Corporate Actions Policy and Procedures
For Single Stock Options
Cboe Europe Derivatives

Version 1.1
Date: October 19, 2023

1. INTRODUCTION

This Document details the policy and procedures of Cboe Europe B.V. (Cboe NL) in relation to Corporate Actions for Single Stock Options traded on the Cboe NL Regulated Market Derivatives. It should be read in conjunction with the terms of the formal Contract Specifications as described in the 'EU Derivatives Single Stock Options' document.

The publication of this Policy Document is intended to minimise uncertainty over the method of contract adjustment to be adopted by Cboe NL when a company announces a Corporate Action and, consequently, to limit any unanticipated effect on contract prices when Cboe NL thereafter announces its specific intentions on the contract adjustment.

Contracts will be adjusted in accordance with this Policy Document. In certain circumstances this may not be possible or appropriate, and Cboe NL retains the right to determine how contracts should best be adjusted (if at all) under those circumstances.

2. DEFINITIONS

Adjustment Ratio	means the ratio exercise prices and Daily Settlement Prices will be multiplied by, and Contract Sizes will be divided by, in order to adjust contract terms
Contract Size	means the number of underlying Shares or basket of Shares of one Option Contract
Contract Specification	As defined in the Cboe NL Rule Book
Corporate Action Notice	means a notice issued to the market containing information concerning Option Contract adjustments
Corporate Action	means: 1. a dividend in the form of cash or scrip, a bonus or scrip issue, a (reverse) share split, rights issue, subdivision or consolidation, demerger or any other event affecting or giving rise to a right or entitlement attaching or accruing to the shares of, or ownership of shares in a company, or 2. a takeover, merger or any arrangement or transaction which results or may result in the acquisition ofa substantial proportion of the shares of a company, or 3. any other event which, in the view of Cboe NL, necessitates an amendment to be made to the Contract Specifications in respect of the shares of a company
Cum Entitlement	means, in respect of a share, *with* the right, before a date determined and published by the relevant Listing Market, to any relevant entitlement relating thereto
Daily Settlement Price	means the price published by Cboe NL which is used by the Central Counterparty to perform daily margin calculations
Ex Entitlement	means, in respect of a share, *without* the right, on or after a date determined and published by the relevant Listing Market, to any relevant entitlement relating thereto
Exercise	means to use the right to exercise which a holder of an Option Contract has
Fair Value	means the price calculated by Cboe NL in accordance with paragraph 4.4 when Option Contracts are closed out for a cash amount
Listing Market	as defined in the Cboe NL Rule Book

Open Interest	means the total number of Option Contracts which have not expired, been settled or exercised at the close of a business day
Option Contract	means an Option Contract (cash settlement or physical delivery), admitted to trading on the Cboe NL Regulated Market Derivatives, on Shares
Package Method	means a method of adjusting Contract Specifications for existing Option Contracts, where the original Deliverable is substituted by a package of Shares or deliverable securities
Ratio Method	means a method of adjusting Contract Specifications for existing Option Contracts, where the Contract Specifications are changed by a ratio specified by Cboe NL
Relevant Entitlement	means any one or more of a cash or scrip dividend, bonus issue, scrip issue, or any other right or entitlement, attaching or accruing to, or otherwise affecting a Share or ownership of a Share
Scrip Dividend	a dividend payment where shareholders have the right to choose whether to receive a cash dividend or shares.
Share	means, as the context requires, the relevant security, depository receipt or other such instrument which is the subject of the underlying of the relevant Option Contract

3. POLICY AND CONVENTIONS

3.1 Application of Adjustments

The methodology detailed in this Policy Document is based on the principle that, when the Shares underlying an Option Contract become Ex Entitlement, these Option Contracts, if possible, should be amended to reflect in economic terms (as far as practicable) a holding equivalent to the Ex-Entitlement Share and the Relevant Entitlement.

