SINGLE LIMIT CALCULATION PRINCIPLES ON THE SECURITIES MARKET AND DEPOSIT MARKET, THE FX MARKET AND PRECIOUS METALS MARKET, THE COMMODITIES MARKET

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These Single Limit Calculation Principles define the main principles of the Single Limit calculation under the Settlement Account (hereinafter referred to as Single Limit), which is applied in accordance with the Clearing Rules of the Central Counterparty National Clearing Centre (hereinafter referred to as the Clearing Rules) for the control of the collateral sufficiency of the Clearing Member on the following on-exchange markets, defined by the Clearing Rules:

- on the Securities Market and Deposits Market;
- on the FX Market and Precious Metals Market;
- on the Commodities Market.

1.   Terms and definitions

Asset -	security, foreign currency, precious metal or commodity, and also corresponding to them profile under the trades with which it's possible to perform clearing by the Clearing House.
Portfolio -	set of obligations and claims of the Clearing Member in all Assets and also in Russian rubles under the trades, executed with the central counterparty, recorded under the Settlement Account and Collateral of the Clearing Member in all Assets, and also in Russian rubles, recorded under the Settlement Account.

Terms, not specially defined in these Single Limit Calculation Principles are used in meanings determined by the Clearing Rules and other internal documents of the Clearing House, by the Trading Rules and other internal documents of the relevant on-exchange market, by laws and other regulatory legal acts of the Russian Federation, regulatory acts of the Bank of Russia.

2.   General provisions

2.1.   Authorized executive body of the Clearing House approves these Single Limit Calculation Principles, all changes and amendments to them, and also determines their effective date.

2.2.   Single Limit Calculation Principles and also all changes and amendments to them are disclosed on the Clearing House's website (www.nationalclearingcentre.com) not later than 5 (five) days before their effective date, unless otherwise is determined by the decision of the authorized executive body of the Clearing House.

2.3.   The Clearing House is entitled to establish for all Clearing Members or certain categories of Clearing Members for one or more assets accepted as collateral under Partially Secured Trades, the Collateral Acceptance Limit for such asset in share. The Clearing House is entitled for Clearing Members of different categories to establish a different value for the parameter of the maximum share of accounting as collateral for one or more assets.

2.4.   The Clearing House is entitled to establish for all Clearing Members or certain categories of Clearing Members, for one or more Markets, for one or more assets the feature "Asset under which covered sales are not recorded" or the feature "Asset under which partial covered sales are recorded". The Clearing House is entitled for Clearing Members of different categories to establish for different values of the covered sales recording feature for one or more assets.

3. Single Limit

3.1. Single Limit is calculated under each Settlement Account of the Clearing Member.

3.2. Single Limit is calculated in Russian rubles.

3.3. The procedure for Single Limit calculation is the same for Settlement Accounts of all levels.

3.4. Single Limit is calculated taking into account:

- Portfolio valuation;
- Portfolio market risk;
- Portfolio interest risk;
- Discount for inter products spreads in Portfolio.

3.5. Single Limit calculation structure may be described as follows:

Single Limit = Portfolio valuation – Portfolio risk

Portfolio risk = Portfolio market risk + Portfolio interest risk –

– Discount for inter products spreads in Portfolio

3.6. All components of the Single Limit are recalculated in case of risk parameters changing, executed within the mark-to-market procedure before or during the trading.

4. Portfolio valuation

4.1. Portfolio valuation is calculated as the sum of valuations of obligations and claims and valuations of the Collateral of the Clearing Member under each Asset included in Portfolio.

