

Zug, October 2nd, 2023

DAX Equity Index Calculation – Detailed guidance of the rule changes reflected in the restructured DAX Equity Index Guides

STOXX Ltd., the operator of Qontigo's index business and a global provider of innovative and tradable index concepts, today published a series of new Index Guides for its DAX Index offering pursuant to methodological changes of the DAX Equity Index Framework announced March 27th, 2023.

The current Guide to the DAX Equity Indices has been restructured to provide a more transparent guidance to the rules underlying the Index methodologies and Index calculation. On March 18th, 2024, the currently applicable Guide to the DAX Equity Indices will be replaced by the DAX Equity Index Methodology and the DAX Equity Index Calculation Guide.

This document shall serve as guidance to the new <u>DAX Equity Index Calculation Guide</u>¹. It shows which sections of the expiring Guide to the DAX Equity Indices have been transferred to the DAX Equity Index Calculation Guide. It also allows for a comparison of the former chapter version with the new section version.

In addition, an overview over which chapters have been newly created in the DAX Equity Index Calculation Guide that have not been part of the Guide to the DAX Equity Indices before is provided.

Sections as per Guide to the DAX Equity Indices vs. sections as per DAX Equity Index Calculation Guide

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¹ Disclaimer: This document does not contain the official rules that will apply from March 18th 2024 and should only be understood as supporting material to the official index guides. For the official index rules, please refer to the DAX index guides.



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2. New sections of the DAX Equity Index Calculation Guide previously not being part of any guide

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Annex I – Sections as per Guide to the DAX Equity Indices vs. sections as per DAX Equity Index Calculation Guide

Rule as per former Guide to the DAX Equity Indices

1.3 Discretion

Save for the cases expressly described in this Guide, the index methodology is entirely rule-based and automatic. Discretion only applies if expressly stated and must be exercised as provided for in this Guide.

1.3.1 Exercise of Discretion

Discretion may only be exercised by STOXX Committee(s) (as defined hereafter) with a view to resolve issues arising in maintaining the prevailing index methodology in response to events, with an overarching aim to accurately and reliably measure the market or economic realities as defined in this Guide.

Discretion shall be exercised in line with the following principles:

- The body or person(s) exercising discretion must not be affected by a conflict of interest.
- The body or person(s) exercising discretion must have the requisite skills, knowledge and experience to exercise such discretion.
- All facts and circumstances relevant for the exercise of discretion must have been established and properly documented prior to the exercise of discretion.
- The exercise of discretion must comply with all applicable laws and regulations.
- The body or person(s) exercising discretion must act on the basis of the relevant facts and circumstances only, must give proper weight to the

Rule as per DAX Equity Index Calculation Guide

2.3.1. Exercise of Discretion

Discretion may only be exercised by STOXX Committee(s) (as defined hereafter) with a view to resolve Limitations arising in maintaining the prevailing index methodology in response to events, with an overarching aim to accurately and reliably measure the market or economic realities as defined in this Guide.

Discretionary Rule: Any exercise of discretion must take into account the rationale of the index, the purpose of the rules with regard to which discretion is exercised, the objective to preserve market integrity and reliability of the index calculation to avoid undue market impact, the technical feasibility and economic reasonability, and the interest of licensees or investors.

Discretion shall be exercised in line with the following principles:

- » The body or person(s) exercising discretion must not be affected by a conflict of interest.
- » The body or person(s) exercising discretion must have the requisite skills, knowledge and experience to exercise such discretion.
- » All facts and circumstances relevant for the exercise of discretion must have been established and properly documented prior to the exercise of discretion.



various considerations and ignore irrelevant facts and circumstances.

- The body or person(s) exercising discretion must act with a view to maintain the integrity of the market or economic reality by aiming to ensure that indices remain representative and can be replicated, taking into account, inter alia, some, or all of the following:
 - o Relevance of the event to the DAX indices
 - Trading accessibility of the affected market
 - Availability of alternative markets
 - Ability of market participants to replicate the index or, where applicable, the results of the index review
 - Public information related to the events and their development in the foreseeable future.
- The body or person(s) exercising discretion must act honestly, reasonably, impartially and in good faith.
- As part of the decision-making process, STOXX may consult with external stakeholders.

