GUIDELINE ON CONCENTRATION IM ADD-ONS

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SCOPE OF THIS GUIDELINE

This guideline covers the initial margin (IM) add-ons used for concentrated positions in the commodities, equities and fixed income markets. It outlines the purpose of the concentration IM add-on, the calculation approach per market as well as how the add-on is applied on clearing member accounts.

PURPOSE AND OBJECTIVE OF CONCENTRATION MARGIN ADD-ON

The purpose of the concentration IM add-on is to account for additional close-out costs for concentrated positions compared to the market capacity. The specific metrics used to measure concentration differs by market, but is always targeted to identify positions that would take longer time than the base liquidation period to close out through the default management procedures at Nasdaq Clearing. For the commodities market, average daily traded volume and open interest are used as concentration metrics, whereas the equities market uses the average daily traded volume and position size as concentration metrics, and the fixed income market uses the interest rate sensitivity DV01 as the concentration metric.

CALCULATION OF CONCENTRATION IM ADD-ON – COMMODITIES

The concentration IM add-on is applied to market participants with positions that are large in relation to the average daily trading volumes of the specific product group and maturity "bucket". In each product group, net positions are considered on both Clearing Member and Margin Calculation Account level. When assessed at the two account levels, the more concentrated of the two form the basis for the concentration add-on calculation. The add-on is applied to individual Margin Calculation Accounts (MCA) belonging to the Clearing Member or its clients.

The concentration add-on IM calculation is summarized as follows, for each concentration group[1] and maturity bucket:

1. Calculate the net exposure per concentration group and bucket on Clearing Member level and Margin Calculation Account level. For each of the two account levels, step 2-5 below is performed.

2. Calculate time required for close-out through the order book based on the net exposure of all contracts within the bucket and the average daily traded volume in that bucket.

3. If this time is greater than the base liquidation period, calculate the additional cost for market close-out and scale margins attributable to the concentration group and bucket accordingly.

4. Calculate the cost of close-out through an auction based on exposure size in relation to the total Open Interest (of all contracts within the bucket) and pre-defined "auction premia" calibrated after discussions with market participants.

5. If Step (4) outcome is lower than Step (3) outcome, apply the expected auction premium instead of the additional cost of market close-out.

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[1] Concentration groups consist of futures and forwards on the same commodity, e.g. Nordic Power Base load futures, forwards and average futures in delivery is one concentration group

6. Distribute the add-on calculated based on net exposure on Clearing Member level to underlying MCAs. Distribution is done pro-rata based on the corresponding net exposure at each MCA.

7. At each MCA, compare the distributed Clearing Member add-on to the corresponding add-on calculated based on MCA level exposures. The worst of the two is selected as the concentration add-on for the MCA. For reporting purposes, distribute the selected add-on on a pro-rata basis to the positions of the MCA.

The tables below show example auction premia for Nordic Power and maturity buckets used for Nordic Power in the calculation steps above.

Table 1: Example: Auction premia estimated through discussions with market participants for Nordic Power, expressed as a percentage of the underlying price

Net exposure (in % of OI)	Auction premium for net long positions	Auction premium for net short positions
<10%	1%	1%
10%<= & < 20%	3%	3%
20%<=	5%	4%

Table 2: Example: Maturity buckets defined based on correlations between contracts in Nordic Power

Bucket	Days
1: <3M	<90
2: 3M-6M	90<= & <180
3: 6M-1Y	180<=& <360
4: 1Y-2Y	360<=& <720
5: 2Y-4Y	720<=& <1440
6: >4Y	1440<=

CALCULATION OF CONCENTRATION IM ADD-ON – EQUITIES

The concentration IM add-on is applied to market participants with positions that are large in relation to the average daily trading volumes of a specific underlying (single name or index) and option positions that are large in relation to specific vega threshold for a specific underlying. In each product group, net positions are considered on both Clearing Member and Margin Calculation Account level. When assessed at the two account levels, the more concentrated of the two form the basis for the concentration add-on calculation. The add-on is applied to individual Margin Calculation Accounts (MCA) belonging to the Clearing Member or its clients.

The concentration IM add-on calculation is summarized as follows:

1. Calculate the net exposure per concentration group and bucket on Clearing Member level and on MCA level. For each of the two account levels, step 2-5 below is performed. The buckets are defined as net monetary exposure in the underlying as well as net vega sensitivity in a short-dated and a long-dated bucket. Note that there are two separate concentration calculations, one in terms of the net exposure ("delta") and one in terms of the vega sensitivity ("vega").

2. Delta: Calculate time required for close-out of the open position through the order book based on the net exposure of all contracts in the underlying and the average daily traded volume. If this ratio is greater than the base liquidation period, calculate the additional cost for market close-out and scale margins

attributable to the underlying accordingly. This close-out cost is capped by the estimated maximum close-out cost for a given net open position through a broker channel (pre-defined via discussions with market participants).

3. Vega: The close-out cost of the open vega position for the underlying and bucket is determined based on the estimated close-out cost utilizing broker channels. If the position is greater than the pre-defined threshold, the additional close-out cost is calculated as the net vega positions times a pre-defined multiplier corresponding to the net vega exposure.

