Cboe NL RM Derivatives

Trading Manual

Version 1

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Contents

Chapter 1: Options and Futures Simple Book

1.1 Products and Trading Hours

Options Products

Specifications of the available option products are on the Website.

Futures Products

Specifications of the available futures products are on the Website

Options Trading Hours and Sessions

Trading hours are on the Website.

Futures Trading Hours and Sessions

Trading hours are on the Website.

Options Tick Increments

Tick increments are described in the contract specifications on the Website.

Orders entered with invalid tick sizes are rejected.

Futures Tick Increments

Tick increments are described in the contract specification on the Website.

Orders entered with invalid tick sizes are rejected.

1.2 Execution Priority and Allocation Methods

Options Execution Priority and Pro Rata Allocation Method

The Options Simple Book employs a pro rata allocation method for all products. Incoming orders execute against resting orders in the following priority:

- Best priced orders first
- Displayed orders at same price level– Size Pro Rata Allocation

Fractional contracts that occur as a result of the pro rata allocation are handled in the following manner:

- The system attempts to round up all fractional contracts that are equal to or greater than ½ contract.
- The system rounds down all fractional contracts that are less than ½ contract.
- Residual contracts are only assigned to Participants that were rounded down.

- Participants that were rounded up or not rounded at all are not eligible to receive any residual contracts.
- Priority for assigning residual contracts to eligible Participants is as follows:

    - Orders with the largest size first
    - Orders with the earliest timestamp second

Examples

Example 1: Matching Engine Cannot Always Round Up All Participants with Fractional Contracts Greater than ½

Assume series trades in 1 cent increments and orders are listed in time priority

BBO:	3.00 x 3.10
MM1:	Buy 100 @ 3.00
MM2:	Buy 100 @ 3.00
MM3:	Buy 100 @ 3.00
InboundOrd1:	Sell 20 @ 3.00

Pro Rata Calculation:

Total Buy Quantity = 300 contracts
Total Sell Quantity = 20 contracts
MM1 Allocation = 20 x (100/300) = 6.66 contracts – rounded up to 7 contracts
MM2 Allocation = 20 x (100/300) = 6.66 contracts – rounded up to 7 contracts
MM3 Allocation = 20 x (100/300) = 6.66 contracts – rounded down to 6 contracts

MM3 is rounded down due to lowest time priority.

Residual Contracts = zero

Final Allocation:

MM1 = 7 @ 3.00
MM2 = 7 @ 3.00
MM3 = 6 @ 3.00

Example 2: Matching Engine assigns residual to largest sized order first

Assume series trades in penny increments and orders are listed in time priority

BBO:	3.00 x 3.10
MM1:	Buy 400 @ 3.00
MM2:	Buy 100 @ 3.00
MM3:	Buy 100 @ 3.00
InboundOrd1:	Sell 20 @ 3.00

Pro Rata Calculation:

Total Buy Quantity = 600 contracts
Total Sell Quantity = 20 contracts
MM1 Allocation = 20 x (400/600) = 13.33 contracts – rounded down to 13 contracts
MM2 Allocation = 20 x (100/600) = 3.33 contracts – rounded down to 3 contracts
MM3 Allocation = 20 x (100/600) = 3.33 contracts – rounded down to 3 contracts

Residual Contracts = 1

Residual contract is assigned to MM1 since it has the largest size.

Final Allocation:

MM1 = 14 @ 3.00
MM2 = 3 @ 3.00
MM3 = 3 @ 3.00

Future Execution Priority and Price/Time Allocation Method

The Futures Simple Book employs a price/time allocation method for all products. Incoming orders execute against resting orders in the following priority:

- Best priced orders first
- Displayed orders at same price level– Time Priority

1.3 Priority Overlays

Options Priority Overlays

BBO Setter priority overlays are supported in the Options Simple Book.

BBO Setter Priority Overlay

A BBO Setter flag is assigned to orders from Market Makers only, which improve the Bid or Offer on the exchange. The BBO Setter flag persists in the system after prices have improved the Bid or Offer to more aggressive levels. Orders flagged as BBO Setter receive a priority allocation. Cboe NL sets the priority allocation at its absolute discretion. Cboe NL publishes the priority allocation percentage on its Website.

The BBO Setter allocation is based off the remaining quantity (not original order quantity) of the incoming order when executing at a given price level.

The remainder of the BBO Setter's order (if any) participates in the standard pro rata allocation with other Participants.

Orders that were flagged as BBO Setter and are modified to a larger quantity or different price lose the original BBO Setter status for the entire order. Orders that were flagged as BBO Setter and are partially executed retain the BBO Setter flag on the remaining quantity.

Example

Example 1: BBO Setter gets 50% Allocation and Remainder Participates in Pro Rata Allocation

Assume series trades in 1 cent increments
Assume BBO Setter Allocation = 50%

BBO:	1.00 x 1.10
MM1:	Buy 200 @ 1.01 (BBO Setter @ 1.01)
Cust1:	Buy 200 @ 1.01
MM2:	Buy 400 @ 1.01
InboundOrd1:	Sell 200 @ 1.00

Result: InboundOrd1 trades 114 contracts with MM1 @ 1.01
InboundOrd1 trades 29 contracts with Cust1 @ 1.01
InboundOrd1 trades 57 contracts with MM2 @ 1.01

Pro Rata Calculation:

Total Sell Quantity = 200 contracts
Total Buy Quantity = 800 contracts

MM1 BBO Setter Allocation = 200 x 50% = 100 contracts

MM1 Allocation = 100 x (100/700) = 14.285 contracts rounded to 14
Cust1 Allocation = 100 x (200/700) = 28.571 contracts – rounded to 29
MM2 Allocation = 100 x (400/700) = 57.142 contracts – rounded to 57

Futures Priority Overlays

No priority overlays are supported in the Futures Simple Book.

1.4 Order Types

Options Order Types

The following order types are supported in Options Simple Book:

Limit Order:
A "limit order" is an order to buy or sell a stated number of Derivatives at a specified price or better.

Market Order:
A "market order" is an order to buy or sell a stated number of Derivatives at the best price available at the time of execution.

Stop-Loss order:
A "Stop (Stop-Loss)" order is an order to buy (sell) that becomes a market order when the consolidated last sale price (excluding prices from complex order trades if outside of the best bid or offer) for a particular Derivative is equal to or above (below) the stop price specified by the Participant.

Stop-Limit order:
A "Stop-Limit" order is an order to buy (sell) that becomes a limit order when the consolidated last sale price (excluding prices from complex order trades if outside of the best bid or offer) for a particular Derivative is equal to or above (below) the stop price specified by the Participant.

Futures Order Types

The Futures Simple Book supports Limit Orders, Market Orders and Stop-Limit Orders.

1.5 Time in Force (TIF)

Options TIF

The Options Simple Book supports the following TIF instructions:

- Day – available for trading during trading hours
- IOC - Immediate or Cancel
- Fill or Kill (FOK) – Similar to IOC but are canceled if the entire order cannot be filled by one or more resting orders.
- At the Open (OPG) – Will be canceled if not executed in the opening process.
- GTC – Will be converted to Day order and are canceled at the end of current trading day.
- GTD – Will be converted to Day order and are canceled at the end of current trading day. Time may be specified to allow for cancelation before end of current trading day.

