Borsa Italiana

Corporate Actions Policy

The Italian text shall prevail on the English version

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London Stock Exchange Group

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1. Introduction

The Corporate Actions Policy provides the guidelines for the adjustments on options, futures and dividend futures on stocks contracts traded on IDEM market in the case of corporate actions on their underlying shares [1].

The Corporate Action Policy need to be read jointly with Borsa Italiana Market Rules and the accompanying Instructions and it is published and updated by means of Borsa Italiana Announcements service.

2. Definitions

Corporate actions	- extraordinary dividend distributions, stock splits or reverse stock splits, free share capital increases, capital increase with pre-emptive rights, de-mergers, conversion of shares and any other corporate action entailing the detachment of rights from financial instruments; - mergers, takeovers or other corporate actions that might lead to the delisting of shares due to a free-float or liquidity reduction.
Cum price	The last share price on the day before the *ex*-date.
Theoretical *ex*-price	Theoretical share price after the corporate action, which is used to determine the adjustments to be made.
Adjustment coefficient *(K)*	Ratio of the theoretical *ex*-price to the *cum* price.
Ex-date (Effective date)	First trading day when the adjustments are effective.
Lot size	Number of underlying shares of each derivative contract.
Exercise price	Strike price of options contracts traded on IDEM market.
Daily closing price	Daily settlement price calculated by CC&G.
Theoretical Fair Value *(TFV)*	Price calculated by Borsa Italiana and used to close and cash settle options and futures contracts in the cases provided by Borsa Italiana Instructions.

[1] Hereinafter, the term futures indicates jointly the stock futures contracts and the stock dividend futures contracts, unless otherwise specified.

3. General principles and conventions

3.1 Financial equivalence principle

Adjustments of derivative contracts are based on the principle of financial equivalence of the value of derivative contracts before and after the Corporate action.

3.2 Adjustments of derivative contracts

Adjustments might entail:

- the adjustment of the exercise price of options contracts or of the daily closing price of futures contracts. Their lot size may also be adjusted, as well as the settlement price exclusively for the dividend futures on stocks contracts (Adjustment coefficient method);
- the replacement of the underlying shares of options or futures contracts with other shares on the basis of a determined ratio (Replacement method);
- the calculation of Theoretical Fair Value *(TFV)* of options or futures contracts.

3.3 Rounding

The adjustment coefficient *(K)* is rounded to 6 decimals.
The exercise prices of options contracts or the daily settlement prices of futures contracts adjusted by means of the adjustment coefficient *(K)* are rounded to 4 decimals, while their lot sizes are rounded to the nearest integer.
Following such rounding, market intermediaries shall be paid the monetary value of the differential resulting from the rounding.

3.4 Modification of ISIN codes

New ISIN codes are assigned to adjusted options and futures contracts.

3.5 Early exercise for American style stock options

Early exercise of stock options is suspended on the day before the *ex*-date, on the last day of the takeover bid period and on the last day of the period of the execution of the purchase obligation referred to in Article 108 of the Consolidated Law in Finance.

3.6 Contracts to be adjusted

Derivative contracts with open interest on the *ex*-date are subject to adjustment. Derivative contracts with no open interest are deleted from the trading systems.

3.7 Creation of new series on the *ex*-date

Options or futures series available for trading starting from the *ex*-date are generated on the basis of the adjusted reference price.

3.8 Adjustment effective day

The adjustments are effective on the first trading day on which the Corporate action is effective.
In case of capital offer, the effectiveness of the adjustment intervention is communicated from Borsa Italiana through specific Notice.