4.2. Portfolio valuation is calculated as follows:

$$Portfolio\ valuation = \sum_{assets} Valuation_{asset} + \sum_{dates} Net\ Position_{rub}(date)$$

$$Valuation_{asset} = \sum_{dates} Net\ Position_{asset}(date) \times Forward\ rate_{asset}(date)$$

$$Net\ Position_{asset} = \sum_{dates} Net\ Position_{asset}(date)$$

$$Net\ Position_{asset}(date) = Collateral_{asset}(date) + \sum_{trades} Claim_{asset}^{trade}(date) -$$

$$\sum_{trades} Obligation_{asset}^{trade}(date)$$

$$Net\ Position_{rub}(date) = Collateral_{rub}(date) + \sum_{trades} Claim_{rub}^{trade}(date) -$$

$$\sum_{trades} Obligation_{rub}^{trade}(date)$$

When calculating *Net Position $_{asset}$ (date) and Net Position $_{rub}$ (date)* the recording of the Collateral is made only on T0 date.

for securities:

Forward rate $_{asset}$ (date) = Settlement price $_{asset}$ (date) + REPO settlement rate $_{asset}$ (date),

Settlement price and REPO settlement rate are risk parameters, determined in accordance with Risk parameters for the Securities and Deposit Market Calculation Methodology;

for foreign currencies and precious metals:

Forward rate $_{asset}$ (date) = Central rate $_{asset}$ (date) +

+ Central Indicative swap rate $_{asset}$ (date),

Central rate and Central Indicative swap rate are risk parameters, determined in accordance with Risk parameters for the FX and Precious metals Market Calculation Methodology;

for commodities:

Forward rate $_{asset}$ (date) = Settlement price $_{asset}$ (date) + Swap settlement price $_{asset}$ (date),

Settlement price and Swap settlement price are risk parameters, determined in accordance with Methodology for calculating risk parameters on the Commodities Market.

4.3.   Obligations / claims under the trades which are derivatives, are recorded taking into account recalculation, made after the calculation of obligations to pay variation margin.

4.4.   For the Assets, accepted as collateral under Partially Secured Trades, for which the feature of marginal share of recording as collateral «Collateral Acceptance Limit» is set:
- Calculation of Net Position is executed using the adjusted Collateral value:

Collateral' $_{asset}$ = Collateral $_{asset}$ − MAX (MIN (Net Position $_{asset}$; Collateral $_{asset}$; 0) + MAX (0; MIN (Net Position $_{asset}$; Collateral $_{asset}$; Collateral Acceptance Limit × Collateral $_{asset}$)

4.5.   For the Assets, not accepted as collateral under Partially Secured Trades:
- Calculation of Net Position is executed using the adjusted Collateral value:

Collateral' $_{asset}$ = Collateral $_{asset}$ − MAX (MIN (Net Position $_{asset}$; Collateral $_{asset}$); 0)

4.6.   For the Assets under which covered sales are not recorded:

- Calculation of Net Position is executed using the adjusted Collateral value:

Collateral' $_{asset}$ = MIN (0; Collateral $_{asset}$)

4.7.   For the Assets under which the partial covered sales are recorded:

- When calculating value of Valuation $_{asset}$ and Portfolio valuation the calculation of Net Position is executed using additionally adjusted Collateral value':

Collateral" $_{asset}$ = MIN (0; Collateral' $_{asset}$)

4.8.   If the Assets described in paragraphs 4.5-4.7 are foreign currencies or precious metals and are not accepted as Collateral under Partially Secured Trades, Claims under executed trades with the arrived settlement date and Claims which will arise under the trades with the Settlement date in the current day which may be

executed on the basis of active orders (offers) are not taken into account when calculating Portfolio valuation.

4.9. By the decision of the Clearing House, the feature "Special delivery mode" can be set/changed for the Assets. The specified decision may be made by the Clearing House if the Exchange and/or the Clearing House has decided to change the terms of obligations fulfillment or other decisions stipulated by the Specification or by the Clearing Rules in relation to trades with Assets for cases of the force-major circumstances occurrence which are beyond the control of the Exchange, the Clearing House and the Trading Members which prevent or may prevent the normal procedure of settlements in the lot currency based on the results of fulfillment of obligations under trades with Assets.

Assets with the set feature "Special delivery mode" are not accepted as Collateral for Partially Secured Trades, the Collateral in such Assets is not taken into account when calculating the Single Limit.