Futures TIF

The Futures Simple Book supports the same TIF values as the Options Simple Book.

1.6 Additional Order Handling Instructions

Options Order Handling Instructions

The Simple Book supports the following order handling instructions:

- Book Only – Willing to add or remove liquidity on entry

Futures Order Handling Instructions

The Futures Simple Book supports the same order handling instructions as the Options Simple Book.

1.7 Trading Capacity

Options

The Simple Book supports the following trading capacities:

- Own account (house)
- Market Maker
- Client

Futures

The Futures Simple Book supports the same trading capacities as the Options Simple Book.

1.8 Opening Auction

Options Opening Auction

An opening auction is used for the Options Simple Book opening process at the beginning of Regular Trading Hours (RTH).

The following applies in the Simple Book opening auction:

- Matched Trade Prevention is not in-effect during the matching phase of crossed-book openings.
- Quote Risk Management Risk Limits are in-effect during the Opening Process. However, risk limit trips during the matching phase of crossed-book series openings do not interrupt the opening of that series.
- RTH Risk Limits are in-effect during the RTH Opening (and during RTH live trading).
- Opening triggers must be observed in order to initiate the opening process (defined below).
- The Volume Maximizing Imbalance Minimizing ("VMIM") algorithm is used to determine the opening price for crossed books, with collars and width checks as defined below.
- For a period of time during the queuing period, Options Auction Update messages are disseminated that provide expected opening price, size and imbalance information.

Composite Market Definition

The term 'Composite Market' is used below in the presentation of Opening Information Dissemination, Maximum Width Checks and establishing Opening Collars. The following are the functions of the Composite Market in the opening auction, all of which are described in associated sections of this document:

- The Composite Market Bid Price is used to look-up Maximum Width and Opening Collar Width values from published parameter tables.
- The width of the Composite Market is the width against which Maximum Width Checks are applied.
- Opening Collars are positioned by centering the Opening Collar Width on the midpoint of the Composite Market.

Volume Maximizing Imbalance Minimizing ("VMIM") Algorithm

The opening price for a series, as well as prices disseminated in Options Auction Update messages during the Queuing Period, are computed using the Volume Maximizing Imbalance Minimizing ("VMIM") algorithm. The VMIM algorithm is summarized as follows:

1. Select the price that maximizes the number of contracts matched on the open.
2. If there are multiple prices at which the same maximum contracts are matched, select the price that minimizes the absolute imbalance, which is defined as the cumulative contracts at or above the price to buy minus the cumulative contracts at or below the price to sell.
3. If there are multiple prices at which the same maximum contracts are matched and with the equivalent minimized absolute imbalance, and the imbalance is not zero, use the sign of the imbalance to select either the highest of the prices (positive imbalance) or the lowest of the prices (negative imbalance)
4. If there are multiple prices at which the same maximum contracts are matched and zero imbalance, select the price closest to the Volume-Based Tie Breaker, which is set to the midpoint of the opening collar.

Queuing Period and Opening Information Dissemination Start Times

The start of the Queuing Period is the time at which the system begins accepting orders for queuing. Cboe NL publishes information about the start of the Queuing Period and the time at which Options Auction Update message dissemination begins on its Website. Cboe NL informs Participants of changes via a Notice.

During a portion of the Queuing Period, Options Auction Update messages are disseminated with information regarding expected opening price, size and imbalances. The table below presents fields of the Options Auction Update message:

Field	Description
Auction-Only Price	Uncollared VMIM price computed on the queuing book only.
Reference Price	Collared VMIM price computed on the queuing book only. Reference Price is zero if there is no crossing interest within the opening collars and/or the collar reference price cannot be calculated (i.e. there is no composite market or the composite market is crossed).
Indicative Price	Collared VMIM price computed on the combined queuing book and the continuous book. For opening scenarios that do not include a continuous book trading (i.e. Proprietary products) the Indicative Price and the Reference Price are identical. Indicative Price is zero if there is no crossing interest within the opening collars and/or the collar reference price cannot be calculated (i.e. there is no composite market or the composite market is crossed).
Buy Contracts	Cumulative Buy contracts at the Indicative Price and above. If Indicative Price is zero and Auction-Only Price is non-zero, then the Buy Contracts is calculated from the perspective of the Auction-Only Price.

Sell Contracts	Cumulative Sell contracts at the Indicative Price and below. If Indicative Price is zero and Auction-Only Price is non-zero, then the Buy Contracts are displayed from the perspective of the Auction-Only Price.
Opening Condition	Indication of the state of the opening process. "Would open" indicates that width checks and collars do not prevent opening. "Need quote to Open" indicates that the width check failed and the opening does not occur until the relevant market width narrows. "Crossed Composite Market" indicates that the Composite Market is crossed, which is a condition under which series does not open.
Composite Market Bid Price	Bid price of the prevailing Composite Market.
Composite Market Offer Price	Offer Price of the prevailing Composite Market.

Opening Price and Size

At the conclusion of a successful series opening an Auction Summary message is disseminated with summary trade information. The fields include the Auction Type, Price, and Contracts executed in the related Opening.

Maximum Width Checks

Maximum Composite Width ("MCW") checks are applied to all Option openings. MCW checks prevent a given series from opening if the best available Composite Market ("CM") for the series is too wide. Further, a series does not open if the CM is crossed (i.e., CM Bid is greater than CM Offer).

A series does not open if the CM is crossed. If a crossed CM exists an Options Auction Update message is disseminated with an Opening Condition value of "C", indicating "Crossed Composite Market".

On width check failure an Options Auction Update message is disseminated with an Opening Condition value of "Q", indicating "Need quote to open". The system periodically retries series openings until the width check succeeds.

If the CM is wider than the MCW, a series still opens as long as all of the following conditions exist:

- There are no quotes/orders that lock or cross with each other; and
- There are no non-Market-Maker quotes/orders that cross the CM midpoint.

Opening Collars

Opening collars are applied to openings to ensure that the Opening Price falls within a reasonable distance from the midpoint of the CM.

The collar is the midpoint of the CM plus/minus half of the Opening Collar Width ("OCW"), with a zero floor. Opening trades occur at a VMIM price within the prevailing Opening Collar. The Opening Collar Width ("OCW") is determined through a table lookup vs. the CM bid, which is defined on the Website.

Note that the Volume-Based Tie Breaker for the VMIM algorithm as presented in the "Volume Maximizing Imbalance Minimizing Algorithm" section above is set to the midpoint of the CM for all Option Class Categories.

Opening Triggers

Opening Triggers are used to transition series from Trading State “Q” (Queuing) to Trading State “R” (Opening Rotation). Trading State “R” is an intermediate state to indicate that that the system is attempting to open the series. Series transition to Trading State “T” (Trading) upon successful opening. The opening trigger is the observation of the first underlying index value after a point in time. Cboe NL publishes information about this on its Website. Cboe NL informs Participants of changes via a Notice.

