

Consultation: Proposed changes to the Derivatives Rules

Oslo Børs is committed to being a dynamic marketplace that continually seeks out opportunities to improve its rulebooks and procedures. In pursuit of this objective, we now wish to consult with interested parties on the following proposals:

1. Practice for the exercise of options:

Derivatives Rules A.3.1 describes the current arrangements for the exercise of stock options, which at present involve a period of 4 days from exercise to the delivery of the shares. Oslo Børs VPS wishes to harmonise its practice in this area with other international marketplaces by reducing this period to 3 days. This will have consequences in the event of exercise prior to corporate actions, where holders of stock options have so far had to exercise their options 2 days before the ex-date in order to hold shares on the record date. A change to 3 days from exercise to delivery will mean that option holders will be able to exercise options 1 day before the ex-date. A more detailed explanation is provided in **Appendix A.1** below. If the proposals are approved, the changes will come into effect from and including 3 October, and will also apply to options that are already listed at that date.

2. Delisting/Fair value calculation:

The current practice for the form of settlement for each type of contract is specified in the **Derivatives Rules at A.3.1 (stock options), A.3.2 (stock forward contracts) and A.3.3 (stock future contracts)**. In accordance with **Derivatives Rules A.2.2.12**, Oslo Børs VPS reserves the right to decide for all contract types that settlement should take the form of cash settlement based on a fixing value determined by Oslo Børs VPS as regulated by **Derivatives Rules A.2.2.14**. In the event of a derivative contract being removed from

listing, this means that holders of the contract in question will suffer a deduction for the time value from the date of delisting to the contractual end date for the contract. Such a time value may be significant, and can represent a sizeable loss for contract holders. In view of this, Oslo Børs wishes to replace the current practice for contracts that are delisted with a calculation of fair value. The introduction of a fair value calculation will mean that issuers will have to compensate holders for the loss of time value by means of cash settlement. More detailed information on the calculation methods for the contract types mentioned above can be found in **Appendix A.2** below. Third-party applications will be able to access the fair value figures through API broadcasts and transactions. For further details, see **Appendix A.2** below.

3. Exercise of stock derivatives:

The current practice for stock derivatives is set out in *Derivatives Rules A 2.1.12 and A 2.2.14*. These provisions stipulate that fixing values are based on a volume-weighted average trading price that is calculated on the expiration date. In order to make it easier for market participants to calculate fixing values, Oslo Børs VPS wishes to introduce the use of the last traded price on the expiration date as the fixing value.

Oslo Børs VPS would like to hear the views of market participants on the proposed changes. If the consultation proposals are approved, they will also be applied to Tailor Made contracts and equivalent changes will be made to the appropriate rules.

Please send your responses to this consultation to larshenrik.knutsen@oslobors.no no later than 15 August 2011. Oslo Børs VPS will then consider making the appropriate changes to the Derivatives Rules in light of the responses received.

Please address any questions to:

Lars Henrik Knutsen, Product Manager, Derivatives. Tel: (+47) 22 34 17 53,

e-mail: larshenrik.knutsen@oslobors.no

Anders Holen, Head of Trading Service, Derivatives. Tel: (+47) 22 34 17 62,

e-mail: anders.holen@oslobors.no

Yours truly

Oslo Børs VPS

Lars Henrik Knutsen

Product Manager, Derivatives

Appendix A.1: Practice for the exercise of options

Trades are currently notified to VPS with a trade date of exercise date +1. If the proposed change comes into effect, the trade date on instructions to VPS will have to change to the exercise date in order that delivery following exercise corresponds with the normal settlement cycle (t+3). This will also mean that deliveries that result from exercise on the last day including rights, will be registered with a trade date including rights and settlement on the record date. This may require a change to some third-party systems that automatically send instructions to VPS. Each member firm is asked to discuss this with its systems supplier.

Example: If the change comes into effect from and including 3 October, deliveries of stocks in respect of options with expiration date 20 October will have to be notified to VPS with trade date 20 October and settlement date 25 October (normal t+3 settlement cycle) in contrast to the current arrangements whereby the trade date would be 21 October and the settlement date would be 26 October. The opportunity currently available to issuers of call options to cover their positions in the market the day after the exercise date will disappear, since accounts will be debited after the close of trading hours and delivery must take place three days thereafter. This means that member firms will need to be able to acquire shares for their end customers with settlement of t+2 in order for them to be in a position to deliver the stocks if they do not already hold the stocks in question on their account.