These amendments can be effected by the following Methods:

- **Ratio Method**: by altering the exercise prices and Contract Sizes of Option Contracts using an Adjustment Ratio calculated by Cboe NL.
- **Package Method**: by substituting the underlying Shares of the Option Contract by a package of the Ex Entitlement Share and a proportionate number of Entitlements. Changes in exercise prices, Contract Sizes and settlement prices will not be made.
- **Redesignation of Underlying**: by substituting the underlying Share with another underlying Share, and applying the Ratio Method if necessary.

If these methods are not applicable due to the specifics of the Corporate Action, Cboe NL will settle (close) Options Contracts at their respective Fair Value.

Where the timing of a Corporate Action requires an adjustment to be made to Option Contracts prior to authorisation from shareholders, regulatory bodies or any other such party that has power to disqualify the Corporate Action, such adjustments will be made in order to maintain the Option Contract's relationship with the underlying Shares. Adjustments made in the above manner are irrevocable, irrespective of whether approval is or is not obtained. Each standard option series initially has a version number of 0. In the event of an adjustment in the Contract Specifications, existing option series have their version number increased by 1.

3.2 Rounding

When application of the Ratio Method requires rounding, exercise prices will be rounded to the nearest eligible price in accordance with the relevant Contract Specifications and/or trading procedures, and in the event that the unrounded exercise is exactly halfway between two eligible prices, it will be rounded up to the next eligible price. If rounding the exercise price leads to a price equal to zero, all open positions in that series will be cancelled and cash settled at intrinsic value. Contract sizes will be rounded to the nearest increment of one Share. In the event that the unrounded Contract Size is exactly halfway between two eligible Contract Sizes, it will be rounded up to the next eligible Contract Size. Where the application of the Ratio Method results in a rounded Contract Size that is equal to zero, all open positions in the Option Contract will be cancelled and cash settled using the equalisation payment methodology.

Equalisation payments will be made to compensate for the fractional Share contract value.

3.3 Notification of Corporate Actions

Cboe NL will inform participants of Corporate Actions via publication of a Corporate Action Notice. A Corporate Action Notice will be published in respect of a Corporate Action when information made public by the company gives sufficient certainty of that company's intention to effect a Corporate Action. A Corporate Action Notice will detail the adjustment methodology Cboe NL intends to apply, and the subsequent application of such adjustment.
Where necessary, at the close of business on the last day that a company's Shares are trading Cum Entitlement, and more relevant variables are known, Cboe NL will publish a Corporate Action Notice confirming adjustments made to Option Contracts.

3.4 Orders and Quotes

All outstanding orders and quotes in the order book in the adjusted series will be deleted after close of trading on the day before the adjustment takes effect.

4. METHODOLOGIES

Required adjustments to the Contract Specifications under the terms of this policy to cater for a Corporate Action can be done by either the Ratio Method, the Package Method, Redesignation or settlement at Fair Value.

In case where it is not possible or inappropriate to adjust Option Contracts with these methodologies or the Corporate Action is an event other than mentioned in this Policy Document, Cboe NL will have regard, in view of the principles mentioned in paragraph 3.1, in determining the appropriate adjustment.

4.1 Ratio Method

The Ratio Method entails the calculation of a ratio in order to adjust Contract Sizes and exercise prices simultaneously. When the Ratio Method is used to make adjustments to Option Contracts, Cboe NL will disclose the Adjustment Ratio if known or the equation necessary to calculate the ratio.

The following conventions will apply to the Ratio Method:

- The Adjustment Ratio shall be calculated by dividing the ex-entitlement holding (or value thereof) by the Cum Entitlement holding (or value thereof), such that:

$$\text{Adjustment Ratio} = \frac{\text{Ex Entitlement Holding}}{\text{Cum Entitlement Holding}}$$

- The Adjustment Ratio will be rounded, using normal mathematical rounding conventions, to eight decimal places.
- Exercise prices and settlement prices will be *multiplied* by the Ratio, Contract Sizes will be *divided* by the Ratio.
- Application of the Ratio with respect to exercise prices and Contract Sizes will be made with the rounded Adjustment Ratio.
- The adjustments will be applied at the close of business on the last business day that the Share is trading Cum Entitlement.

Equalization payments will be made for all Option Contracts to neutralize the effect observed due the rounding of the Contract Size.