Risk Limits during the Opening

During the opening auction, risk limits for RTH trading are in effect. However, within the context of a series opening, executions in the matching phase that cause a risk limit to be exceeded will not be stopped. In other words, risk limit trips do not prevent a series from opening. As a result risk limits can be exceeded as a result of a series opening. Immediately after the series opening in which the risk limit was tripped (exceeded), associated live orders are cancelled, from both simple and complex series books still in the Queuing state and those that have transitioned to RTH trading.

New orders received after the risk limit is tripped and before a risk reset operation is effected are rejected.

Mass Cancel functionality exists in the Queuing Periods, the same as in RTH trading.

Futures Opening Auction

The futures opening auction functions in the same manner as the options opening auction. Cboe NL publishes information about the Queuing Period, the Auction Update Dissemination and Opening Triggers on its Website. Cboe NL informs Participants of changes via a Notice.

1.9 AIM automated improvement mechanism (Options Only)

Note: The following section only applies to the Options Simple Book and is not supported for futures.

Options consolidators compete for their client flow by offering price improvement over current market prices. An AIM (Automated Improvement Mechanism) Request for Quote allows a consolidator to facilitate price improvement for its client flow by internalizing it with its own liquidity at or better than the displayed market prices.

These two-sided AIM orders are broadcast to encourage other Participants to participate. The order originator is rewarded an execution entitlement (percentage of the order) for bringing the order to the exchange.

Order Entry

Orders are entered through a 2-sided order entry message. The order must be marked as an AIM order. The two sides are the agency side and the contra-side. Capacity Type and Liquidity Provision Activity are defined separately for both the agency and contra-sides.

The size associated with the AIM order is the AIM Quantity. The minimum size for an AIM order is set at the product level. This is published on the Website.

The price associated with the AIM order is the AIM price. The AIM price represents the price at which the order is guaranteed an execution by the Initiating Participant (IP) if not price-improved during the exposure period.

AIM orders may be priced in the smallest tick for the product regardless of any break points.

AIM orders may only be entered during Regular Trading Hours. The instrument must be open for trading on the exchange following any opening transactions and procedures.

Drill-Through Protection is applied to both the Agency and Contra sides of the order.

The arrival of the 2-sided order in Matching Engine initiates the AIM Request for Quote. AIM Requests for Quote may not be cancelled by the initiating party regardless of the size of the order.

Simultaneous AIMs

The system allows multiple AIM Requests for Quote to run simultaneously in the same option series. AIM Requests for Quote running simultaneously operate completely independent of one another. Response orders only participate in the specific AIM Request for Quote targeted.

Agency Side

For AIM, order capacity on the Agency side may be any Customer Type. The Agency side is identified on the order through the Cross Prioritization field. Only one party can be provided on the agency side.

Contra Side Response (Initiating Participant)

The Initiating Participant must submit the contra-side response when the AIM order is submitted. The order may be traded as principal or as agent with any Capacity Type. There may be one or more counterparties with a maximum of 10 contra-parties per order. If there are multiple counterparties, the number of counterparties must be specified and detailed information must be presented for each counterparty for clearing submission. Individual Counterparties and clearing parties may be informed of executions via drop copy.

Optional Contra-Side Order Entry Features

The Initiating Participant may elect to Auto Match responses. This instructs the system to match better-priced responses received during the Request for Quote period.. The Initiating Participant may cap the

price at which it is willing to Auto Match by specifying a limit price which defines the highest or lowest price the Initiating Participant is willing to match. Alternatively, if not specified, the Auto Match instruction applies to all execution prices.

The Initiating Participant may elect to Last Priority responses if it prefers to surrender its allocation to other Participants. If elected, the system attempts to allocate size to other respondents. However, if there is insufficient size to satisfy the Agency order, the Initiating Participant is required to satisfy it.

Last Priority and Auto Match are not compatible features. If an order arrives with both features, the order is rejected.

Neither Last Priority nor Auto Match are supported on AIM orders where the contra side is exclusively client.

In the case where there are multiple Contra parties, if Last Priority or Auto Match are present on the order, they are applied to all Contras.

Order Entry Validations

Size Validations

AIM orders must meet a minimum size requirement set at the product level to start an AIM Request for Quote. AIM orders entered that do not meet the size requirement are rejected. Cboe NL at its absolute discretion sets this parameter and publishes it on its Website.

Price Validations

The price of the AIM order is restricted to minimum tick value of the Product regardless of breakpoint levels. AIM orders entered with prices below the minimum tick value are rejected.

AIM order prices must be better than the local BBO on the same side of the Agency AIM order.
AIM orders are allowed to start at prices where the Agency is at or through the opposite side local BBO. Orders in the continuous book on the opposite side of the Agency participate in the auction.

Order Exposure

Arrival of the AIM order results in the start of the AIM Request for Quote. The Agency side of the AIM orders are exposed for a time period based upon a configuration parameter. Cboe NL at its absolute discretion sets this parameter and publishes it on its Website.

Response Orders

Responses are targeted replies to the Request for Quote. During the exposure period, Participants may enter responses which reflect their willingness to participate in the AIM Request for Quote. Other resting orders and unrelated orders are eligible to execute against the AIM order but are not considered true responses.

Participants may enter multiple responses.

At a single price level:
If the size of an individual response exceeds the AIM Request for Quote Quantity, the system caps the response quantity to the size of the AIM order. If a Participant enters other responses at the same price, the system accepts the order(s) and aggregate the size with the original response size. Aggregation includes resting orders, unrelated orders and responses for a given Trading firm ID.
If the aggregate size of the Trading firm ID's responses at a given price exceeds the size of the AIM order, the size is capped at the size of the AIM order. Each price level is capped independently.
Caps are applied by Trading firm ID. Extra size is cancelled back to the Participant at the conclusion of the exposure period.

At different prices:
Responses may be entered at multiple prices. Each price level is capped independently by Trading firm ID at the size of the AIM order.

Responses must include quantity and Request for Quote ID. Responses may be cancelled or modified. After exposure, matching occurs against the AIM order. All unexecuted responses are cancelled.

The Contra cannot enter a response to the Request for Quote other than the initiating response. Unrelated orders entered by the Contra are permitted. As this may represent others in the same firm acting independently under the same Trading firm ID, these orders should be allowed to interact with the Request for Quote. If a pattern or practice emerges, this will be addressed by Market Supervision.

Unrelated Orders Resting on the Continuous Book

Unrelated orders, orders entered during the AIM Request for Quote exposure period but not targeted for a particular AIM Request for Quote, are eligible to participate in AIM Request for Quote executions. If there are resting orders on the order book, they may also participate in the AIM Request for Quote. Unrelated orders may be cancelled or modified at any time.

Publication of AIM Responses

To ensure Cboe fulfils its regulatory obligations in relation to AIM all the targeted responses including the original Contra side are published after the response period but before the execution takes place. The quantity available for matching in AIM is aggregated and displayed for each price level and flagged accordingly.

