

GUIDELINE ON WRONG WAY RISK MARGIN ADD-ON

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SCOPE OF THIS GUIDELINE

This guideline covers the Wrong Way Risk (WWR) Margin Add-on methodology applied by Nasdaq Clearing to capture WWR in cleared positions. A WWR Margin Add-on is applied to mitigate the risk that the exposure in cleared positions could increase in parallel with the deterioration of the credit worthiness of the clearing member holding those cleared positions.

The WWR Margin Add-on applies to all equity derivatives except index products. For F/I and Commodity derivatives there is currently no WWR Margin Add-on. The WWR Margin Add-on covers only direct issuer/counterparty WWR, not any broader WWR such as industry/sector or geographic region WWR.

PURPOSE AND OBJECTIVE OF WWR MARGIN ADD-ON

Nasdaq Clearing's margin methodologies are not designed to capture additional risk for cleared positions stemming from WWR as there is no factor in the methodologies that evaluates the issuer of a contract (or rather the issuer of the instrument or security that is underlying a contract) vs the holder of cleared positions in that contract. Therefore, a WWR Margin Add-on is added to the initial margin requirement to capture the risk that close-out of positions subject to WWR will be costlier than calculated by the base methodology, or that positions could not be closed-out at all due to WWR.

The WWR Margin Add-on outlined in this guideline is designed to disincentivize positions subject to WWR and to capture the additional default or close-out costs due to WWR in individual Clearing Members' portfolios. The WWR Margin Add-on applied will differ in between asset classes, but in general it applies to net long positions in own issue instruments for both House and Client positions.

For Equity derivatives will WWR Margin Add-on be based on the assumption that the price of own issue stocks becomes 0. Own issue stock includes any listed stock issued by the clearing member or an entity within the same legal group as the clearing member. The WWR Margin Add-on applies to all equity derivatives except index products.

WWR MARGIN ADD-ON METHODOLOGY

For equity derivatives the WWR Margin Add-on is determined per Margin Calculation Account (MCA) in the following three main steps, with the considerations for each step outlined below:

1. Check if the position is applicable for WWR.
 - a. If yes then re-value the position at the WWR Price Scenario.
 - i. If the margin at the WWR Price Scenario is higher (more negative) than the margin as calculated by the base methodology then this is the new margin and the WWR Margin Add-on is the difference. The WWR Margin Add-on is distributed pro-rata back to the contract level positions based on the risk margin (IM) in the WWR Price Scenario.

After the MCA margin calculation has been completed the results are aggregated to higher levels (i.e. Margin Requirement Account, MRA) using the existing margin aggregation rules.

Step 1 – A position is eligible for WWR

A position is defined as all positions (futures, forwards, different types options and delivery positions) on the same underlying single stock within a Margin Calculation Account (MCA). The possibility to build a position in an underlying stock using different kinds of derivatives means that the total (or net) exposure to the stock needs to be taken into account. This includes also delivery positions which are created during the time between expiration and settlement for physically settled contracts. It also includes exposures to a stock obtained through positions in customized stock basket forward (Custom Basket Forward, “CBF”) contracts. However if the underlying is an index then the position is not applicable for WWR Margin Add-on.

Client accounts lacking porting arrangement also qualify for WWR Margin Add-on.

Finally the applicability for WWR includes to check the relationship between issuer of the stock and the clearing member holding the position; if the entity issuing the stock belongs to the same legal group as the clearing member then it is applicable for WWR Margin Add-on.

Step 1.a. – WWR Price Scenario

In step 1.a. the position is re-valued at the WWR Price Scenario. The WWR Price Scenario is at present set to 0, but it is considered to set it to a higher value as a future model development.

For the case with WWR Price Scenario = 0 there are a few deviations from the base methodology with respect to the re-valuation calculation. The reason for this is that the base methodology aims to determine the close-out cost of a derivative, while in the WWR Price Scenario = 0 case the assumption is that there is no longer a functioning market for the stock and for derivatives on that stock, i. close-out is not applicable. These deviations are listed below.

- Forward and future prices are set to 0
- Adjustment for forward/future bid/ask spread is not applied
- Option fine tuning (bid/ask spread, reduction in time value held options, etc) is not applied

For the case with WWR price scenario > 0 a close-out is assumed and the re-valuation at the WWR Price Scenario is made using the base methodology.