4.10. If the Clearing Rules for the relevant on-exchange market stipulate the opportunity to register several Trade Accounts, into the structure of which one Settlement Account is included, for the purpose of Portfolio valuation calculation under such Settlement Account, the valuation of Obligations, Claims and Collateral under the Asset is calculated under each of the specified Trade Accounts and then summarized under all specified Trade Accounts.

5. Portfolio market risk

5.1. Portfolio market risk caused by the volatility of exchange rates (prices) of the Assets.

5.2. Value of the expected change of the exchange rate (price) of the Asset is characterized by the market risk rate, denominated in per cent.

5.3. Market risk value of the Asset in Russian rubles is calculated as follows:

Market risk value (rub) $_{asset}$ =

=Market risk rate (%) $_{asset}$ / 100 × Price (rub) $_{asset}$, where

Price (rub) $_{asset}$ is the Settlement price of the security or the commodity, Central rate of the foreign currency or preciuos metal.

Price decrease risk rate is used as *Market risk rate (%) $_{asset}$* for the positive Net Position, *Price increase risk rate* is used as *Market risk rate (%) $_{asset}$* for the negative Net Position.

Price decrease risk rate and Price increase risk rate are risk parameters, determined in accordance with:

- Risk parameters for the Securities and Deposit Market Calculation Methodology – for the securities;

- Risk parameters for the FX and Precious metals Market Calculation Methodology – for foreign currencies and precious metals.

Price decrease risk rate and Price increase risk rate for commodities are equal to *Market risk rate,* which is determined in accordance with Methodology for calculating risk parameters on the Commodities Market.

5.4. Portfolio market risk is calculated as follows:

$$Portfolio\ market\ risk = \sum_{assets} Market\ risk_{asset}$$

$$Market\ risk_{asset} = \left| \sum_{Dates} Net\ Position_{asset}(date) \right|$$

$$\times\ Market\ risk\ value\ (rub)_{asset}$$

5.5. Concentration risk of Obligations and Claims in the Asset is taken into account using Concentration Limits: if the absolute value of the net position in the Asset exceeds the set values of Market risk Concentration Limits, then Market risk value increases for the amount of excess.

5.6. Market risk value for Assets with set feature «Special delivery mode» is calculated as follows:

5.6.1. Net Claim / Obligation in relation of such Assets is calculated for each Settlement Date.

$$Net\ Position_{asset}(date) = \sum_{trades} Claim_{asset}^{trade}(date) -$$

$$\sum_{trades} Obligation_{asset}^{trade}(date)$$

$$Net\ Claim_{asset}(date) = MAX\ (Net\ Position_{asset}(date);0)$$

$$Net\ Obligation_{asset}(date) = MIN\ (Net\ Position_{asset}(date);0)$$

5.6.2. All Net Claims are summarized separately, and all Net Obligations are summarized separately in relation to Settlement Dates.

$$Net\ Claim_{asset} = \sum_{dates} Net\ Claim_{asset}(date)$$

$$Net\ Obligation_{asset} = \sum_{dates} Net\ Obligation_{asset}(date)$$

5.6.3. Market risk is calculated for each sum calculated according to clause 5.6.2. (*Net Claim market risk (rub)*$_{asset}$ and *Net Obligation Market Risk (rub)*$_{asset}$) taking into account clauses 5.3 and 5.5:

$$Net\ Claim\ market\ risk\ (rub)_{asset} = Net\ Claim_{asset}$$

$$\times\ Market\ risk\ value\ (rub)_{asset}$$

$$Net\ Obligation\ Market\ Risk\ (rub)_{asset} = Net\ Obligation_{asset}$$

$$\times\ Market\ risk\ value\ (rub)_{asset}$$

5.6.4. Asset market risk which is accepted for further Single Limit calculation is recognized as maximum absolute value of risk from the risk generated by the sum of Net Claims and the risk generated by the sum of Net Obligations, calculated according to clause 5.6.3.

$$Market\ risk_{asset} = MAX\ (\left| Net\ Claim\ market\ risk\ (rub)_{asset} \right|; \left| Net\ Obligation\ market\ risk\ (rub)_{asset} \right|)$$

6. Portfolio interest risk

6.1. Portfolio interest risk caused by the volatility of the Forward rate of the Asset.

6.2. Value of the expected change of the Forward rate of the Asset is characterized by the Interest risk value under the Asset, denominated in Russian rubles and set for each Settlement Date.