Early Termination

- Early termination results in the AIM Request for Quote being concluded before the expiration of the exposure period timer.
- Early termination of AIM Requests for Quote occurs under the following circumstances:
    - The below examples discuss incoming orders that would post on the order book causing local BBO updates.
        - Any incoming order that would be immediately traded, cancelled, or routed is not be considered.

- The arrival of an inbound non-marketable order on the same side of the agency order crossing the auction price and improving the Cboe NL BBO. (Complete the auction before processing the unrelated order.)
- The arrival of an inbound marketable order on the same side as the agency order whose size exceeds the available quote size on the opposite side in which case the AIM execution price is outside of the new Cboe NL BBO. As such, the AIM Request for Quote ends and the AIM order trades before the Cboe NL BBO is updated. (Complete the auction before processing the unrelated order.)
    - NOTE: If the inbound order trades in its entirety with the opposite side of the Cboe NL BBO within the prevailing Cboe NL BBO, this does not cause an early termination.
- When there is a trading halt in the instrument. When halts are activated, AIM Requests for Quote are early terminated without executing. The AIM Request for Quote is cancelled along with unexecuted responses.
- At the Close of trading. (Complete the AIM Request for Quote.)

- Incoming Orders that cause an AIM Request for Quote to be early terminated need to be identified as such in order information internally for the regulatory team to monitor.

Matching and Allocations

- At the conclusion of the exposure interval, the agency order trades against the responses, resting orders, and the contra side. All orders and responses are considered when allocations are determined.
- The entire order size of an AIM order is always guaranteed to trade once the AIM Request for Quote is initiated.
- Results differ based upon:
    - The prices of the responses
    - The number of responses received
    - Optional use of the Auto Match feature (with or without limits)
    - Optional use of Last Priority
- Executions begin with the best price and conclude at the Final AIM Price.
    - The Final AIM Price is the price where the remaining auction volume can be executed.
- As a rule, the Initiating Participant receives its execution entitlement at the Final AIM Price. In the case of two or more participants trading at the final AIM price the Initiating Participant will receive a percentage of the remaining AIM quantity. This parameter is set by Cboe NL and available in the Contract Specifications. The unexecuted remainder trades pro-rata between the respondents.
    - The number of Participants is based on the Trading firm ID of the responses/orders. An order and response from the same Trading firm ID are not counted as 2 Participants.
- If the Initiating Participant elects the Auto Match option, the Initiating Participant is allocated the number of contracts equal to the aggregate size of all orders and responses awarded at each price point until the balance of the Auction order can be fully executed at the Final Auction Price.
    - If the Initiating Participant caps the Auto Match by submitting a limit price above (below) which it is not willing to Auto Match, the price level must be honored in the allocation process.

    - If the Initiating Participant does not supply a limit price, Auto Match is applied at all price levels.
    - When Auto Match is specified, the allocation to the Contra at the Final Auction Price continues to be based upon the remaining order quantity.
    - When Auto Match is selected, the Initial Contra either receives an Auto Match allocation at a price level or if the price is the final auction price, the Initial Contra receives the entitlement percentage allocation of the remaining order quantity. The initial contra should not receive both an auto match and the entitlement allocation at the final auction price.
    - It is possible that when Auto Match is enabled, the final auction price is at a price better than the initial auction price that was entered. In these scenarios, the initial contra still receives the entitlement allocation at the Final Auction Price but does not receive an Auto Match allocation at the Final Auction Price.
- If the aggregate size of responses is less than the AIM order quantity, the Initiating Party is obligated to fill the unexecuted contracts as this AIM order is guaranteed to trade in full once the AIM Request for Quote is initiated.
- Any responses at prices that are more aggressive than the opposite side of the Cboe NL BBO are capped at the Cboe NL BBO.
- If a respondent has both an order on the book and a response in the auction at the same price, the response should be executed first.
- The system abides by previously established rules for pro-rata allocations and rounding. When multiple responses are at the same price, pro-rata allocation is based upon size. At the same size, time is the determining factor with the earlier time being allocated first.
    - Rounding is up if the fractional contracts are ≥ ½.
    - Rounding is down if fractional contracts are < ½.
    - Any residual contracts are assigned to those who were rounded down.
    - On the initial contra's entitlement allocation, if the calculation results in fractional contracts, the system always rounds down to the next full contract (or truncate).

Priority Quoter Allocations

Participants are incentivized to quote at the Cboe NL BBO in order to receive a priority allocation in an AIM Request for Quote. This allocation is based upon any Participant having an order represented at the top of the Cboe NL BBO on the opposite side of the AIM agency order when an AIM Request for Quote is initiated. The priority is temporary and is only related to a specific auction. If there are multiple Priority Quoters, each is rewarded based upon its quoted size. Pro-rata allocation may be required if the aggregate size of Primary Quotes exceeds the remaining size of the AIM order after the Initiating Participant Execution Entitlement has been satisfied.

If the AIM Request for Quote is going to trade at the quoted price, Priority Quoters receive their allocation at the quoted price ahead of others responding at that price. If the AIM order is going to trade at multiple price levels, the Priority Quoter is eligible to receive its priority allocation at each price level (up to the price of the quote and response)

Whether or not an AIM Request for Quote supports Priority Quotes is determined by Cboe NL at its absolute discretion and is published on the Website. Cboe NL sets the Priority Quoter allocation at the product level.

1.10 Block Trades

Options Block Trades

A Block Trade feature is available for Participants that want to cross large quantities without exposing the order to other Participants for price improvement.

Price Validations for Block Trades:

Block Trades will be executed at prices that are inside, equal to, or worse than the exchange BBO.

Crosses that will execute at prices that are through the exchange BBO will be mainly restricted to trading inside of the daily High and Low for the series.

Trades outside of the High/Low will be permitted up to a configurable percentage amount (i.e. 5% outside of daily High or Low).

If there is only one trade (representing both high and low) for the day, a buffer amount will be applied above and below the single trade price.

If no trades have occurred for the day to establish a high/low, there will be no validation.

Minimum Volume Thresholds.

Block Trades are subjected to minimum volume thresholds. Each contract's minimum volume threshold is set out in the Contract Specification.

Block Trades that do not meet the minimum size requirement are rejected.

Futures Block Trades

The futures Block Trade feature works the same as the options Block Trade feature.

1.11 Settlement Calculation

Options Settlement Calculations

Please refer to section 3.1 of the Participant Manual

Future Settlement Calculations

Please refer to section 3.1 of the Participant Manual.

1.12 Matched Trade Prevention

Options Matched Trade Prevention

Matched Trade Prevention is used to prevent Participants from trading with their own orders on the opposite side of the book.

The following Matched Trade Prevention options are supported:

- Cancel Newest
- Cancel Oldest
- Cancel Both

Participants have the ability to set up Matched Trade Prevention based on the following attributes:

- Trading firm ID
- Exchange Participant Level
- Trading firm ID/Exchange Participant and Trading Group ID (Group ID must match on both orders to prevent a trade).