3.9 Adjustment details release

The adjustment details of options or futures contracts are published by means of Borsa Italiana Announcements and distributed through the NIS system. Moreover, the following information channels are available:

- Web site
  Borsa Italiana Announcements regarding the adjustment of derivative contracts in the case of corporate actions are available at Borsa Italiana web site, under the Derivatives section, http://www.borsaitaliana.it/derivati/primopiano/comunicatiidem.en.htm

- E-mail
  Borsa Italiana Announcements regarding the IDEM market and a weekly e-mail on scheduled corporate actions may be received by freely subscribing the mailing list service “Corporate Action Calendar” on Borsa Italiana website
  http://www.borsaitaliana.it/derivati/corporateactions/iscrizionemailinglist.en

- Contacts
  For information regarding the adjustment of options and futures contracts, please contact the IDEM market division by e-mail at: IDEM.corporate-actions@borsaitaliana.it

4 Adjustment methodology

Here below the adjustment methodology for the following Corporate actions:

- Free share capital increases;
- Stock splits or reverse stock splits;
- Capital increase with pre-emptive rights;
- De-mergers;
- Conversion of shares;
- Extraordinary dividends;
- Mergers;
- Takeovers.

4.1 Free share capital increases

In the case of a free share capital increase, the adjustment coefficient (K) is used to amend the derivative contracts:

$$K = \frac{V}{V + N}$$

V = number of shares before the corporate action
N = number of newly issued shares after the corporate action

The adjustment coefficient *(K)* is used to modify the exercise prices of options, the daily closing prices of futures *(E_{ex})* and their lot sizes *(A_{ex})* according to the following rules:

- <u>adjustment of exercise prices of options contracts and daily closing prices of futures contracts</u>:

  $E_{ex} = E_{cum} \times K$

  E_{ex} = adjusted exercise price of options or adjusted daily closing price of futures

  E_{cum} = exercise price of options before the corporate action or daily closing price of futures

- <u>adjustment of the options and futures contracts lot size *(A_{ex})*</u>

  $$A_{ex} = \frac{Lot}{K}$$

  A_{ex} = number of underlying shares after the adjustment (adjusted lot size)

4.2 Stock splits or reverse stock splits

In the case of a stock split or a reverse stock split, the adjustment coefficient (*K)* is used to amend the derivative contracts:

$$K = \frac{V}{N}$$

V = number of shares before the corporate action
N = number of newly issued shares after the corporate action

The adjustment coefficient *(K)* is used to modify the exercise prices of options, the daily closing prices of futures (E_{ex}) and their lot sizes (A_{ex}) according to the following rules:

- <u>adjustment of exercise prices of options contracts and daily closing prices of futures contracts</u>:

  $E_{ex} = E_{cum} \times K$

  E_{ex} = adjusted exercise price of options or adjusted daily closing price of futures

  E_{cum} = exercise price of options before the corporate action or daily closing price of futures

- <u>adjustment of the options and futures contracts lot size (A_{ex})</u>

  $$A_{ex} = \frac{Lot}{K}$$

  A_{ex} = number of underlying shares after the adjustment (adjusted lot size)

4.3 Capital increase with pre-emptive rights

In the case of a capital increase with the detachment of pre-emptive rights, the adjustment coefficient (*K)* is used to amend the derivative contracts:

$$K = \frac{P_{ex}}{P_{cum}}$$

P_{ex} = theoretical share price *ex*-right
P_{cum} = share price *cum*-right

The specific characteristics of the pre-emptive offer must be taken into consideration in order to determine the theoretical share price *ex*-right. In particular, a capital increase may be carried out by issuing a combination of new shares, warrants or convertible bonds in whatever proportion. Please refer to Appendix 1 for the theoretical share price *ex*-right calculation in the most common cases of pre-emptive offers.

The adjustment coefficient *(K)* is used to modify the exercise prices of options, the daily closing prices of futures (E_{ex}) and their lot sizes (A_{ex}) according to the following rules:

- <u>adjustment of exercise prices of options contracts and daily closing prices of futures contracts</u>:

  $E_{ex} = E_{cum} \times K$

  E_{ex} = adjusted exercise price of options or adjusted daily closing price of futures

  E_{cum} = exercise price of options before the corporate action or daily closing price of futures

- <u>adjustment of the options and futures contracts lot size (A_{ex})</u>

  $$A_{ex} = \frac{Lot}{K}$$

  A_{ex} = number of underlying shares after the adjustment (adjusted lot size)

4.4 De-mergers

In the case of de-mergers, either the adjustment coefficient method or the replacement method can be used to adjust derivative contracts. The choice is made by taking into consideration the characteristics of the de-merger, such as the size of the de-merged firm and the liquidity of both the de-merged and parent companies.

