exercise Price

On request from a Trading Participant, or in response to a change in the ATM, new Exercise Prices are added to an option series. These will be assigned a volatility from the volatility curve for the option series in relation to the ATM volatility and the Exercise Price's proximity to the ATM.

Maintaining a fair value for calculating Daily Settlement Pricing for option series

The Exchange when required will survey a number of Trading Participants that trade Option Contracts to obtain their opinion on what the variations to the ATM should be in the volatility curve. The Exchange will average the opinions received to determine a revised volatility curve.

On the Trading Day prior to implementing the revised volatility curve, the revised volatility curve will be disseminated to all Trading Participants. If any objections are received to the revised volatility curve, the Exchange will consider these objections prior to finalising and implementing the revised volatility curve.