Cancel Newest

With the Cancel Newest instruction, the later arriving order is canceled by the Matching Engine as soon as an Executing Firm ID (Trading firm ID) match is detected. The earlier arriving order remains posted on the book.

Cancel Oldest

With the Cancel Oldest instruction, the earlier arriving order is canceled by the Matching Engine as soon as an Trading firm ID match is detected. The later arriving order is executed, posted or routed.

Cancel Both

With the Cancel Both instruction, both the earlier arriving order and later arriving order is canceled by the Matching Engine as soon as an Trading firm ID match is detected.

Futures Matched Trade Prevention

For futures the following Matched Trade Prevention types are supported:

- Cancel Newest
- Cancel Oldest
- Cancel Both

The behavior of the above Matched Trade Prevention types functions the same as for options.

1.13 Risk Controls and Quote Risk Management

Options Risk Controls

The option risk controls are in the Risk Management Specification that is published on the Website.

Futures Risk Controls

The futures risk controls are in the Risk Management Specification that is published on the Website.

1.14 Market Data Feeds

Please refer to the Website: https://www.cboe.com/europe/derivatives/support/technical/

1.15 Market Maker Protections

This applies to options only.

Orders identified as taking liquidity are held for a period of time up to 3 milliseconds. This also applies to Stop and Stop Limit orders that are aggressively priced after being triggered. The holding period is configurable by product and is based on where underlying instruments and other options products that have similar characteristics are traded. All orders that would remove liquidity on entry are subject to the delay with the exception of Market Maker orders and quotes which are rejected.

If a delayed order is no longer identified as aggressive, it is released and becomes visible on the book. The time priority is based on when the order was released. Delayed IOC orders are immediately cancelled if they are identified as being no longer aggressive.

Order Amendments and Cancellation

A Participant can cancel an order that is being held. If an order's quantity or price is amended while being held, the hold period is reset for another full period, unless the price changes to less aggressive prices or the quantity decreases.
If a resting order's price is amended such that it becomes aggressive, the operation is treated as cancel and new. This means that the order is removed from the book and re-inserted after the hold period. Cboe NL does not consider submitting high volumes of orders with high proportion cancelled to be reasonable trading behaviour.

Options Quotes and Market Maker Orders

Options quotes are not permitted to be aggressive. Any quote identified as taking liquidity is rejected on the side that is aggressive. The non-aggressive side of the quote is posted to the book. Orders identified as market making orders are immediately rejected if aggressive.

Delay's Impact to AIM

A delayed order does not participate in AIM until live on the order book.
An aggressively priced AIM order sweeps the continuous order book immediately and without a holding period. This applies to the Agency (client side) only.

Chapter 2: Options and Futures Complex Book

2.1 Overview

Basic Complex Order functionality consists of the ability for Participants to request the exchange to create a Complex Instrument and open an order book for a specific Complex Strategy and the ability for Participants to enter multi-legged Complex Orders with one message.

2.2 Complex Order Basics

Complex Order Definition

A Complex Order is an order for two or more different options series that is sent to the exchange as a single order. Each individual component of the Complex Order is sometimes referred to as a "Leg".

Component Ratios

The quantity of each leg of a Complex Order broken down to the lowest terms determines the ratio of the Complex Order. For example, if a Participant intends to Buy 5 contracts of Option#1 and Sell 15 contracts of Option#2, the ratio for that order is 1:3. Ratio restrictions apply to prevent Participants from creating complex instruments for the sole purpose of avoiding trading restrictions in the Simple Book or to possibly avoid higher fees in the Simple Book. Cboe NL sets the maximum ratio at its absolute discretion and publishes it on the Website.

Net Price

Complex Orders are quoted in Net Price terms combining the cost of obtaining each leg of a Complex Order in its proper ratio.

Complex Instruments vs Complex Orders

Complex Instruments are what the system stores in the database that represents a specific Complex Strategy. It would be impossible for the system to have order books opened for every possible Complex Strategy so the Participant must first ask for the Complex Instrument to be created if it does not already exist. A Complex Instrument only needs to be created once and it exists in the system for the remainder of the trading day.

2.3 Complex Instrument Creation

Options Complex Instrument Creation

Cboe NL creates an order book for the Complex Instruments that are requested by our Participants.

The process that Participants use to request a Complex Instrument to be created is called the Complex Instrument Creation process.

There are two ways for Participants to create a Complex Instrument. They can send in the Complex Instrument Creation request and then submit Complex Orders for that instrument using the Complex Instrument ID, or they can enter a Complex Order for an Instrument that has not been created and the system creates the Complex Instrument and process the order in one-step.

Customer Request Process for a Complex Instrument (Two-Step Process)

Participants provide the required information necessary for Cboe NL to create a new Complex Instrument. If accepted, Cboe NL acknowledges the Complex Instrument Creation request back to the Participant with the following information:

- Complex Instrument ID#
- Definition of new Complex Instrument as created by Cboe. For each leg the following information is sent:
  - Leg Symbol
  - Leg CFI Code
  - Leg Maturity Date
  - Leg Strike Price
  - Leg Ratio Quantity
  - Leg Side
- Number of Complex Instruments the Participant has created for this Underlying

If a Complex Instrument already exists, the Participant's Complex Instrument Creation request is not rejected. The Participant is sent the definition and ID of existing Complex Instrument.

Each Participant is limited to creating a maximum number of instruments per underlying for the day. The exchange determines a maximum allowable number of instruments that can be created per underlying and publishes it on the Website. Trade Desk has the ability to create instruments intraday.

All instruments are purged at the end of the day and do not carry over to the following day.

Complex Instrument Created Automatically when Order is Sent (One-Step Process)

The process described in the above section requires the Participant to perform a two-step process when they want to trade a Complex Order. Some Participants do not want to manage the Complex Instrument IDs and prefer to send the complete component leg information on all Complex Orders. Upon receipt of the order, Cboe NL automatically creates the Complex Instrument and process the Complex Order in one step. Once the instrument is created, the Participant must continue to sending the complete information on all subsequent orders.

