

(Translation)

Notification of Thailand Clearing House Co., Ltd.

Re: Calculation of Daily Risk Value in the Clearing and Settlement System (Early Warning)

TCH's Regulation 406.01 requires TCH to determine the method of calculation of the daily risk value in the clearing and settlement system (Early Warning) of general members in order to control the risk value in the clearing and settlement system. Where the member's risk value is in excess of the level calculated by TCH, such general member must place collateral in accordance with the collateral requirement which TCH will call from general members.

TCH has determined the method for calculation of the daily risk value in the clearing and settlement system (Early Warning) of general members in accordance with the attachment hereto.

This shall come into force from 13 May 2011 onwards.

Given on 20 April 2011.

(signed) –signature–

(Mrs. Nongram Wongwanich)

Authorized Person

Thailand Clearing House Co., Ltd.

(Translation)

Formula for the Calculation of the Risk Value in the Clearing and Settlement System (Early Warning)

TCH determines the calculation of the risk value in the clearing and settlement system as follows:

Variables used in the calculation

It is determined that

PSV is the Pending Settlement Value

MV is the market value of the pending settlement securities (Market Value)

Exposure_{Port} is the potential loss value arising out of trading in the house's account

Exposure_{Client} is the potential loss value arising out of trading in the client's account

MTM Exposure is the potential loss value arising from a change in the market price of securities (Mark-to-Market Exposure)

VaR is the highest loss which may occur at the designated confidence level (Value at Risk)

Collateral Requirement is the value of collateral which a member must place with TCH to accommodate the loss that may arise from the clearing and settlement transaction

Collateral Submitted is the value of collateral which a member has placed with TCH

Collateral Call is the value of collateral called by TCH from a member

σ_{Port} is the level of volatility of a group of net pending securities settlement in the house's account, which is measured by the Standard Deviation of the rate of return of such group of securities, by taking into account the number of days on which TCH can liquidate the position of such group of securities (Portfolio Sigma)

σ_{Client} is the level of volatility of a group of net pending securities settlement in the client's account, which is measured by the Standard Deviation of the rate of return of such group of securities, by taking into account the number of days on which TCH can liquidate the position of such group of securities (Portfolio Sigma)

NC is a member's Net Capital

CF is the amount of clearing funds contributed by a member

Calculation Method

1) Calculation of Exposure

$$\text{Exposure} = \text{-(PSV + MV)}$$

Explanation:

- Exposure is calculated as the difference between the PSV and MV. Profit (Exposure is less than zero) or loss (Exposure is more than zero) will arise

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from the Mark-to-Market of securities. Therefore, a member will cause a risk to TCH if Exposure is more than zero.

- If a member has net buy transactions:
 - the PSV will be less than zero because the member must deliver money to TCH in accordance with the PSV for settlement.
 - the member may cause a risk to TCH if it appears that the MV is less than the PSV.
- If a member has net sell transactions:
 - the PSV will be more than zero because the member receives money in accordance with the PSV for settlement from TCH.
 - the member may cause a risk to TCH if it appears that the MV is more than the PSV.
- TCH shall calculate Exposure arising from trading in the house's account and Exposure arising from trading in the client's account separately.

2) Calculation of Mark-to-Market Exposure

$$\text{MTM Exposure} = \text{Exposure}_{\text{Port}} + \text{Max} (0, \text{Exposure}_{\text{Client}})$$

Explanation:

- MTM Exposure is the profit (MTM Exposure is less than zero) or the loss (MTM Exposure is more than zero) calculated from the profit/loss arising from trading in the house's account and the loss arising from trading in the client's account only ($\text{Exposure}_{\text{Client}}$ is more than zero) under the principle of separate accounts and assets in accordance with the Securities and Exchange Act. Therefore, a member will cause a risk to TCH if MTM Exposure is more than zero.
- TCH may offset the profit arising from the Mark-to-Market of securities arising from trading in the house's account ($\text{Exposure}_{\text{Port}}$ is less than zero) against the loss arising from the Mark-to-Market of securities arising from trading in the client's account ($\text{Exposure}_{\text{Client}}$ is more than zero). TCH will not offset the profit arising from trading in the client's account ($\text{Exposure}_{\text{Client}}$ is less than zero) against the loss arising from trading in the house's account ($\text{Exposure}_{\text{Port}}$ is more than zero).

3) Calculation of the value at risk which may occur at the confidence level of 97.5% (Value at Risk: VaR)

$$\text{VaR} = (\text{Exposure}_{\text{Port}} + 1.96\sigma_{\text{Port}}) + \text{Max} \{0, (\text{Exposure}_{\text{Client}} + 1.96\sigma_{\text{Client}})\}$$

Explanation :

The VaR equals the sum total of the VaR arising from trading in the house's account at the confidence level of 97.5% and the VaR arising from trading in the client's account at the confidence level of 97.5%. In term of calculation of the VaR, the TCH will account only the loss arising from trading in the client's account.

4) Calculation of the Collateral Requirement

Where $\text{MTM Exposure} > \text{three times of such member's CF}$

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$$\text{Collateral Requirement} = \text{Max (MTM Exposure, VaR – 50\% NC) - CF}$$

Where MTM Exposure \leq three times of such member's CF

$$\text{Collateral Requirement} = \text{Max (0, VaR – 50\% NC – CF)}$$

Explanation:

- If MTM Exposure is higher than three times of such member's CF, the Collateral Requirement is equal to the higher value between MTM Exposure and the difference between the VaR at the confidence level of 97.5% and 50% of the member's net capital. When such higher value is obtained, it shall be deducted by CF.
- If MTM Exposure is lower than or equal to three times such member's CF, the Collateral Requirement is equal to the difference between the VaR at the confidence level of 97.5% and 50% of the member's net capital and CF. If the calculated value is less than zero, it shall be deemed that the member is not required to place collateral with TCH because the member has not caused any risk to TCH.

5) Calculation of Collateral Call

$$\text{Collateral Call} = \text{Max (0, Collateral Requirement – Collateral Submitted)}$$

Explanation:

The Collateral Call is equal to the difference between the Collateral Requirement and the Collateral Submitted. TCH shall require members to place collateral only when the calculated value is higher than zero.