Replacement method:

The underlying shares of options or futures contracts are replaced with a basket composed by the shares of both the parent and the de-merged firms on the basis of the de-merger ratio. On the other hand, the exercise price of options or the daily closing price of futures do not change.
The adjusted lot size (A_{ex}) of options or futures is equal to the sum of the number of shares of the parent company (Lot_a) and of the de-merged company (Lot_b) underlying the contracts:.

$$A_{ex} = Lot_a + Lot_b$$

Adjustment coefficient method:

The derivative contracts are amended by applying the adjustment coefficient (K):

$$K = \frac{P_{ex}}{P_{cum}}$$

P_{ex} = theoretical price *ex* de-merger
P_{cum} = *cum* price

The valuation of the de-merged firm ($V_{de\text{-}merged}$) and the de-merger ratio (DR) are taken into account when determining the theoretical price *ex* de-merger:

$P_{ex} = P_{cum} - DR * V_{de\text{-}merged}$

The adjustment coefficient *(K)* is used to modify the exercise prices of options, the daily closing prices of futures *(E_{ex})* and their lot sizes *(A_{ex})* according to the following rules:

- adjustment of exercise prices of options contracts and daily closing prices of futures contracts:

  $E_{ex} = E_{cum} \times K$

  E_{ex} = adjusted exercise price of options or adjusted daily closing price of futures

  E_{cum} = exercise price of options before the corporate action or daily closing price of futures

- adjustment of the options and futures contracts lot size *(A_{ex})*

$$A_{ex} = \frac{Lot}{K}$$

A_{ex} = number of underlying shares after the adjustment (adjusted lot size)

4.5 Conversion of shares

In the case of conversion of a category of shares into another, which are sufficiently liquid and suitable to be the underlying of option and futures contracts traded on IDEM market[2], the underlying shares of options or futures contracts are replaced by the shares offered on the *ex*-date and consequently, the derivative contracts terms are modified by the adjustment coefficient (*K*) based on the conversion ratio.

$$K = \frac{V}{N}$$

V = number of shares to be converted
N = number of shares offered

The adjustment coefficient *(K)* is used to modify the exercise prices of options, the daily closing prices of futures (E_{ex}) and their lot sizes (A_{ex}) according to the following rules:

- <u>adjustment of exercise prices of options contracts and daily closing prices of futures contracts</u>:

  $E_{ex} = E_{cum} \times K$

  E_{ex} = adjusted exercise price of options or adjusted daily closing price of futures

  E_{cum} = exercise price of options before the corporate action or daily closing price of futures

- <u>adjustment of the options and futures contracts lot size (A_{ex})</u>

  $$A_{ex} = \frac{Lot}{K}$$

  A_{ex} = number of underlying shares after the adjustment (adjusted lot size)

[2] If the shares offered are not sufficiently liquid and are not suitable to be the underlying of option and futures contracts traded on IDEM market, all the contracts open on the *ex*-date are closed and cash settled (refer to Appendix 2 Calculation of the Theoretical Fair Value.

4.6 Extraordinary dividends

Both cash and scrip dividends are meant to be extraordinary if the company classifies them as such or as additional with respect to the dividends deriving from the distribution of the normal profits of the year, or with respect to the usual dividend policy. The dividends not classified as such by the company may be considered as being extraordinary if they are of any additional nature with respect to the company's normal dividend policy.