4.2 Package Method

The Package Method entails substituting the underlying Shares in a Option Contract with a package containing the Ex Entitlement Share and a proportionate number of entitlements.

No adjustments will be made to Contract Sizes and exercise prices. On exercise, a package containing the Ex Entitlement Shares and the proportionate number of Entitlements in consideration multiplied by the Contract Size has to be delivered. Fractions of Shares will be settled in cash.

In all cases, no new delivery months will be introduced.

Where an underlying Share in a created package is itself subject to a Corporate Action for which the Ratio Method is applicable, Cboe NL may adjust the number of relevant Shares in the package. No adjustments will be made to the Contract Size or exercise prices.

4.3 Redesignation Method

The Redesignation Method entails:

- Substitution of the Share underlying the Option Contract by another Share;
- The product code of the Option Contract will be changed to a new product code referring to the new underlying
- Optional: Applying the Ratio Method to adjust for the valuation difference per Share;

4.4 Fair Value Method

The Fair Value Method is used for the purpose of cash settling Option Contracts.

To calculate Fair Value prices, Cboe NL will use the following parameters:

- Fair Value Volatility : Cboe NL uses settlement volatilities calculated by Cboe NL of each relevant Option Contract over the last ten trading days immediately preceding the announcement of the takeover bid. Subsequently, the average of these volatilities over this ten day trading period is calculated, excluding the lowest and highest observation of that series. The result is the Fair Value Volatility. If an Option has been listed for less than ten trading days, the average will be calculated on the basis of the number of trading days it has been listed. If the Option has been listed for less than seven trading days, the lowest and highest settlement volatility will not be excluded. Once determined, these Fair Value Volatilities are fixed until the moment of settlement, regardless of any changes in the price of the underlying Share in the intervening period.
- Dividend Forecasts : The dividend forecasts used by Cboe NL to calculate Daily Settlement Prices. Once determined these dividends are fixed until the moment of settlement.

- Interest Rates : The interest rates used by Cboe NL to calculate Daily Settlement Prices. These interest rates are the only factors which may fluctuate and will be determined on the actual settlement day.
- Underlying Price: In the case of takeovers in cash only, the takeover offer price. In other cases, the primary Closing price.

When new series are introduced after the initial publication of the Fair Value Volatilities, the volatilities of these new series will be determined as follows:

- New strike prices above or below the current strike range of that expiry month:
    a. The Fair Value Volatility of the highest existing strike will be used for all new higher strikes
    b. The Fair Value Volatility of the lowest existing strike will be used for all new lower strikes
- New strike prices in between existing strike prices of that expiry month:
  The Fair Value Volatility for the new strike will be calculated by interpolating the Fair Value Volatilities of the existing strikes in that expiry month.
- New strike prices in a new expiry month in between existing expiry months:
  The Fair Value Volatility for the strike prices in a new expiry month will be calculated by interpolation of the Fair Value Volatility of two equal strike prices in the nearest expiry months. If for a specific new strike price only one equal strike price is available, then the Fair Value Volatility will be calculated by interpolation by using the two nearest strike prices.
- New strike prices in expiry months with an expiry date after the furthest expiry month:
  The Fair Value Volatility of strike prices of the furthest existing expiry month will be used for new strike prices.

5. CORPORATE ACTION TYPES

The following section describes the adjustment methodology Cboe NL will apply to Option Contracts to cater for the following Corporate Actions:

- Dividends
- Stock splits (subdivision of Shares)
- Reverse stock splits (consolidation of Shares)
- Rights issues and open offers
- Bonus issues
- Demergers (spin offs)
- Mergers and takeovers
- Share Repurchases and tender offers

In cases in which not all shareholders are entitled to the Relevant Entitlement, Cboe NL will decide on a case by case basis whether an adjustment needs to be made. In doing so, Cboe NL will have regard, as far as practicable, to the principles detailed in paragraph 3.1.

Section 6 describes examples of each type of Corporate Action and the methodology used.