Discretionary Rule: Any exercise of discretion must take into account the rationale of the index, the purpose of the rules with regard to which discretion is exercised, the objective to preserve market integrity and reliability of the index calculation to avoid undue market impact, the technical feasibility and economic reasonability, and the interest of licensees or investors.

The cases in which STOXX Ltd. may exercise discretion regarding the index methodology and its application are noted in the respective rules of this Guide. The following bodies (hereafter each of them separately also referred to as "STOXX Committee") are involved in the decision-making process relevant for the indices governed by this Guide:

- Product Initiation Committee (PIC),
- Product Approval Committee (PAC),
- Index Operations Committee (IOC),
- Index Management Committee (IMC),
- Index Governance Committee (IGC),
- Oversight Committee (OC),
- Management Board (MB).

- » The exercise of discretion must comply with all applicable laws and regulations.
- » The body or person(s) exercising discretion must act on the basis of the relevant facts and circumstances only, must give proper weight to the various considerations and ignore irrelevant facts and circumstances.
- The body or person(s) exercising discretion must act with a view to maintain the integrity of the market or economic reality by aiming to ensure that indices remain representative and can be replicated, taking into account, inter alia, some, or all of the following:
 - Relevance of the event to the indices referenced in this Guide.
 - Trading accessibility of the affected market
 - Availability of alternative markets
 - Ability of market participants to replicate the index or, where applicable, the results of the index review
 - Public information related to the events and their development in the foreseeable future.
- » The body or person(s) exercising discretion must act honestly, reasonably, impartially and in good faith.

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- » Product Approval Committee (PAC),
- » Index Operations Committee (IOC),
- » Index Management Committee (IMC),
- » Index Governance Committee (IGC),
- » Oversight Committee (OC),
- » Management Board (MB).

The description of STOXX Governance Structure is available on www.stoxx.com in the section. Resources / Index Regulations.

5.1.1 Insolvency of Companies

"Insolvency Proceeding" shall refer to any applicable insolvency, bankruptcy, dissolution, liquidation or

8.5.2. Insolvency of Companies

"Insolvency Proceeding" shall refer to any applicable insolvency, bankruptcy, dissolution,



winding up proceedings or similar proceedings in relation to the assets of such Constituent. An "Insolvency Event" in relation to a company which is a constituent of an equity index ("Constituent") shall be deemed to have occurred if STOXX has been informed by the Constituent, or a national competent authority, or a court in writing or through public announcement (other than by entry into a register) that:

- Insolvency Proceedings over the assets of the Constituent will be filed or have been filed for, or
- that Insolvency Proceedings have been opened in relation to the Constituent, or
- the Constituent seeks or becomes subject to the appointment of an administrator, receiver, trustee, custodian, or other similar official for it or for all or substantially all its assets, or
- the Insolvency Proceedings are rejected due to a lack of assets, or
- Constituent is in liquidation, be it as a result of Insolvency Proceedings or a shareholders' decision or otherwise.

For the avoidance of doubt, a resolution and/or restructuring measures under the European Bank Recovery and Resolution Directive (or comparable third country legislation which stipulate that banks shall be subject to an extraordinary restructuring proceeding) shall not be considered as Insolvency Events.

If an Insolvency Event occurred in relation to a Constituent, the securities of the Constituent shall be deleted from the index based on the traded stock price on its primary market, if available; if the last price is not available, the Constituent will be deleted at market close in local currency of 0.001.