6.3. Portfolio interest risk is calculated as follows:

$$Portfolio\ interest\ risk = \sum_{assets} Interest\ risk_{asset}$$

$$Interest\ risk_{asset} = \left| \sum_{dates} Net\ Position_{asset}(date) \times \right.$$

$$\left. \times Interest\ risk\ value\ (rub)_{asset}(date) \right|$$

Interest risk value under the Asset, denominated in Russain rubles, is calculated as follows:

for the securities:

Buy position:

Interest risk value (rub) $_{asset}$ (date) = REPO settlement rate (rub) $_{asset}$ (date) − Lower Bound of the Interest Risks Range (rub) $_{asset}$ (date)

Sell position:

Interest risk value (rub) $_{asset}$ (date) = Upper Bound of the Interest Risks Range (rub) $_{asset}$ (date) − REPO settlement rate (rub) $_{asset}$ (date)

Lower / Upper Bound of the Interest Risks Range are risk parameters, determined in accordance with the Securities and Deposit Market Calculation Methodology.

for foreign currencies and precious metals:

Buy position:

Interest risk value (rub) $_{asset}$ (date) = Central Indicative swap rate (rub) $_{asset}$ (date) − Lower value of the Indicative swap rate (rub) $_{asset}$ (date)

Sell position:

Interest risk value (rub) $_{asset}$ (date) = Upper value of the Indicative swap rate (rub) $_{asset}$ (date) − Central Indicative swap rate (rub) $_{asset}$ (date)

Lower / Upper value of the Indicative swap rate are risk parameters, determined in accordance with the FX and Precious metals Market Calculation Methodology.

for commodities:

Buy position:

Interest risk value (rub) $_{asset}$ (date) = Swap settlement price (rub) $_{asset}$ (date) − Lower Bound of the Interest Risks Range (rub) $_{asset}$ (date)

Sell position:

Interest risk value (rub) $_{asset}$ (date) = Upper Bound of the Interest Risks Range (rub) $_{asset}$ (date) − Swap settlement price (rub) $_{asset}$ (date)

Lower / Upper Bound of the Interest Risks Range are risk parameters, determined in accordance with the Methodology for calculating risk parameters on the Commodities Market.

6.4. Concentration risk of Obligations and Claims in the Asset is taken into account using Concentration Limits: if the absolute value of the net position in the Asset exceeds the set values of Interest risk Concentration Limits, then Interest risk value under the Asset increases for the amount of excess.

7. Discount for inter products spreads in Portfolio

7.1. Discount for inter products spreads in Portfolio is given according to the Market risk under Obligations / Claims and Collateral in Assets included into Portfolio which forming the spread group (changes in exchange rates (prices) of the Assets, forming spread group, have a strong stable relation).

7.2. Discount for inter products spreads in Portfolio is calculated as the sum of discounts for inter products spreads in each spread group forming by the Assets, which Obligations / Claims and Collateral are included into the Portfolio.

7.3. Discount for inter products spread is given for total value of Market risk of the Assets including into the spread group.

$$Market\ risk^{+}_{spread\ group} = \sum_{Net\ Position_{asset} > 0} Market\ risk_{asset}$$

$$Market\ risk_{spread\ group} = \sum_{Net\ Position_{asset} < 0} Market\ risk_{asset}$$

7.4. Value of the discount for inter products spread is determined by the discount for inter products spread denominated in per cents.

7.5. Discount for inter products spread in Russian rubles is calculated as follows:

$$Discount\ (rub)_{spread\ group} = 2 \times Discount(\%)_{spread\ group} / 100 \times$$

$$\times MIN\ (Market\ risk^{+}_{spread\ group};\ Market\ risk_{spread\ group})$$