5.1 Bonus issues, stock splits, reverse stock splits and capital restructures

In case of bonus issues, stock splits and reverse stock splits the Ratio Method is applied, where the Ratio is calculated as:

$$\text{Adjustment Ratio} = \frac{C}{E}$$

Where :

C = Cum amount of Shares (old)
E = Ex amount of Shares (new)

In case of capital restructures, where an Entitlement is offered, in combination with a stock split or reversed stock split, the Ratio is calculated as:

$$\text{Adjustment Ratio} = \frac{(P-V)}{P} * \frac{C}{E}$$

Where:

P = Official closing price of the Cum Entitlement Share
V = Value of the Entitlement per Cum Entitlement Share

Exercise prices and settlement prices will be multiplied by the Ratio, Contract Sizes will be divided by the Ratio.

5.2 Rights Issues and Open Offers

In case of rights issues and open offers, the Ratio Method will be used to adjust Options Contracts.

To avoid doubt, Cboe NL will make adjustments to Option Contracts where the Entitlement creates an exclusive right to existing shareholders, irrespective of the tradability of the Entitlement. Cboe NL will interpret a rights issue or an open offer to shareholders as a Corporate Action that creates an exclusive entitlement to shareholders, insofar that the entitlement has positive value.

The Value of the Relevant Entitlement per Share can be calculated as follows:

$$V = (P - D - S) * \frac{N}{C+N}$$

Where:

V = Theoretical value of the Entitlement
P = Official closing price of the Cum Entitlement Share
D = Dividend to which new shareholders are not entitled
S = Subscription price of one new Share
C = Number of existing Shares eligible for the Entitlement
N = Number of new Shares for which C Shares held gives right to buy

On ex-date, the price of the Share will, in theory, be reduced by the mathematical value of the purchase right V, if V > 0.

The Adjustment Ratio can be calculated as:

$$\text{Adjustment Ratio} = \frac{P - \max(0,V)}{P}$$

Exercise prices and settlement prices will be multiplied by the Ratio, Contract Sizes will be divided by the Ratio.

5.3 Dividends

Option Contracts will be adjusted if dividends are *special*. Dividends can be in cash, stock or scrip dividends. Dividends are considered special when they meet one or more of the following criteria:

- The declaration by a company of a dividend *additional* to those dividends declared as part of the company's normal dividend distribution cycle. Merely an adjustment to the timing of the declaration of an expected dividend would not be considered a special dividend.
- The identification of an element of a dividend paid in line with a company's normal dividend reporting cycle as an element that is *unambiguously additional* to the company's normal payment.

Cboe NL will *not* make adjustments in the following situations:

- Payments of ordinary dividends, irrespective of how they are financed.
- The issue of redeemable Shares or any other entitlement in lieu of an ordinary dividend.
- An unexpected increase or decrease, resumption or cessation, or change in frequency to an ordinary dividend.

The Ratio Method will be applied to adjust Options Contracts, where the Adjustment Ratio is calculated as:

$$\text{Adjustment Ratio} = \frac{\mathrm{P}-\mathrm{OD}-\mathrm{SD}}{\mathrm{P}-\mathrm{OD}}$$

where:

P = Official closing price of the Cum Entitlement Share
OD = Any ordinary dividend per Share, which has the same ex-date as the special dividend
SD = Special dividend per Share

Exercise prices and settlement prices will be multiplied by the Ratio, Contract Sizes will be divided by the Ratio.

5.4 Demergers

In the case of demergers or spin offs, the adjustment method is determined as follows:

1. If the Shares of the demerged company can be delivered, settled and/or traded on the Cboe NL Market or on a market operated by Cboe Europe Limited (“Cboe UK Market") the Package Method will be applied. The underlying Share of the Option Contract will be replaced by a package containing the original Share and the appropriate number of Shares of the demerged company or companies.

2. If the Shares of the demerged company cannot be delivered, settled and/or traded on Cboe NL or Cboe UK the Ratio Method will be applied to Option Contracts.

   The Adjustment Ratio will be calculated as:

   $$\text{Adjustment Ratio} = \frac{P-V}{P}$$

   Where:

   P = Official closing price of the Cum Entitlement Share
   V = Value of demerged company per share

   Cboe NL will inform members about the procedure to determine the value of the demerged company.