Any further questions may be addressed to Oslo Clearing:

Telephone: +47 23 17 96 00

E-mail: clearing@osloclearing.no

Appendix A.2: Calculation of fair value

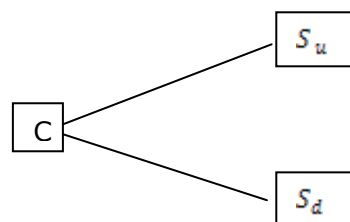
A.2.1 Stock options

Oslo Børs VPS wishes to use the Cox Ross Rubinstein model to calculate fair value for stock options. The difference between the real value and fair value of stock options will be settled separately, and where the difference is negative there will be no settlement. The current share price to be used in the model is defined as the volume weighted average price after deducting the value of any dividend payments. The time period from delisting to the actual expiry of the contract will be divided into 100 periods. C = value of a call option, P = value of a put option.

S_0 = Volume-weighted average price after deducting future dividends.

$S_u = \frac{(a^2 + b^2 + 1) + \sqrt{(a^2 + b^2 + 1) - 4a^2}}{2a}$	Formulas used to generate the tree/outcome for the underlying instrument.
$S_d = 1/S_u$	
$a = e^{(r-q)\Delta T}$	
$b^2 = a^2(e^{\sigma^2 \Delta T} - 1)$	
$C = \max(s - k, 0)$	Parameters to incorporate volatility and yield.
$P = \max(k - s, 0)$	
$\rho = \frac{a-d}{u-d}$	The option type determines the payment due on exercise.
$1 - \rho = D$	
	Calculation of the probability that the price movement in the next period will be up or down.

The option value is calculated by working back from the end date to the start date with an iterative calculation:



In a simple two-step valuation, the calculation of fair value of the option will be as follows:

$$C_0 = ((S_u - K) * \rho + (S_d - K) * (1 - \rho)) * e^{-r \cdot T}$$

In order to calculate the option value, the following parameters will be applied:

1. No. of steps (n):

Oslo Børs will use 100 steps when calculating such a value in order to achieve the necessary level of accuracy.

2. Underlying (s):

Oslo Børs VPS will define the value of the underlying as the VWAP (Volume weighted average price) at the time of delisting.

3. Volatility (σ):

Volatility will be estimated as a 10-day average over the period of 10 days before an offer is made public. If there is more than one offer, the calculation will still be based on the period before the first offer.

4. Yield curve (r):

Oslo Børs VPS will use the Norges Bank interest rates on the day of delisting, but reserves the right to use other rates in the event of exceptional circumstances in which Norges Bank does not provide interest rates that are relevant for pricing of the option in question.

5. Time (t):

The time applied in the pricing model will be the number of days between delisting and the original exercise date.

6. Dividends (q):

The discounted present value of future dividend(s) between the delisting date and the original expiry date. Estimates of dividend(s) will be based on publicly available information. If there is no information available, it may be appropriate to use historical figures.

Oslo Børs VPS reserves the right to change any of the above parameters if this is appropriate in a particular situation. Any such changes will be notified to the affected parties in good time in advance.

A.2.2 Stock futures/forwards:

In the case of stock futures and stock forwards, the calculation of fair value will be based on the theoretical future/forward price and the price of the underlying stock. The difference in value incurred by the buyer of a future or forward will be calculated using the formula:

$$F = (S - D)e^{r(T-t)} - S$$

F = Theoretical future/forward price

S = Underlying stock price (VWAP)

T-t = Time from delisting to the original exercise date

R = Interest rate

D = Discounted present value of expected dividend(s)

A.2.3 Technical information:

Third-party systems will be able to access fair value figures through API broadcasts and transactions. The fields class_no_i and settle_class_c have been updated with a new value 30: fair value. The following transactions and broadcasts include class_no_i: BD18, CQ52, CQ53. SQ1 includes settle_class_c. Member firms are asked to investigate with their systems supplier what development work may be needed to accommodate these changes. The changes do not involve a new version of API. Fair value figures will also be available through the menu item 'Clearing Information' in Secur BO.

Any further questions may be addressed to Oslo Clearing:

Telephone: +47 23 17 96 00

e-mail: clearing@osloclearing.no