Creating the Complex Instrument's Structure

#	Name	Legs	Side	Ratio	Class Type	Strike	Expiration
Two Leg Strategies							
1	Long Call Calendar Spread	Leg 1 Leg 2	Buy Sell	1 1	Call Call	Same Same	Far Month Near Month
2	Long Put Calendar Spread	Leg 1 Leg 2	Buy Sell	1 1	Put Put	Same Same	Far Month Near Month
3	Bull Call Vertical Spread	Leg 1 Leg 2	Buy Sell	1 1	Call Call	Lower Higher	Same Same
4	Bear Put Vertical Spread	Leg 1 Leg 2	Buy Sell	1 1	Put Put	Higher Lower	Same Same
5	Bull Call Diagonal Spread	Leg 1 Leg 2	Buy Sell	1 1	Call Call	Lower Higher	Far Month Near Month
6	Bear Put Diagonal Spread	Leg 1 Leg 2	Buy Sell	1 1	Put Put	Higher Lower	Far Month Near Month
7	Strategy 1 (Variation of Long Call Calendar Spread)	Leg 1 Leg 2	Buy Sell	>=Sell Ratio <= Buy Ratio	Call Call	Same Same	Far Month Near Month
8	Strategy 2 (Variation of Long Put Calendar Spread)	Leg 1 Leg 2	Buy Sell	>=Sell Ratio <= Buy Ratio	Put Put	Same Same	Far Month Near Month
9	Strategy 3 (Variation of Bull Call Vertical Spread)	Leg 1 Leg 2	Buy Sell	>=Sell Ratio <= Buy Ratio	Call Call	Lower Higher	Same Same
10	Strategy 4 (Variation of Bear Put Vertical Spread)	Leg 1 Leg 2	Buy Sell	>=Sell Ratio <= Buy Ratio	Put Put	Higher Lower	Same Same
11	Strategy 5 (Variation of Bull Call Diagonal Spread)	Leg 1 Leg 2	Buy Sell	>=Sell Ratio <= Buy Ratio	Call Call	Lower Higher	Far Month Near Month
12	Strategy 6 (Variation of Bear Put Diagonal Spread)	Leg 1 Leg 2	Buy Sell	>=Sell Ratio <= Buy Ratio	Put Put	Higher Lower	Far Month Near Month
Three Leg Strategies							
13	Call Butterfly	Leg 1 Leg 2 Leg 3	Buy Buy Sell	1 1 2	Call Call Call	Lower Higher	Same Same Same

						Mid = Avg (Low and High)	
14	Put Butterfly	Leg 1 Leg 2 Leg 3	Buy Buy Sell	1 1 2	Put Put Put	Lower Higher Mid = Avg (Low and High)	Same Same Same
15	Skewed Call Butterfly	Leg 1 Leg 2 Leg 3	Buy Buy Sell	1 1 2	Call Call Call	Lower Higher Mid >= Avg (Low and High)	Same Same Same
16	Skewed Put Butterfly	Leg 1 Leg 2 Leg 3	Buy Buy Sell	1 1 2	Put Put Put	Lower Higher Mid <= Avg (Low and High)	Same Same Same
Four Leg Strategies							
17	Box Spread (Combination of Bull Call Spread and Bear Put Spread along same strikes)	Leg 1 Leg 2 Leg 3 Leg 4	Buy Buy Sell Sell	1 1 1 1	Call Put Call Put	Lower Higher Higher (same as Leg 2 strike) Lower (same as Leg 1 strike)	Same Same Same Same

Complex strategies can consist of all Buy Legs, all Sell Legs, or a combination of both Buy Legs and Sell Legs. The structure of the Complex Instrument, as created by Cboe NL through the Complex Instrument Creation process, is the ultimate determining factor as to whether a complex order is posted as a Bid or as an Offer. Complex Instruments are always created from the perspective of the buyer. Therefore, if a new order sent for a Complex Instrument, matches the structure of the instrument exactly, it is a Bid. If a new order sent for a Complex Instrument is the opposite of the instrument's structure, it is an Offer.

Futures Complex Instrument Creation

Futures do not support the Complex Instrument Creation process that is supported for options. Futures Complex Instruments are pre-defined by Cboe NL and cannot be created by Participants electronically. Participants may request the Trade Desk to create a certain instrument if it is not listed.
Futures complex instruments created by the exchange persist in the system until the instrument is no longer valid (any leg is no longer tradable) and will not be purged at the end of each trading day.

2.4 Complex Book Tick Sizes

Options Complex Tick Sizes

The Complex Book always trades in the minimum tick size for the product regardless of break points in the Simple Book.

Futures Complex Tick Sizes

The Futures Complex Book always trades in the minimum tick size for the product.

2.5 Complex Order Entry

Options Complex Order Entry

The symbol specified on a Complex Order is the Complex Instrument ID#.

Time in Force (TIF)

- Day – Will check both the Complex Book and Single Leg Books for executions on entry. Any unexecuted balance is posted to the Complex Book. Complex Options Auction (COA) eligible by default but can opt out.
- IOC – Will only check both the Complex Book and Single Leg Books for execution. Any unexecuted quantity is immediately canceled. Not COA eligible by default but can opt in.
- GTD – Will convert to Day but may be canceled by the system at the Participant's specified expiry time.
- GTC – Will convert to Day.
- OPG - At the Open (OPG) orders are Market or Limit orders that only participate in the opening process. If they are not executed in the opening process they are canceled.

Complex Book Only Instructions

The Complex Book Only instruction prevents an options order from legging into the Simple Book. Complex Book Only instruction can only be added to orders with a Day or IOC TIF.

Price

The system accepts Market Orders for Complex Option Orders. If a market order is not executable the system posts the market order on the book at its most aggressive price based on its Drill-Through Protection settings. Limit Orders must have a Net Price specified on the order.

Quantity

Quantity sent on a Complex Order represents the number of times a Participant wants to trade the Complex Instrument. For the purposes of trade printing and clearing, the quantity is multiplied by the ratio to determine the number of contracts traded for each individual leg.

Side

Buy or Sell represents whether Participant is buying entire Complex Instrument or selling the entire Complex Instrument. If a Participant sends a Buy order, he is buying the Complex Instrument's structure as defined in the system.

Routing Instructions

- Book Only – COA Eligible - Willing to trade as a remover of Liquidity and is COA eligible.
- Book Only – Not COA Eligible - Willing to trade as a remover of Liquidity but is not COA eligible.

Futures Complex Order Entry

The future complex order entry process works the same as for options with two exceptions:

- Market Orders are not accepted for Complex Future Orders;
- Complex Book only instructions are not possible.

2.6 Order Validations

Options Order Validations

Minimum and maximum price checks

There are Minimum and Maximum Price Checks by Strategy Type in place. Orders that fail the price checks are rejected.

Price Reasonability Checks (Fat Finger Checks)

The system applies Fat Finger protections to Complex Orders. Details are in the Risk Management Specification.

Max Complex Order Quantity

The ratio of the largest leg multiplied by the Complex Order quantity cannot be greater than 999,999.

Mass Cancel Capabilities

Mass Cancel functionality is available and allows users to specify which orders they want canceled: Simple Book Orders Only, Complex Orders Only, Both Simple Book and Complex Orders.

Futures Order Validations

Futures order validations work the same as for options.

2.7 Calculating the Synthetic BBO

Options Synthetic BBO

To calculate the Best Bid and Offer of a Complex Instrument, Cboe NL multiplies the Bids and Offers of each individual component and multiply it by the Leg Ratio Quantity. This is referred to as the Synthetic BBO (SBBO).

Bids and Offers for Complex Instruments can be positive values or negative values. The Bid is always looked at from the perspective of the Buyer. Since a Buyer usually expects to pay in a transaction, a positive Bid value means the Buyer is paying (Net Debit).
The Offer is always looked at from the perspective of the Seller. Since a Seller usually expects to be paid in a transaction, a positive Offer value means the Seller is being paid.

Futures Synthetic BBO

The futures synthetic BBO works the same as for options.