   Exercise prices and Settlement Prices will be multiplied by the Ratio, Contract Sizes will be divided by the Ratio.

5.5 Mergers and takeovers

In general, options will be settled using the Fair Value Method.

However, options will be redesignated as options having the offered Share as underlying if and only if the following conditions apply:

- the Shares offered can be delivered, settled and/or traded on the Cboe NL or Cboe UK Market as from the effective date
- there are no existing options listed on the Cboe NL Regulated Market Derivatives on the offered Shares
- The Share part at the time the offer is made public is at least 33% of the total value offered
- Cboe NL decides the offered Share will have options listed on it as of effective date.

If options are redesignated, an Adjustment Ratio will be calculated.

If the offer is in Shares only:

$$\text{Adjustment Ratio} = \frac{X}{Y}$$

where Y is equal to the number of Shares offered for every X Shares held in the underlying company.

If the offer is composed of both Shares and cash:

$$\text{Adjustment Ratio} = \frac{P}{P*N+C}$$

where:

P = Official closing price of the Share of the company that is issuing the offer
N = Number of Shares offered for one Share held of target company
C = Cash element offered for one Share held of target company

Exercise prices and Settlement Prices will be multiplied by the Ratio, Contract Sizes will be divided by the Ratio.

Adjustments or settlements shall be made after the expiry of the acceptance period, depending on the result of the offer. If successful, adjustments or settlement will take place immediately after the offeror has declared the offer to be unconditional.

Once Cboe NL has determined the proportion of cash and made such announcement as to the type of adjustment methodology, the methodology will not be changed simply due to share price movements affecting the proportion of cash.

Cboe NL shall take into account publications of the offeror, the target company, authorities or similar institutions, when determining adjustments to Options Contracts.

If during the course of a takeover the offeror increases the offer consideration or makes any other change to the respective offer (such as extending the acceptance period), no new Fair Value Volatilities will be calculated. In addition, should a counter offer be launched by another company whilst an offer is still active (i.e. has not expired or been withdrawn), then the Fair Value Volatilities in relation to the initial offer will be used if the counter offer should be declared effective.

Cboe NL shall publish the effective date of the adjustment or settlement. If, with regard to an offer, the consideration is not available to the shareholders of the target company immediately after publication of the result through the bidder, Cboe NL may determine that the derivatives Option Contracts shall, until the time of payment of the consideration or of the conversion of the Shares, relate exclusively to the Shares submitted either for sale or for conversion and are to be supplied exclusively with such Shares.

The early exercise of Option Contracts shall be suspended between the end of the acceptance period or as the case may be to the end of the extended acceptance period and the official publication of the result of the offer.

Adjustments to Option Contracts will be made when a relevant offer is declared effective by the offeror and if the threshold of the majority of the outstanding Shares (50% + 1) is met.
In the case of Tender Offers, whereby the relevant offer is a mandatory offer by law, Cboe NL will use a threshold of 75% of the outstanding Shares to determine whether the relevant offer is effective.

5.6 Share Repurchases and Tender Offers

Cboe NL will generally treat instances where a company repurchases its own Shares in the market as a non-adjustable event. However, on occasions where a company makes an offer for its own Shares at a premium to the prevailing market price, and where shareholders have equal opportunity to participate in the offer, Cboe NL may, where practical, deem the Share repurchase as an adjustable event.

In this case the Ratio is calculated as:

Adjustment Ratio = $\frac{(C*P-N*T)*\frac{C}{C-N}}{C*P} = \frac{C*P-N*T}{P*(C-N)}$

Where:

C = Cum amount of outstanding Shares
P = Official closing price of the Cum Entitlement Share
N = Number of Shares bought back under the offer
T = Tender Price

For the avoidance of doubt, the Option Contracts shall only be adjusted insofar that the Cum Event Price is less than the Tender Price.

Exercise prices and Settlement Prices will be multiplied by the Ratio, Contract Sizes will be divided by the Ratio.

