14 December 2017

Exchange Notice

Derivatives – Product Information 87/17

Order-to-Trade Ratio Calculation for Equity Derivatives (MiFID II)

In response to legislation implementing MiFID II, Nasdaq Stockholm will introduce order-to-trade ratio (OTR) calculations on the equity derivatives market. This notice contains information on the calculation methodology and the maximum ratios that will be applied effective 2 Jan 2018.

Under the new procedure the exchange will calculate and monitor the order-to-trade ratio of each member and participant category (non-MM and MM) and every sub-class of derivatives, in number and volume terms respectively. As set out in the exchange rules of Nasdaq Derivatives Markets, members may not exceed the relevant maximum ratios that apply per sub-class as determined by the exchange and made available in the Genium INET Market Model document from time to time. The maximum OTR for a particular sub-class (e.g. OMXS30 index futures, VOLVB stock options) will be deemed to have been exceeded by a member during a trading day if the trading activity of that member and participant category, during opening hours, exceeds either or both of the two ratios. Specific higher maximum ratios will be applied for market making activity.

Daily OTR levels will be made available to members via a new report in the Nasdaq Member Portal. The report will for every sub-class include information on the total number of orders, the total volume of orders, the total number of trades as well as the total volume of trades in the non-market making and the market making category respectively. The report will also include the applicable maximum ratios. For more information on the OTR report and how to access the data please see the connectivity and access section of the Genium INET trading platform website.

Please see pages 2 to 4 in this notice for details on the counting methodology and applicable max ratios.

Document References:
- 2A.3.6 of the Exchange Rules of Nasdaq Derivatives Markets
- Section 4.8 and Appendix P in Genium INET Market Model document for Nasdaq Derivatives Markets

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Nasdaq Derivatives Markets

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Order-to-Trade Ratio Calculation Methodology

Formulas for Non-MM Category:

$$OTR_{Nbr} = \frac{\sum Orders}{\sum Trades} - 1$$

$$OTR_{Vol} = \frac{\sum Order\ Volume}{\sum Trade\ Volume} - 1$$

Where,

- With respect to the numerator all single orders not having order capacity set to market making are counted in accordance with the method described below.
- With respect to the denominator, all trades executed in the central limit order book not having trading capacity set to market making are counted. Where no trades have taken place, the ratio is equal to the numerator.

Formulas for MM Category:

$$MM\_OTR_{Nbr} = \frac{\sum MM\ Orders/Quotes}{\sum MM\ Trades} - 1$$

$$MM\_OTR_{Vol} = \frac{\sum MM\ Order/Quote\ Volume}{\sum MM\ Trade\ Volume} - 1$$

Where,

- With respect to the numerator and futures contracts, all single orders and mass quotes having order capacity set to market making are counted in accordance with the method described below.
- With respect to the numerator and option contracts, all mass quotes are counted in accordance with the method described below.
- With respect to the denominator and futures contracts, all trades executed in the central limit order book having trading capacity set to market making are counted.
- With respect to the denominator and option contracts, all trades executed from mass quotes are counted.
- Where no trades have taken place, the ratio is equal to the numerator.

Order Counting Method

All explicit order/quote entries, changes and cancellations sent by the member throughout the trading day are counted depending on the order type as detailed in the table below. For the avoidance of doubt this means that the generation of implied orders and the triggering of stop orders are not counted. Similarly automatic cancellations as the result of cancel on disconnect functionality or in connection to a trading halt or suspension are not counted.

Type of order	Count
Limit – enter or cancel	1
Limit – change	2 (Counted as cancel/replace)
Stop – enter	1 (Only counted when entered, not when triggered)
Immediate (FOK, IOC)	1 (If whole order is filled) 2 (If whole or part of order is cancelled)
Iceberg/reserve	1 (Same as limit)
Market-to-limit – enter	1 (Only counted when entered, not conversion to limit if only part is filled)
Quote – add or delete	Per symbol, 2 (1 for the bid, 1 for the ask)
Re-Quote	Per symbol, 4 (cancel/replace for each side)
At open/close	1 (Only counted when entered, not when triggered)
Combination order – enter or cancel	1 (Only count explicit order)
Combination order – modify	2 (Explicit cancel/replace)

Example Calculation:

Series	Event	ID	Size	Leaves Volume	Order$_{Vol}$ Count	Order$_{Nbr}$ Count	Trade$_{Vol}$ Count	Trade$_{Nbr}$ Count
OMXS30 Dec17 1700 Calls	Enter Order	1	50	50	50	1	0	0
OMXS30 Dec17 1640 Calls	Enter Order	2	75	75	75	1	0	0
OMXS30 Dec17 1700 Calls	Cancel Order	1	50	0	50	1	0	0
OMXS30 Dec17 1640 Calls	Partial Fill (Passive)	2	25	50	0	0	25	1
OMXS30 Dec17 1640 Calls	Change Order	2	75	75	125 (50 delete + 75 add)	1+1	0	0
OMXS30 Mar18 1500 Calls	Enter & Fill Order	3	100	0	100	1	100	1

Sub-Class	∑Orders	∑Trades	OTR$_{Nbr}$	∑Order Volume	∑Trade Volume	OTR$_{Vol}$
OMXS30 Index Options	6	2	2	400	125	2.2

Maximum Order-to-Trade Ratios

Effective 2 Jan 2018 the below maximum ratios are applied per sub-class. The max ratios are assigned based on the sub-asset class. With respect to combinations, the activity is counted against the sub-class of the first leg, e.g. an order for an OMXS30 futures spread is counted against the OMXS30 index futures class.

Sub-Asset Class	Max OTR$_{Nbr}$	Max OTR$_{Vol}$	Max MM_OTR$_{Nbr}$	Max MM_OTR$_{Vol}$
Index Futures	150,000	5,000,000	1,500,000	50,000,000
Index Options	15,000	2,000,000	15,000,000	1,500,000,000
Stock Options	15,000	2,000,000	10,000,000	1,500,000,000
Stock Futures	150	50,000	1,500,000	100,000,000