Step 1.a.i – WWR Margin Add-on distribution

The WWR Margin Add-on calculated in step 1.a.i. is distributed pro-rata back to the contract level positions based on the risk margin (IM) in the WWR Price Scenario. The sum of the WWR Margin Add-on for the contract level positions thus equals the total WWR Margin Add-on for an MCA. Any contract level position having a positive risk margin (i.e. making a gain) in the WWR price scenario will not get any WWR Margin Add-on distributed to it. An example illustrating the distribution methodology is provided below.

Additional considerations

If a position is applicable for both Concentration Margin Add-on and WWR Margin Add-on then only the higher (most negative) of the two will apply.

For CBFs the WWR Price Scenario will be determined through re-pricing the basket with the applicable basket constituent’s price set to 0.

APPLICATION OF WWR MARGIN ADD-ON

WWR Margin Add-on is included in all margin calculations (both Intra-day and End-of-day) and in margin simulations.

The WWR Margin Add-on is determined per MCA and presented per MCA and instrument level position in the Positions report. The WWR margin add-on is included in the Required Initial Margin, Payment/Delivery Margin (if WWR is applicable for a delivery position), Naked Margin and Required Margin values. The WWR Margin Add-on is separately reported for information in the new Wrong Way Risk Add-on column.

Single position example

The below example on two fictive accounts SE A 1 (long position in own issue stock through a forward trade) and SE A 2 (short position in own issue stock through a forward trade) shows that a WWR Margin Add-on is charged for account SE A 1. The WWR Margin Add-on is separately reported for information in the Wrong Way Risk Add-on column.

Margin Calculation Account	Margin Class	Current	Market	Series	Grp	Lq	Sh	I	Rem.C.S	Market Val	Naked Ini	Required Ini	Payment/Deli	Naked Mar	Required Mar
Account SE A 1	'001	SEK	SWEDISH STOCK	Forw on A.stock	FOR	10	0	10		-19 560	-23 090	-170 440	0	-42 650	-190 000
Account SE A 2	'001	SEK	SWEDISH STOCK	Forw on A.stock	FOR	0	10	-10		19 560	-23 090	-23 090	0	-3 530	-3 530

ITM	Exp.Date	Time Spread Cre	Contract Spread Cre	Inter Commodity Spread Cre	Empty	Base for Margin Col	Margin Conc. Scaling Factor	Included Scaling Mar	Wrong Way Risk Add-on
	2023-06-16	0	0	0	0	-23 090	0	0	-147 350
	2023-06-16	0	0	0	0	-23 090	0	0	0

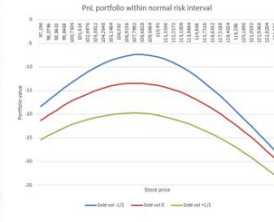
A margin simulation of account SE A 1 gives these results.

Simulation results on portfolio in instrument currency							
PORTFOLIO	INITIAL MARGIN	VARIATION MARGIN	TOTAL MARGIN REQUIREMENT	INSTRUMENT CURRENCY	NAKED MARGIN	CONCENTRATION MARGIN	WRONG WAY RISK ADD-ON
Original portfolio	-170 440	-19 560	-190 000	SEK	-42 650	0	-147 350
Simulated portfolio	-170 440	-19 560	-190 000	SEK	-42 650	0	-147 350
<i>Effect</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>SEK</i>	<i>0</i>	<i>0</i>	<i>0</i>

Portfolio example

The WWR Price Scenario in the below OMS2 vector files are in red text and having scenario number 31. In the actual model implementation in Genium INET there is a different internal handling (there will be no scenario number 31) and the external vector files for OMS2 replication will not include the WWR Price Scenario.