5.7 Delisting

Where a company is delisted from its Listing Market on request of the relevant company and, as a consequence, the underlying Shares are no longer deliverable on an exchange designated by Cboe NL or Cboe UK, Cboe NL shall use the Fair Value method to settle the open positions in the Option Contracts*.* The determination of the Fair Value Volatilities, for the purpose of settlement of the Options at their theoretical Fair Value, shall be based on the settlement prices of the relevant Options series over a ten business day period preceding the public announcement of the (intended) delisting by the company.

Where a Share is delisted from Cboe NL or Cboe UK as a consequence, amongst other things, of liquidation or bankruptcy, Option Contracts will be settled in a manner deemed to befit the circumstances at hand. Where the underlying Shares in question are suspended from trading but still transferable through the relevant settlement system, trading, exercise and settlement in the Option Contracts may still be allowed.

5.8 Special Circumstances

If the underlying Shares of the Options Contracts are no longer tradable and/or deliverable due to circumstances not described in the Corporate Actions Policy, Cboe NL will decide on a case –by-case basis what the consequences for the Options will be and will inform the regulator before issuing a Corporate Action Notice.

6. EXAMPLES

For these examples a Company A (ISIN AA12345678) with Share price 50 is used, and a Company B (ISIN BB87654321) with Share price 25.
Options with Product Code AO with strike 50 and Contract Size 100 are denoted on share A.
Options with Product Code BO with strike 25 and Contract Size 100 are denoted on share B.

6.1 Bonus Issues

Bonus issues increase a company's outstanding shares but not its market capitalization. Companies usually fund a bonus issue through profits or existing share reserves. The nominal value of Shares will not change. ISIN of the underlying is unchanged.

Company A decides to issue 1 bonus for each 4 shares held

Method: Ratio Method
Cum amount of shares = 4
Ex amount of shares = 5
Adjustment Ratio = $\frac{\mathrm{C}}{\mathrm{E}} = \frac{4}{5} = 0.8$

Options Contracts will be adjusted:

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	AO	40	125	A	AA12345678

6.2 Stock Split

A Stock Split means that each Share will be subdivided into two or more Shares. Each shareholder will have more shares but each share will have a lower nominal value. The Contracts will be redesignated as Contracts on the new Shares, where the Share generally will have a new ISIN.

Company A announces a 3 for 1 stock split. Each Share will be split in 3 Shares. The new Shares will have ISIN AA88888888

Method : Ratio Method
Cum amount of shares (C) = 1
Ex amount of shares (E) = 3
Adjustment Ratio = $\frac{\mathrm{C}}{\mathrm{E}} = \frac{1}{3} = 0.33333333$

Options Contracts adjustments:

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	AO	16.67	300	A	AA88888888

6.3 Reverse Stock Split

A Reverse Stock Split means that Shares will be consolidated into fewer Shares. Each shareholder will have less shares but each share will have a higher nominal value. The Contracts will be redesignated as Contracts on the new Shares, where the Share will have a new ISIN.

Company A announces a 1 for 10 reverse stock split. Ten Shares held will be merged into 1 Share. The new Shares will have ISIN AA88888888

Method : Ratio Method
Cum amount of shares (C) = 10
Ex amount of shares (E) = 1
Adjustment Ratio = $\frac{C}{E} = \frac{10}{1}$ = 10

Options Contracts will be adjusted:

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	AO	500	10	A	AA88888888

6.4 Capital Restructure

Company A decides to pay a special dividend of 2 per Share and a Share consolidation of 4 new Shares for every 5 Shares held. The new Shares will have ISIN AA88888888

Method : Ratio Method
Cum Amount of Shares (C) = 5
Ex Amount of Shares (E) = 4
Cum Share price (P) = 50
Value of Entitlement per Share (V) = 2
Adjustment Ratio = $\frac{(P-V)}{P} * \frac{C}{E} = \frac{(50-2)}{50} * \frac{5}{4}$ = 1.2

Options Contracts will be adjusted:

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	AO	60	83.3333	A	AA88888888

The Contract Size will be rounded to 83. Equalization payments will be made to compensate for the rounding of the Contract Size.