In the case of the distribution of extraordinary dividends, the adjustment coefficient (*K)* is used to amend the derivative contracts:

$$K = \frac{P_{cum} - D_{ord} - D_{ext}}{P_{cum} - D_{ord}}$$

P_{cum} = *cum* price
D_{ord} = amount of the possible ordinary dividend
D_{ext} = amount of the extraordinary dividend

The adjustment coefficient *(K)* is used to modify the exercise prices of options, the daily closing prices of futures *(E_{ex})* and their lot sizes *(A_{ex})* according to the following rules:

- <u>adjustment of exercise prices of options contracts and daily closing prices of futures contracts</u>:

  $E_{ex} = E_{cum} \times K$

  E_{ex} = adjusted exercise price of options or adjusted daily closing price of futures

  E_{cum} = exercise price of options before the corporate action or daily closing price of futures

- <u>adjustment of the options and futures contracts lot size *(A_{ex})*</u>

  $$A_{ex} = \frac{Lot}{K}$$

  A_{ex} = number of underlying shares after the adjustment (adjusted lot size)

4.7 Mergers

In the case of a merger, if the shares of the merging company are sufficiently liquid and suitable to be the underlying of option and futures contracts traded on IDEM market[3], the underlying shares of options or futures are replaced with the shares of the merging company on the *ex*-date and consequently, the derivative contracts terms are modified by the adjustment coefficient (*K*) which is based on the merger ratio:

$$K = \frac{V}{N}$$

V = number of shares of the merged firm
N = number of shares of the merging firm

The adjustment coefficient *(K)* is used to modify the exercise prices of options, the daily closing prices of futures (E_{ex}) and their lot sizes (A_{ex}) according to the following rules:

- <u>adjustment of exercise prices of options contracts and daily closing prices of futures contracts</u>:

  $E_{ex} = E_{cum} \times K$

  E_{ex} = adjusted exercise price of options or adjusted daily closing price of futures

  E_{cum} = exercise price of options before the corporate action or daily closing price of futures

- <u>adjustment of the options and futures contracts lot size (A_{ex})</u>

  $$A_{ex} = \frac{Lot}{K}$$

  A_{ex} = number of underlying shares after the adjustment (adjusted lot size)

[3] If the shares of the merging company are not sufficiently liquid and suitable to be the underlying of option and futures contracts traded on IDEM market, all the contracts open on the ex-date are closed and cash settled (refer to Appendix 2 Calculation of the Theoretical Fair Value.

4.8 Takeovers

In the case of takeovers, adjustments may imply:

1. the replacement of the underlying shares with the shares offered in exchange (in cases where at least 33% of the consideration of the tender offer consists of shares of the bidder that is included in the FTSE Italia All Share index).

2. or the application of the Theoretical Fair Value (*TFV*) (in the cases where the shares underlying contracts are subject to a complete-acquisition tender offer according to which the bidder becomes holder of more than 90% of the capital or to the execution of the purchase obligation referred to in Article 108 of the Consolidated Law on Finance or foreign equivalent).

In particular:

- whenever the substitution of the security to be delivered with that of the bidder takes place, adjustments are similar to those in the case of mergers, paragraph 4.7;

- whenever the Theoretical Fair Value *(TFV*) method, entailing the closure and cash settlement of all open positions, is used, refer to Appendix 2 Calculation of the Theoretical Fair Value *(TFV)* for calculation details.

5 Appendix 1: Calculation of the theoretical price *ex*-right in the most common cases of capital increase with pre-emptive rights

Here follow the methods for the calculation of the theoretical *ex*-price in the most common cases of pre-emptive offers.