Series	Spot scenario	Spot value	Sold vol -1/2	Sold vol 0	Sold vol +1/2	Series	Spot scenario	Spot value	Sold vol -1/2	Sold vol 0	Sold vol +1/2	Series	Spot scenario	Spot value	Sold vol -1/2	Sold vol 0	Sold vol +1/2	Portfolio	Spot scenario	Spot value	Sold vol -1/2	Sold vol 0	Sold vol +1/2
21110	0	97,196	-0.01	-0.25	-0.84	21110	0	97,196	-12.8	-13	-13.56	2X100	0	97,196	-5.53	-7.84	-10.14	Portfolio	0	97,196	-18.55	-21.34	-25.38
21110	1	98,08	-0.02	-0.32	-0.98	21110	1	98,08	-11.02	-12.19	-12.85	2X100	1	98,0796	-5.05	-7.37	-9.68	Portfolio	1	98,0796	-17.01	-20.2	-24.49
21110	2	98,963	-0.04	-0.41	-1.14	21110	2	98,963	-11.05	-11.4	-11.14	2X100	2	98,9632	-4.37	-6.9	-9.22	Portfolio	2	98,9632	-15.7	-19.12	-23.64
21110	3	99,847	-0.06	-0.51	-1.33	21110	3	99,847	-10.18	-10.61	-11.43	2X100	3	99,8468	-4.09	-6.42	-8.75	Portfolio	3	99,8468	-14.39	-18.05	-22.84
21110	4	100,73	-0.09	-0.64	-1.53	21110	4	100,73	-9.32	-9.83	-10.72	2X100	4	100,73	-3.71	-6.05	-8.39	Portfolio	4	100,73	-13.21	-17.16	-22.17
21110	5	101,61	-0.13	-0.78	-1.79	21110	5	101,61	-8.48	-9.12	-10.05	2X100	5	101,614	-3.35	-5.7	-8.05	Portfolio	5	101,614	-12.09	-16.38	-21.6
21110	6	102,5	-0.2	-0.95	-1.99	21110	6	102,5	-7.65	-8.41	-9.45	2X100	6	102,498	-3	-5.36	-7.71	Portfolio	6	102,498	-11.05	-15.47	-21.14
21110	7	103,38	-0.29	-1.15	-2.26	21110	7	103,38	-6.86	-7.69	-8.84	2X100	7	103,381	-2.64	-5.01	-7.38	Portfolio	7	103,381	-10.08	-15	-20.74
21110	8	104,26	-0.41	-1.38	-2.93	21110	8	104,26	-6.08	-7.05	-8.33	2X100	8	104,265	-2.34	-4.66	-7.04	Portfolio	8	104,265	-9.24	-14.47	-20.37
21110	9	105,15	-0.56	-1.83	-3.86	21110	9	105,15	-5.36	-6.44	-7.63	2X100	9	105,148	-2.1	-4.32	-6.7	Portfolio	9	105,148	-8.58	-14.02	-20.05
21110	10	106,03	-0.75	-1.92	-5.2	21110	10	106,03	-4.64	-5.83	-7.09	2X100	10	106,032	-1.87	-3.97	-6.37	Portfolio	10	106,032	-8.01	-13.64	-19.86
21110	11	106,92	-0.99	-2.24	-5.96	21110	11	106,92	-4.02	-5.24	-6.6	2X100	11	106,916	-1.63	-3.73	-6.03	Portfolio	11	106,916	-7.63	-13.45	-19.75
21110	12	107,8	-1.28	-2.8	-8.95	21110	12	107,8	-3.41	-4.75	-6.12	2X100	12	107,799	-1.39	-3.5	-5.69	Portfolio	12	107,799	-7.36	-13.45	-19.71
21110	13	108,68	-1.62	-3.99	-13.7	21110	13	108,68	-2.88	-4.26	-5.63	2X100	13	108,683	-1.24	-3.26	-5.38	Portfolio	13	108,683	-7.36	-13.5	-19.75
21110	14	109,57	-2.02	-5.41	-18.8	21110	14	109,57	-2.89	-4.37	-5.75	2X100	14	109,566	-1.1	-3.03	-5.16	Portfolio	14	109,566	-7.53	-13.62	-19.81
21110	15	110,45	-2.48	-6.87	-25.7	21110	15	110,45	-1.96	-3.54	-4.73	2X100	15	110,45	-0.95	-2.8	-4.94	Portfolio	15	110,45	-7.87	-13.88	-20.21
21110	16	111,33	-2.99	-8.36	-35.76	21110	16	111,33	-1.59	-2.98	-4.37	2X100	16	111,334	-0.81	-2.57	-4.71	Portfolio	16	111,334	-8.38	-14.27	-20.6