6.4 Rights Issue and Open offers

A Rights Issue or Open offer by a company is done by offering existing shareholders Rights (not obligations) to buy additional Shares directly from the company at a discounted price. These Rights can be traded in a similar way as normal shares in the case of a Rights Issue. ISIN of the underlying is unchanged.

Company A announces a Rights issue, where 5 Shares held give the Right to buy 2 new Shares at a subscription price of 45.

Method : Ratio Method
Cum Share price (P) = 50
Dividend to which new Shareholders are not entitled (D) = 0
Subscription price (S) = 45
Number of existing Shares eligible for the Entitlement (C) = 5
Number of new Shares for which C Shares held gives right to buy (N) = 2

The theoretical Value of the Right per Share is:

$$V = (P - D - S) * \frac{N}{C+N} = (50 - 45) * \frac{2}{7} = 1.42857143$$

So:

$$\text{Adjustment Ratio} = \frac{P-V}{P} = \frac{50-1.42857143}{50} = 0.97142857$$

Options Contracts will be adjusted:

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	AO	48.57	102,9412	A	AA12345678

The Contract Size will be rounded to 103. Equalization payments will be made to compensate for the rounding of the Contract Size.

6.5 Dividends

Company A decides to pay an ordinary dividend of 0.50 per Share and a special dividend of 0.70 per Share. These dividends have the same ex-date.

Method: Ratio Method
Cum Share price (P) = 50
Ordinary dividend per Share (OD) = 0.50
Special dividend per Share (SD) = 0.70

Adjustment Ratio = $\frac{\mathrm{P-OD-SD}}{\mathrm{P-OD}}$ = $\frac{50-0.50-0.70}{50-0.50}$ = 0.98585859

Options Contracts will be adjusted:

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	AO	49.29	101.4344	A	AA12345678

The Contract Size will be rounded to 101. Equalization payments will be made to compensate for the rounding of the Contract Size.

6.6 Demergers and Spin offs

Company A decides to demerge a part of its company, we call the newly created company C. Shareholders will receive one share of C for each Share of A held.

There can be 2 scenarios:

1. The Shares of the C, the demerged company, can be delivered, settled and/or traded on the Cboe NL or Cboe UK Market as from effective date.

   Method: Package Method

   The Option Contracts will be redesignated as Contracts based on a package called A1 for example, consisting of 1 Share of A and 1 Share of C.
   The Product Code for the Option Contracts is changed to 'A1O'.
   A new ISIN, for example AC55555555, will be assigned by Cboe NL to this package.
   No adjustments will be made to Exercise Prices or Contract Sizes.

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	A1O	50	100	A1	AC55555555

   Upon exercise of one A1O Option contract, 100 Shares of A and 100 shares of C have to be delivered. Fractional Shares will be delivered in cash.

2. The Shares of the demerged company cannot be delivered, settled and/or traded on the Cboe NL or Cboe UK Market.
   The Share price of the new company is priced at 10.

   Method : Ratio Method

   Cum Share price (P) = 50
   Value of demerged company per share (V) = 10

   Adjustment Ratio = $\frac{\mathrm{P-V}}{\mathrm{P}}$ = $\frac{50-10}{50}$ = 0.8

Options Contracts will be adjusted:

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	AO	40	125	A	AA12345678

6.7 Mergers and takeovers

Company B announces an offer to buy Company A.

There are several scenarios:

1. *Shares only*:
   Company B is offering 2 Shares of Company B for 1 Share of company A:

The Redesignation Method is applied if:

- the Shares of B offered can be delivered, settled and/or traded on the Cboe NL or Cboe UK Market as from the effective date
- there are no existing options listed at Cboe NL on Shares of B
- Cboe NL decides the offered Share will have options listed on it as of effective date.

2 Shares of B offered for 1 Share of A:

Adjustment Ratio = $\frac{X}{Y} = \frac{1}{2}$ = 0.5

Provided that the takeover becomes effective, the Options Contracts shall be re-designated as Contracts based on B Shares, and Option Contracts will be adjusted with the Ratio Method.