- Pre-emptive offer with the issue of (N) new shares with regular dividend entitlement every (V) old shares held at the subscription price P_s

  The price *ex*-right is calculated as follows:

$$\begin{cases} P_{ex} = P_{cum} - V_{right} \\ V_{right} = MAX\,[(P_{ex} - P_s) * \frac{N}{V}; 0] \end{cases}$$

  If the value of the right (V_{right}) is positive, then:

$$P_{ex} = \left(\frac{(P_{cum} * V) + (P_s * N)}{V + N} \right)$$

- Pre-emptive offer with the issue of (N) new shares with no dividend entitlement (i.e. the new shares do not entitle to receive the dividends D paid during the current year) every (V) old shares held at the subscription price P_s

  The price *ex*-right is calculated as follows:

$$\begin{cases} P_{ex} = P_{cum} - V_{right} \\ V_{right} = MAX\,[(P_{ex} - P_s - D) * \frac{N}{V}; 0] \end{cases}$$

  if the value of the right (V_{right}) is positive, then:

$$P_{ex} = \left(\frac{(P_{cum} * V) + (P_s + D) * N)}{V + N} \right)$$

- Pre-emptive offer with the issue of (N) convertible bonds every (V) old shares held at the subscription price P_s

  The price *ex*-right is calculated as follows:

$$\begin{cases} P_{ex} = P_{cum} - V_{right} \\ V_{right} = MAX\,[(B - P_s) * \frac{N}{V}; 0] \end{cases}$$

  In order to assess the theoretical value of the right (V_{right}), the fair value of the convertible bond (B) shall be estimated. To this end, Borsa Italiana has set up a working group on corporate actions – that includes a number of selected experts representing the most

active firms on Borsa markets – that provides independent estimates on the financial instrument to be valuated.

Since the value of the convertible bond is a function of the theoretical price *ex*-right, the convertible bond price is iteratively determined such that the following relationship holds: $P_{ex} = P_{cum} - V_{right}$

- <u>Pre-emptive offer with the issue of (N) warrants every (V) old shares held at the subscription price P_s</u>

The price *ex*-right is calculated as follows:

$$\begin{cases} P_{ex} = P_{cum} - V_{right} \\ V_{right} = MAX\,[(W - P_s) * \frac{N}{V};0] \end{cases}$$

In order to assess the theoretical value of the right (V_{right}), the fair value of the warrant (W) shall be estimated. To this end, Borsa Italiana has set up a working group on corporate actions – that includes a number of selected experts representing the most active firms on Borsa markets – that provides independent estimates on the financial instrument to be valuated.

Since the value of the warrant is a function of the theoretical price *ex*-right, the warrant price is iteratively determined such that the following relationship holds: $P_{ex} = P_{cum} - V_{right}$

6 Appendix 2: Calculation of the Theoretical Fair Value (*TFV*)

In the case of early closure and cash settlement of options or futures contracts, the settlement prices are determined according to the Theoretical Fair Value *(TFV).*

The *TFV* is calculated as follows:

- using the Cox-Ross-Rubinstein binomial model (CRR) with 100 steps for options
- using the cash and carry arbitrage model for futures.

The following inputs are considered when applying the *TFV* calculation models:

Underlying:	corresponds to the tender offer price or, in the case of mergers or exchange offers, to the value of the stocks offered determined on the basis of the market conditions the day before the closure and cash settlement of options or futures on stocks contracts.
Volatility:	equal to the arithmetic average of the volatilities implied in the daily settlement prices of options contracts calculated by CC&G over the ten days before the offer announcement date[4]. In the case of abnormal situations, linear interpolation techniques might be used.
Dividends:	those estimated over the residual life of the contract and used to calculate the daily settlement prices by CC&G on the day before the closure and cash settlement of options or futures contracts. The solar calendar is used in order to define the residual life of the contracts.
Interest rate:	based on the Euribor curve as of the day before the closure and cash settlement of options or futures contracts and consistent with the residual life of the contract.

[4] In the case of an offer, the announcement date is the day on which the financial terms of the corporate action are communicated to the market. In the case of modifications of the offer terms or of the launch of competing counter-offers, the implied volatilities calculated at the time of the announcement of the first offer are used in the calculation of the *TFV*. The announcement date in the case of a merger, according to article 114 d.lgs. n. 58/1998, is the day on which the financial terms of the corporate action are communicated to the market.