

Options exercise process

- Automatic exercise on the expiry day
- Algorithm for distribution of unexercised options
- Algorithm for distribution of options exercised early
- Exercise of specific options during interim clearing

Section1 : Automatic exercise on the expiry day

1. The exercise algorithm is as follows:
 - Automatic exercise is applicable to all exchange traded options (i.e. with any underlying assets and quarterly, monthly or weekly expirations).
 - Options are exercised automatically during the end-of-day clearing session on the expiry day (and during the interim clearing session on the expiry day for Si and Eu options; see Section 4).
 - All in-the-money options are subject to automatic exercise: call options with the strike price strictly below the settlement price of the underlying futures contract¹, and put options with the strike price strictly above the futures settlement price.
 - For at-the-money options (any call and put options with the strike price equal to the futures settlement price), half of the position is automatically exercised. If the position size is an odd number then the volume subject to exercise is rounded up ($0.5=1$) for call options and down ($0.5=0$) for put options.

For example: the buyer holds a position in 101 call options and 101 put options with the strike at 200. If the settlement price of the futures contract is 200, 51 call options ($ROUNDUP(101/2;0)=51$) and 50 put options ($ROUNDDOWN(101/2;0)=50$) will be automatically exercised.

This approach is necessary for eliminating the risk of synthetic positions that may be exercised asymmetrically.

- A request is needed for early exercise of an option. In the next clearing session the option/s are exercised for the entire amount specified by the buyer in the exercise request.
2. Firms may decline automatic exercise in the trading system by entering the number of contracts they wish to have unexercised as a negative value (i.e. with a minus figure) in the current instruction titled "Option Exercise Request". In this case, the rejection of automatic exercise is done at the level of end client and by options series. Instructions to decline automatic exercise can be submitted on the option expiry day² until 18:50 MSK (14:00 MSK for Si and Eu options; see Section 6).
 3. A broker may prohibit accepting instructions regarding options from its clients. In this case, clients can only exercise an option early or decline automatic exercise through the broker, but not on their own. The automatic exercise process remains unchanged.

¹ i.e. the settlement price determined immediately before the end-of-day clearing session on the option expiry day (the interim clearing session on the option expiry day for quarterly Si and Eu options).

² Considering that the option expiry day starts at 19:00 MSK on the previous business day as it is a standard trading day.

4. A broker may also prohibit its clients from exercising (both early and during final³ clearing session) out-of-money options on certain underlying assets. At-the-money and in-the-money options on the same underlying futures remain available for early exercise by the clients. In this case, the automatic exercise process remains unchanged.

Section 2: Algorithm for distribution of unexercised options

Where buyers have declined automatic exercise before the final clearing session, options being exercised are distributed proportionately to open interest with the resulting value rounded down.

The remaining exercised options are distributed on a last-in first-out (LIFO) basis.

Example 1. Assume there are three sellers with 100 in-the-money options each and one buyer. The buyer holds 300 contracts, of which 100 contracts will remain unexercised. In the final clearing session:

	Open interest	Number of contracts unexercised	Number of contracts exercised
Seller A	-100	34	66
Seller B	-100	33	67
Seller C	-100	33	67

Sellers B and C will receive the remaining part of options exercised (one extra contract as $300 = 66 * 3 + 2$) in addition to options distributed pro rata (66 contracts) as they sold the contracts later than others.

Example 2. There are four option sellers in the final clearing session with the following open interest:

1. client A = -2
2. client B = -2
3. client C = -11
4. client D = -20

They executed trades in the following chronological order:

1. client A - 10
2. client B - 1
3. client C - 11
4. client A + 20
5. client B - 1
6. client A - 12
7. client D - 20

In this case, they are put on the queue for assignment of option exercises as follows:

1. client B - 1
2. client C - 11

³ Final clearing means herein the end-of-day clearing session on the options expiry day (the interim clearing session on the expiry day for Si and Eu options)

3. client B - 1
4. client A - 2
5. client D - 20

Phases of making the queue:

(1) New contracts being sold are added to the queue in chronological order:

1. client A - 10
2. client B - 1
3. client C - 11

(2) Client A closes its short position and its contracts are removed from the queue (in the order of their execution):

1. client B - 1
2. client C - 11

(3) Client B sells further the contracts. Such contracts are added to the end of the queue. Contracts of client B then appear twice in the queue:

1. client B - 1
2. client C - 11
3. client B - 1

(4) Client A closes its long position, but opens a short position. D opens a short position. D's newly sold contracts added to the queue in chronological order:

1. client B - 1
2. client C - 11
3. client B - 1
4. client A - 2
5. client D - 20

Open interest totals $1 + 11 + 1 + 2 + 20 = 35$. Assume 15 options are not exercised at expiration. Twenty options ($35 - 15 = 20$) being exercised are then distributed. After the pro rata assignment process applies, firms receive:

*Seller OI * number of options being exercised/total OI*

$$A: [2 * 20 / 35] = 1$$

$$B: [2 * 20 / 35] = 1$$

$$C: [11 * 20 / 35] = 6$$

$$D: [20 * 20 / 35] = 11$$

Contracts being assigned are removed from the queue in the same order as the trades were executed. The queue is updated as follows:

1. Client C - 5
2. Client B - 1
3. Client A - 1

4. Client D – 9

The remaining one contract ($20 - 1 - 1 - 6 - 11 = 1$) is assigned on a LIFO basis (i.e. starting from the end of the queue):

1. D - 1

Final assignment of contracts being exercised:

$$A = 1$$

$$B = 1$$

$$C = 6$$

$$D = 12$$

Section 3: Algorithm for distribution of options exercised early

Where N American-style options are exercised early, counterparty sellers are assigned in accordance with the algorithm applicable to the automatic expiration (see Section 2).

Example: there is open interest in 100 contracts. Two sellers have short positions of 50 contracts each. 11 contracts are subject to early exercise. The queue for assignments is as follows (see Section 2):

1. Client A – 50

2. Client B – 50

Number of contracts where pro rata assignment applies:

$$A: [11 * 50 / 100] = 5$$

$$B: [11 * 50 / 100] = 5$$

After pro rata assignment is made, the queue is as follows:

1. Client A – 45

2. Client B – 45

The remaining one contract is assigned on a LIFO basis to Client B. Final assignment:

1. Client A – 5

2. Client B – 6

Section 4: Exercise of specific options in the interim clearing session

The settlement price of USD/RUB, EUR/RUB and CNY/RUB FX futures contracts is announced already at 12:30 MSK on the option expiry day. Therefore, the futures are settled in the interim, not end-of-day, clearing session on the expiry day (the interim clearing session period: 14:00-14:03 MSK). Accordingly, quarterly options on the futures will also expire in the interim clearing session on the same day. Weekly and monthly options are exercised in accordance with the standard procedure, i.e. in the end-of-day clearing session on the expiry day. The new automatic exercise process is applicable to options with any maturity cycle.