

Algorithm for updating contributions paid in by clearing members to the basic resource of the Guarantee Fund for the Settlement of Stock Exchange Futures Transactions (GFSSEFT) and the Guarantee Fund for the Settlement of CeTO Market Futures Transactions (GFSCeTOFT)

Data:

- WDZ_i value of maintenance margin for clearing member i on day t ,
- $K_{i,t}$ total value of derivatives purchase transactions, executed on day t , whose purchase is related to the payment of a price, which is the responsibility of clearing member i ,
- $S_{i,t}$ total value of derivatives sale transactions, executed on day t , whose purchase is related to the payment of a price, which is the responsibility of clearing member i ,
- M_i latest updated value of contribution of clearing member i ,

Variables:

- $SO_{i,t}$ positive balance of the value of derivatives purchase and sale transactions, whose purchase is related to the payment of a price, which is the responsibility of clearing member i on day t ,
- $W_{i,t}$ corrected value of obligations to the Fund of clearing member i on day t ,
- $W_{i,w}$ preliminary value of contribution to the Fund of clearing member i ,
- $W_{i,f}$ calculated value of contribution to the Fund of clearing member i ,
- WO_i updated value of contribution to the Fund of clearing member i ,

Parameters:

- W_{\min} amount of the minimum contribution to the Fund ($W_{\min} = 70\,000$ PLN)
- P threshold parameter (expressed as a percentage), whose degree of deviation of the calculated contribution to the Fund from the contribution as a result of the previous

update creates the need for changing the value of the contribution to the separate part of the Fund ($P = 10\%$),

g parameter correcting the value of maintenance margin ($g = 15\%$),

where:

i clearing member index,

d update day index,

t calculation day index ($t = d-4, d-3, d-2, d-1, d$),

Calculation of contributions to be paid by clearing members to the basic resource of the Guarantee Fund for the Settlement of Stock Exchange Futures Transactions and the Guarantee Fund for the Settlement of CeTO Market Futures Transactions

1. Calculation of the value of payment obligations of clearing member i for balances of derivatives transactions, whose purchase is related to the payment of a price, executed on day t :

$$SO_{i,t} = \text{Max}(K_{i,t}; S_{i,t}; 0)$$

2. Determining the corrected total value of payment obligations of clearing member i on day t :

$$W_{i,t} = g \times WDZ_{i,t} + SO_{i,t}$$

3. Selection of the two highest values of payment obligations of clearing member i in the preliminary value of the Fund, as calculated on day d in the given updating period:

$$W_{i,Max} = \text{Max}\{W_{i,d}, \dots, W_{i,d-4}\}$$

$$W_{i,2Max} = \text{Max}\{\{W_{i,d}, \dots, W_{i,d-4}\} / \text{Max}\{W_{i,d}, \dots, W_{i,d-4}\}\}$$

where:

/ means “with exclusion of set”,

4. Calculation of preliminary contribution to be paid by clearing member i to the Fund on day d :

$$W_{i,w} = \left(\frac{W_{i,v,Max} + W_{i,v,2Max}}{2} \right)$$

5. Calculation of contribution to be paid by clearing member i to the Fund on day d :

$$W_{i,f} = \text{Max}(W_{i,w}; W_{\min})$$

6. Determining the updated value of contribution W_o of clearing member i :

a. If $|W_{i,f} - M_i| \leq M_i \times P$, then $W_o = M_i$

b. If $|W_{i,f} - M_i| > M_i \times P$, then $W_o = W_{i,f}$

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