2.8 Matching Orders on the Complex Book

Options – Matching Orders on the Complex Book

The Options Complex Book employs a pro rata allocation method for all products.

Complex orders are required to trade within Cboe's Synthetic BBO (SBBO). While complex orders trade at a Net Price, the official trade prints must be broken out into the individual components when reported to the tape. Trades are also broken out into the individual components when reported to clearing.
Individual legs of complex orders must trade at prices that are at or inside the Cboe NL BBO for each individual series.

Futures – Matching Orders on the Complex Book

The Futures Complex Book employs a price/time allocation method for all products.

Complex orders are required to trade within Cboe's Synthetic BBO (SBBO). While complex orders trade at a Net Price, the official trade prints must be broken out into the individual components when reported to the tape. Trades are also broken out into the individual components when reported to clearing.
Individual legs of complex orders must trade at prices that are at or inside the Cboe NL BBO for each individual series.

2.9 Legging into Individual Series Books

Options Legging

Often, the best price available for a complex order can be obtained by "legging" the complex order into the individual series books that make up the Complex Instrument. To match complex orders against orders on the individual series books, at least part of the complex order must be able to be filled in its proper ratio.

The pro rata allocation model for the Simple Book is used when matching against orders at the same price level in an individual series. If an event causes multiple resting complex orders in the same instrument be eligible for legging, the complex orders are sent to the Simple Book in Price Time.

The following complex orders are restricted from legging into the individual series books:

- Complex orders with two options legs where both legs are buying or both legs are selling, and both legs are calls or both legs are puts, cannot leg into the individual series books.

- Complex orders with three or four options legs where all legs are buying or all legs are selling, cannot leg into the individual series books.
- Complex orders with five or more options legs cannot leg into the individual series books.

Futures Legging

The price time allocation model for the Simple Book is used when matching against orders at the same price level in an individual series. If an event causes multiple resting complex orders in the same instrument be eligible for legging, the complex orders are sent to the Simple Book in Price Time.

2.10 Priority between the Complex Book and Simple Book

Options Priority between the Complex Book and Simple Book

The priority between the Complex Book and the Simple Book is as follows. Best priced orders on either the Complex Book or Simple Book always trade first. At the same price level, the system matches with resting orders on the Complex Book before matching with orders on the Simple Book.

Futures Priority between the Complex Book and Simple Book

Futures priority between the Complex Book and Simple Book works the same as for options.

2.11 Posting Orders on the Complex Book

Options - Posting Orders on the Complex Book

Complex Orders that cannot be executed on entry are posted to the Complex Order Book. Some Complex Orders may be marketable at the SBBO and still need to be posted to the Complex Book because there is not enough quantity available to satisfy the ratio requirements of the Complex Instrument. Additionally, legging restrictions may prevent an order from executing in the Simple Book or an order could be marked with the Complex Book Only (no legging) instruction.

Futures - Posting Orders on the Complex Book

Posting futures orders on the Complex Book works the same as for options.

2.12 Pricing Legs on Complex Book Trades

Options – Pricing Legs on Complex Book Trades

When a Complex Order trades against other orders in the Complex Book, the trade is executed at a Net Price. Each leg of a Complex Order is required to be executed and printed at prices equal to or better than the Cboe NL BBO in the individual series. These prices are calculated by Cboe NL's pricing algorithm.

Futures – Pricing Legs on Complex Book Trades

When a Complex Order trades against other orders in the Complex Book, the trade is executed at a Net Price. Each leg of a Complex Order is required to be executed and printed at prices equal to or better than the Cboe NL BBO in the individual series. These prices are calculated by Cboe NL's pricing algorithm.

2.13 Option volatility strategies

Option volatility strategies are complex instruments consisting of a combination of futures and options that are delta-neutral. The execution price of the futures leg is a fixed component of the complex instrument, set by Participants following the prevailing BBO prices. When creating an options volatility strategy instrument, a Participant must adhere to all the option leg ratio rules as specified by the exchange. Failure to do so results in a rejection of the creation request.

Trades for both the options series and futures contracts are allowed to print at prices that are through their respective Simple Book BBOs.

There is no legging into the Simple Books.

All standard complex order price validations are disabled for delta neutral instruments.

Standard quote and order risk controls apply to these instruments based on the options and futures quantities.

2.14 Complex Order Request for Quote (C-RFQ)-(Options Only)

Note: The following section applies to the Options Complex Book and is not supported for futures.

Single-Sided Complex Order Requests for Quote are supported in the Complex Book.

Initiating Single-Sided Complex Order RFQs

C-RFQs for Buy (Sell) orders are initiated on entry if the Net Limit price on the Complex Order is equal to or greater than the SBB (SBO) and better than any resting Buy (Sell) orders on the Complex Order Book. If the Net Limit Price on a Buy (Sell) order is greater than the SBO (SBB) the order is entered at the Complex Order's Net Limit price, however, it is restricted to executing within the SBBO at the end of the RFQ period.
C-RFQs are only initiated on order entry and are not initiated after a Complex Order has been posted to the order book.
The C-RFQ message indicates Event ID, Complex Instrument ID, Size, and Side. The system also has a configuration to allow Price to be included or not included on the event message.
If the event Price configuration is turned on, the Price displayed on the event message for MKT orders will be the most aggressive price allowed, which will be the opposite side Cboe SBBO.
The C-RFQ message is published on the Complex Order Book Market Data Feed.
The event runs for a configurable time period by Product Code.

Complex Orders that are in a C-RFQ process can be modified or canceled at any time.
If a Complex Order is fully canceled, the event ends immediately without executions.

If a Complex Order's quantity is partially canceled, the event continues and there are executions at the end of the event period based on the reduced quantity.
If a Complex Order's quantity is increased or the price is modified, the event ends without executions.

Responding to C-RFQs

Response Orders can only be executed against the order they are targeting as specified by the Event ID. Responders may submit multiple responses to the same event. Prices on orders can be the same or different from other responses.
Responses to C-RFQs are sent in increments that match the trading increment of the component legs. At the end of the C-RFQ event any residual quantity from the partially executed Responder Orders is cancelled. Responses can be canceled or modified at any time.

Execution and Priority of C-RFQs

Orders participating in C-RFQs are executed at the end of the event period against the best responses and complex orders on the book using pro rata.
Before executing against responses or resting orders on the Complex Book, the system checks the individual leg books to see if the C-RFQ order can receive a better price by legging in.
The system always executes against equal priced responses or resting complex orders before legging into the individual books. Response execution prices will always be capped at the better of the contra side Complex Book BBO or the contra side SBBO.
Any remaining quantity on the C-RFQ order is placed on the book if it cannot be executed, unless the order is marked IOC.

Early Termination Scenarios

If a new non-C-RFQ eligible order is entered on the same side with a better price than a C-RFQ in progress, the system ends the event immediately and executes the C-RFQ order against the best orders before posting the new non-C-RFQ eligible order to the book.
If an order is received on any leg in the Simple Book that improves the SBBO on the same side as a C-RFQ in progress to a price that is better than the event Price, the system ends the event immediately and executes the C-RFQ order against the best orders before posting the new order to the individual series book and updating the SBBO.
If a halt in the underlying security occurs or series enters a queuing state while a C-RFQ is in progress, the C-RFQ is terminated and there are no executions.