21110	17	112,22	-3.55	-9.89	-49.27	21110	17	112,22	-1.15	-2.61	-4.02	2X100	17	112,217	-0.88	-2.34	-4.69	Portfolio	17	112,217	-9.03	-14.74	-21.05
21110	18	113,11	-4.16	-11.45	-68	21110	18	113,11	-1	-2.26	-3.66	2X100	18	113,101	-0.6	-2.16	-4.27	Portfolio	18	113,101	-9.92	-15.32	-21.53
21110	19	113,98	-4.82	-14.04	-97.36	21110	19	113,98	-0.75	-1.98	-3.3	2X100	19	113,984	-0.52	-2.02	-4.04	Portfolio	19	113,984	-10.91	-16.08	-22.06
21110	20	114,87	-5.52	-16.66	-136.51	21110	20	114,87	-0.59	-1.74	-2.97	2X100	20	114,868	-0.45	-1.88	-3.62	Portfolio	20	114,868	-12.08	-16.94	-22.69
21110	21	115,75	-6.26	-19.31	-186.55	21110	21	115,75	-0.44	-1.49	-2.73	2X100	21	115,752	-0.37	-1.74	-3.6	Portfolio	21	115,752	-13.33	-17.85	-23.43
21110	22	116,64	-7.03	-22.04	-247.11	21110	22	116,64	-0.32	-1.25	-2.49	2X100	22	116,635	-0.31	-1.6	-3.37	Portfolio	22	116,635	-14.69	-18.81	-24.2
21110	23	117,52	-7.82	-24.88	-308.22	21110	23	117,52	-0.24	-1.09	-2.25	2X100	23	117,519	-0.27	-1.46	-3.15	Portfolio	23	117,519	-16.15	-19.91	-25.04
21110	24	118,4	-8.64	-27.84	-370.8	21110	24	118,4	-0.16	-0.94	-2.01	2X100	24	118,402	-0.23	-1.33	-3.01	Portfolio	24	118,402	-17.67	-21.07	-25.98
21110	25	119,29	-9.47	-30.84	-434.95	21110	25	119,29	-0.12	-0.79	-1.77	2X100	25	119,286	-0.19	-1.19	-2.88	Portfolio	25	119,286	-19.25	-22.26	-26.97
21110	26	120,17	-10.32	-33.89	-501.58	21110	26	120,17	-0.08	-0.64	-1.6	2X100	26	120,17	-0.15	-1.1	-2.74	Portfolio	26	120,17	-20.87	-23.54	-28.06
21110	27	121,05	-11.17	-36.97	-570.3	21110	27	121,05	-0.06	-0.55	-1.46	2X100	27	121,053	-0.12	-1.02	-2.61	Portfolio	27	121,053	-22.52	-24.91	-29.21
21110	28	121,94	-12.04	-40.13	-641.23	21110	28	121,94	-0.04	-0.47	-1.31	2X100	28	121,937	-0.11	-0.95	-2.48	Portfolio	28	121,937	-24.23	-26.54	-30.39
21110	29	122,82	-12.9	-43.37	-714.34	21110	29	122,82	-0.02	-0.39	-1.17	2X100	29	122,82	-0.09	-0.87	-2.34	Portfolio	29	122,82	-25.91	-27.8	-31.59
21110	30	123,7	-13.78	-46.69	-790.75	21110	30	123,7	-0.02	-0.3	-1.02	2X100	30	123,704	-0.08	-0.8	-2.21	Portfolio	30	123,704	-27.66	-29.28	-32.83
21110	31	0	0	0	0	21110	31	0	-100	-100	-100	2X100	31	0	-100	-100	-100	Portfolio	31	0	-100	-100	-100



"Normal margin" = -32,83

Margin in case of WWR = -210

WWR margin add-on = -177,17
 Attribution of WWR add-on:
 • 2 sold 21110: 0
 • 1 sold 2U110: -92,70
 • 1 sold 2X100: -84,47

(Example without multiplying with contract size of 100)

- Portfolio with
- 2 sold Sep 110 calls (21110)
- 1 sold Sep 110 put (2U110)
- 1 sold Dec 100 put (2X100)

Risk margin (IM) based attribution		
Contract	scenario	IM in WWR WWR add-on attribution
21110	0	0
2U110	-106,66	-92,70
2X100	-97,2	-84,47

CONTACT INFORMATION

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