	Product Code	Exercise Price	Contract Size	Underlying Code	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	BO	25	200	B	BB87654321

If the conditions above are not met:

Provided that the takeover becomes effective, the Options Contracts will be settled at their respective Fair Value.

2. *Cash only*:

   B is offering 60 for 1 Share in company A:

Provided that the takeover becomes effective, all Option Contracts will be settled at their respective Fair Value.

3. *Combination of Shares and cash:*

Company B is offering 2 Shares of Company B and 10 in cash for 1 Share of company A:

The Redesignation Method is applied if these conditions are met:

- the Shares of B offered can be delivered, settled and/or traded on the Cboe NL or Cboe UK Market as from the effective date
- there are no existing options listed at Cboe NL on Shares of B
- Cboe NL decides the offered Share will have options listed on it as of effective date.
- The Share part at the time the offer is made public is at least 33% of the total value offered

Share price of company B that is issuing the offer (P) = 25

Number of Shares offered for one Share held of target company (N) = 2

Cash element offered for one Share held of target company (C) = 10

The equity part at the time the offer is made public is at least 33% of the total value offered, so the Redesignation Method is applied.

$$\text{Adjustment Ratio} = \frac{P}{P*N+C} = \frac{25}{25*2+10} = 0.41666667$$

Provided that the takeover becomes effective, the Options Contracts shall be re-designated as Contracts based on B Shares, and Option Contracts will be adjusted using the Ratio Method.

	Product ID	Exercise Price	Contract Size	Underlying ID	ISIN Underlying
Cum Event	AO	50	100	A	AA12345678
Ex Event	BO	20.83	240	B	BB87654321

If the above conditions are not met:

Provided that the takeover becomes effective, the Options Contracts will be settled at their respective Fair Value.

6.8 Tender offer

Company A announces a cash tender offer on its own shares at a Tender Price of 55 per Share for a maximum of 1 million Shares. Assume Company A has 5 million Shares outstanding.

Method: Ratio Method

Assume the maximum amount of 1 million Shares are bought back.

Cum amount of Shares outstanding (C) = 5.000.000

Cum Share price (P) = 50

Number of Shares bought back under the offer (N) = 1.000.000

Tender Price (T) = 55

Adjustment Ratio = $\frac{C*P-N*T}{P*(C-N)} = \frac{5.000.000*50-1.000.000*55}{50*(5.000.000-1.000.000)}$ = 0.975

Options Contracts will be adjusted:

	Exercise Price	Contract Size	ISIN Underlying
Cum Event	50	100	AA12345678
Ex Event	48.75	102.5641	AA12345678

The Contract Size will be rounded to 103. Equalization payments will be made to compensate for the rounding of the Contract Size.

APPENDIX A: EQUALISATION PAYMENTS

EQUALISATION PAYMENT AND THE RATIO METHOD

If application of the Ratio Method requires rounding of the Contract Size, an equalisation payment is required. The calculation is done in the following manner:
1. Settlement prices (P) will be multiplied by the ratio to create the adjusted settlement prices (P1)

2. The Contract Size (Q) will be divided by the ratio to create the new Contract Size (Q1) which will be rounded to the nearest whole share (Q2).

EQUALISATION PAYMENT CALCULATION

The theoretical position value must be preserved post an adjustment, such that:

$Q1*P1 = Q*P$

However, as the new Contract Size is rounded to the nearest whole share (Q2), this relationship will not always hold true, so that, where rounding has occurred:

$Q2*P1 \neq Q*P$

The difference or equalisation payment between the new contract value and the original contract value is:

$D = Q*P - Q2*P1$

As $P1 = P*R$ this can be rewritten as:

$D = Q*P- Q2*P*R$

or:

$\mathbf{D = - P*(Q2*R - Q)}$

Where:
D = Equalisation payment of option
P = Unadjusted settlement price of the previous day
Q2 = the rounded Contract Size
R = the Adjustment Ratio
Q = the original Contract Size

If D > 0, then holders of a long position in this option will receive D (the Contract Size is rounded down). If D < 0, then holders of a long position will pay D (the Contract Size is rounded up).