Publication of C-RFQ Responses

To ensure Cboe fulfils its regulatory obligations in relation to C-RFQ all the targeted responses are published after the response period but before the execution takes place.
The quantity available for matching in C-RFQ is aggregated and displayed for each price level and flagged accordingly.
Responders to a C-RFQ event are offered the option to not disclose their response for responses above the product specific SSTI threshold. By default all responses, including above SSTI, are published unless otherwise specified by the participant. All individual legs of the complex instrument need to be above their respective SSTI thresholds. Validation is done for each leg individually.

Option volatility strategies

Trading in Option Volatility Strategies is available through C-RFQ.

2.15 Complex Automated Improvement Mechanism (C-AIM) – (Options Only)

Note: The following section only applies to the Options Complex Book and is not supported for futures.

The system supports a Complex Automated Improvement Mechanism (C-AIM) for two-sided complex Requests for Quote. C-AIM functions in a similar manner to Simple Book AIM described in section 1.9.

2.16 Complex Book Opening Process

Options – Complex Book Opening Process

Complex Instruments can be created and Complex Orders can be sent prior to the opening auction. The system sends out Order Imbalances and Indicative Prices prior to the opening auction. The system waits for all component legs of the Complex Instrument to open on the given Cboe NL Options exchange before beginning the opening process. The system then applies a configurable Opening Delay. The Opening Delay is set at Cboe NL's absolute discretion and is published on the Website.

If there are no Complex Orders that can cross, the system opens the order book for the Complex Instrument immediately after the Opening Delay.

If there are Complex Orders that can cross, the system determines the equilibrium price where the most Complex Orders can trade. If there are multiple price levels that would result in the same number of strategies executed, the system chooses the price that would result in the smallest remaining imbalance. If there are multiple price levels that would result in the same number of strategies executed and would leave the same "smallest" imbalance, the system chooses the price that is closest to the Volume Based Tie Breaker (VBTB). If there is no valid VBTB available, the system uses the midpoint of the highest and lowest potential opening prices as the opening price. If the midpoint price would result in an invalid increment, the system rounds up to the nearest permissible increment and use that as the opening price.

If the equilibrium price is at or inside the Synthetic BBO (SBBO) for the Complex Instrument, the system opens at the equilibrium price. Orders eligible to trade at the equilibrium price are executed using a Pro Rata allocation method.

If the equilibrium price is outside the SBBO, the system sends out Imbalance, Price Collar (SBBO), and Indicative Price information. If all queued orders are Market Orders, the system cannot determine a price and does not open. If the Complex Instrument has not opened, the system releases the Complex Orders to the Complex Order Book in time priority after a configurable period of time set by Cboe NL at its absolute discretion. Orders released from the Opening Process to the Complex Book do not trigger COA auctions.

Futures – Complex Book Opening Process

The opening times for futures can be different from options. Otherwise, the opening auction mechanism works similarly.

2.17 Special Order Handling Situations

Futures and Options – Special Order Handling

Zero Bid in any Simple Book Component Leg

- The system will replace the zero Bid with the price below calculating the SBBO for each product:
    - 0.01 for EU50, DE30, and CH20
    - 0.05 for UK100 and FR40
    - 0.001 for NL25
- Since there is no actual Bid price for that leg, if a complex order is selling the zero Bid leg, it will not leg in to the Simple Book.
- Complex orders can still match against other complex orders in the book within the supplemented SBBO range.
- Complex orders that are Buying the zero Bid leg, will still be eligible for legging.

Zero Offer in any Simple Book Component Leg

- The system will replace the zero Offer with Bid price + 1 tick.
- Since there is no actual Offer price for that leg, if a complex order is buying the zero Offer leg, it will not leg in to the Simple Book.
- Complex orders can still match against other complex orders in the book within the supplemented SBBO range.
- Complex orders that are Selling the zero Offer leg, will still be eligible for legging.

Futures – Special Order Handling

Threshold Width Protections

1. The threshold price protection will be based on the width of the individual leg markets.

If the width of any leg included in the spread instrument exceeds the threshold width, trading in the spread instrument is halted.

2. When the width moves back within the allowable range on all legs, trading will resume.

2.18 Block Trades

Options Block Trades and Futures Block Trades are available in the Complex Books. They function in a similar manner as Block Trades in the Simple Books described in section 1.10. Price and size validations are applied to each individual leg.

2.19 Complex Risk Controls

Options Complex Risk Controls

The existing Simple Book risk controls incorporates complex orders into their calculations. Activity in complex orders are tracked and added to activity on individual option orders. If a risk control is triggered and all individual orders for a specific underlying are canceled, all complex orders for that same product are also canceled. Details are described in the Risk Management Specification on the Website.

Futures Complex Risk Controls

Futures Complex Risk Controls work the same as for options.

2.20 Matched Trade Prevention for Complex Orders

Options Matched Trade Prevention for Complex Orders

Matched Trade Prevention is supported for Complex Orders when interacting with orders on the Complex Book and when legging in to the individual series books.

The system only supports the following Matched Trade Prevention options for transactions within the Complex Book:

- Cancel Newest - Order with the later timestamp is canceled
- Cancel Oldest – Order with earlier timestamp is canceled
- Cancel Both – Both orders are canceled immediately

Complex orders are prevented from trading with contra side orders on the Complex Book if the specified Matched Trade Prevention identifiers (Trading firm ID/ Participant ID/Trading Group ID) are the same.

When legging in to the individual series books, the complex order is always canceled if any one leg on the individual series book matches the Matched Trade Prevention identifiers at the executing price level. This is regardless of the Matched Trade Prevention instruction (cancel oldest, newest, both) specified on either order. Matched Trade Prevention is applied based on the first order it encounters with a matching identifier when executing under normal priority rules.

If the Matched Trade Prevention Method (Cancel Newest, Oldest, Both) is different on the inbound complex order and the resting complex order, the system uses the method specified on the inbound order.

Futures Matched Trade Prevention for Complex Orders

Futures Matched Trade Prevention for Complex Orders works the same as for options.

2.21 Complex Market Data Feeds

Please refer to the Website: https://www.cboe.com/europe/derivatives/support/technical/

2.22 Open/Close Indicator for Complex Orders

For Complex Orders the Open/Close indicator must be specified for each leg of a complex order individually. Market Makers may leave field blank or populate with “N”.

2.23 Complex Book Market Maker Protections

An order that can leg into the Simple Book is subject to similar holding behaviour as Simple Book orders (see section 1.15) when identified as aggressive on entry or amendment.

If a complex order is already on the order book and a change (new order, updated quote) in the simple order books causes the complex order to be executable, the match happens immediately without being held.

Complex orders that are not eligible to leg into the Simple Book are not subject to a delay including when it is executable against a resting Complex Book order.

C-RFQ residual orders are executed immediately on the book without further delay.