4. For each of the delta and vega add-ons, distribute the add-on calculated based on net exposure on Clearing Member level to underlying MCAs. Distribution is done pro-rata based on the corresponding net exposure at each MCA. Once distributed, sum the delta and vega add-ons. Sum the delta and the vega concentration add-ons per underlying and bucket for the total concentration add-on per Clearing Member and distribute the add-on to underlying accounts driving the add-on pro-rata.

5. At each MCA, also sum delta and veg add-ons which have been calculated based on MCA level net exposures. Then compare the distributed Clearing Member add-on to the corresponding add-on calculated based on MCA level exposures. The worst of the two is selected as the concentration add-on for the MCA. For reporting purposes, distribute the selected add-on on a pro-rata basis to the positions of the MCA.

The tables below show example haircuts for index products (both for delta and vega exposures) as well as the bucketing used for options.

Table 3: Example: Maximum close-out cost in the broker channel for net open position in index products

Delta equivalent exposure (SEK MM)	Calibrated haircut
< 160	0.5%
160 - 320	0.6%
320 - 480	0.7%
480 - 800	0.9%
800 - 1600	1.2%
1600 - 3200	1.5%
3200 - 5000	1.8%
5000+	2.0%

Table 4: Example: Maturity buckets for options

Bucket	Days
1: Short-dated	<= 125
2: Long-dated	> 125

Table 5: Example: Additional close-out cost for an options position, index products

Vega exposure (SEK MM)	Vega multiplier
0.5	0.00

0.5 - 1	0.96
1 - 3	1.31
3 - 5	1.66
5 - 10	2.53
10 - 20	4.28
20+	5.00

CALCULATION OF CONCENTRATION IM ADD-ON – FIXED INCOME

The concentration IM add-on is applied to market participants with positions that are large in relation to pre-defined thresholds in terms of interest rate sensitivity for (DV01) for different currencies, credit categories and maturity buckets. The concentration IM add-on applied depends on the level of concentration in the specific currency, credit category and maturity bucket. Net positions on both Clearing Member level and Margin Calculation Account level forms the basis for the concentration add-on calculation. The add-on for each currency, credit category and maturity bucket is determined as the worst of the two account level calculations.

The concentration IM add-on calculation is summarized as follows:

1. Calculate the total interest rate exposure on the Clearing Member and Margin Calculation Account within a currency and maturity bucket, as well as the net credit spread exposure within a currency for inter-bank, government and mortgage exposures. Note that repos are handled separately, i.e. there are different total interest rate exposures and credit spread exposures for repos and non-repo positions.

2. Calculate the respective additional close-out cost for the bucket and currency for the four different exposures (total interest rate exposure, inter-bank credit spread exposure, government credit spread exposure and mortgage credit spread exposure) based on pre-defined liquidity haircuts.

3. Select the maximum close-out cost for the four different exposures as the add-on for the corresponding bucket and currency. Distribute the add-on calculated based on net exposures on Clearing Member level to underlying MCAs. Distribution is done pro-rata based on the corresponding net exposure at each MCA. Once distributed, the worst of the two add-ons on each MCA (the distributed Clearing Member level add-on and MCA level add-on) is selected as the final add-on for the MCA, for each bucket and currency. For reporting purposes, distribute the resulting add-on to position level on pro-data basis.

4. Sum the add-ons per repos / non-repos, currency and maturity bucket for the total concentration add-on per Margin Calculation Account.

The tables below show buckets and example haircuts.

Table 6: Example: Maturity buckets

Bucket	Time to maturity (years)
Bucket 1	0-3
Bucket 2	3-6
Bucket 3	6-11
Bucket 4	>11

Table 7: Example: DV01 thresholds and haircuts (haircuts applied for the three first levels of concentration for the SEK 0-3 year maturity bucket)

Threshold (Level of DV01 exposure, SEK MM)	Haircut for total interest rate risk and inter-bank credit exposure (bps)	Haircut for government credit exposure (bps)	Haircut for mortgage credit exposure (bps)
<1.0	0.0	0.0	0.0
1.0-2.5	1.4	1.4	1.6
2.5-5.0	2.1	2.3	2.4

APPLICATION OF CONCENTRATION IM ADD-ONS

If a Clearing Member is subject to the concentration add-on, Nasdaq Clearing will apply the concentration add-on to all accounts within the legal entity which contribute to the concentrated position, distributed pro-rata.

The concentration add-on will be visible per Margin Calculation Account and per position in the position level report.

Members can contact Nasdaq Clearing (clearing.risk@nasdaq.com) for additional details, beyond the level visible in the Position Details report.

The detailed view of the concentration IM add-on is given in the Positions and Positions Intraday reports. In the Excel and comma separated versions of the reports, the concentration IM add-on will appear in the rightmost column, here illustrated with an excerpt of the excel version:

U	V	W	X	Y
nmodity Spread Credit	Empty	Base for Margin Conc.	Margin Conc. Scaling Factor %	Included Scaling Margin
0		0	0	0

It will also be included in the overall margin requirement as part of cash optimization (and appear in related reports).

CONTACT INFORMATION

If you have any questions or require any additional guidance, please contact Nasdaq Clearing Risk Management.

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