The Constituent shall be extraordinarily replaced in the Indices. Such replacement shall be announced at 22:00 CET on the day STOXX became aware of the Insolvency Event based on publicly available information. The change shall be implemented two (2) trading days after the calendar day of the announcement by STOXX and shall become effective the next trading day after implementation. In case such security has already been announced as a new index constituent or replacement for a current index constituent, the announcement will be revoked, and a new constituent implemented with two (2) trading days' notice. This may lead to an index with less constituents than required by the index methodology until a replacement is effective.

liquidation or winding up proceedings or similar proceedings in relation to the assets of such constituent. An "Insolvency Event" in relation to a company which is a constituent of an equity index ("Constituent") shall be deemed to have occurred if STOXX has been informed by the Constituent, or a national competent authority, or a court in writing or through public announcement (other than by entry into a register) that:

- (i) Insolvency Proceedings over the assets of the Constituent will be filed or have been filed for, or
- (ii) that Insolvency Proceedings have been opened in relation to the Constituent, or
- (iii) the Constituent seeks or becomes subject to the appointment of an administrator, receiver, trustee, custodian, or other similar official for it or for all or substantially all its assets, or
- (iv) the Insolvency Proceedings are rejected due to a lack of assets, or
- (v) Constituent is in liquidation, be it as a result of Insolvency Proceedings or a shareholders' decision or otherwise.

For the avoidance of doubt, a resolution and/or restructuring measures under the European Bank Recovery and Resolution Directive (or comparable third country legislation which stipulate that banks shall be subject to an extraordinary restructuring proceeding) shall not be considered as Insolvency Events.

If an Insolvency Event occurred in relation to a Constituent of a Blue Chip or International index, the securities of the Constituent shall be deleted from the index based on the traded stock price on its primary market, if available; if the last price is not available, the Constituent will be deleted at market close in local currency of 0.0000001. The Constituent shall be extraordinarily replaced in the respective Blue Chip or International index.

in the respective Blue Chip or International index. Such replacement shall be announced at 22:00 CET on the day STOXX became aware of the Insolvency Event based on publicly available information. The change shall be implemented 2 trading days after the calendar day of the announcement by STOXX and shall become effective the next trading day after implementation. In case such security has already been announced as a new index constituent or replacement for a current index constituent, the announcement will be revoked, and a new constituent implemented with 2 trading days' notice. This may lead to an index with less



The securities of a Constituent for which an Insolvency Event occurred are not eligible as an index constituent or replacement index constituent for any future selection, with immediate effect at the date of STOXX' announcement. The respective securities will be kept on the monthly index ranking list without receiving a rank.

The respective securities may receive a rank again once the proceedings in relation to the Insolvency Event have been concluded resulting in the continuance of the business operated by the issuer of the security, but not earlier than one (1) calendar year after exclusion became effective.

constituents than required by the index methodology until a replacement is effective. The securities of an issuer for which an Insolvency Event occurred are not eligible as an index constituent or replacement index constituent for any future selection in Blue Chip and International Indices, with immediate effect at the date of STOXX' announcement. The respective securities will be kept on the monthly index ranking list without receiving a rank.

The respective securities may receive a rank again once the proceedings in relation to the Insolvency Event have been concluded resulting in the continuance of the business operated by the issuer of the security, but not earlier than one (1) calendar year after exclusion became effective.

5.1.4 Extraordinary Free Float Adjustments

If the free float factor of a company included in a selection index changes by more than 10 percentage points during the period between two regular chaining dates due to a corporate action (e.g., subscription right or changes in share capital), the free float factor will be updated extraordinarily. The rule does not apply to cases where the absolute change of free float-adjusted number of shares (ffiT x qiT) before the ex-date of the corporate action is less than or equal to 10%, i.e., the corporate action is deemed market cap neutral. STOXX Ltd. will announce the new free float factor at least two trading days before the change becomes effective.

Free float adjustments resulting from ongoing acquisitions (acquisitions as defined by the German Securities Acquisition and Takeover Act (WpÜG)) will be made extraordinarily in the respective index after the initial announcement and the final announcement at the end of each offer period or after the tender offer cancellation. Index changes will be announced two trading days before the change becomes effective. Shares held in fixed ownership will remain unchanged until further information, i.e., according to the WPHG or other official sources, is available.

The extraordinary adjustment in each case will be carried out as described in section 7.2.2, with the only difference that the index composition will not be changed and only the free float factor of the affected company will be updated.

5.1.4.1 Adjustments effective during review implementation week

8.2. Free-Float Factors and Share Adjustments

Ordinary adjustments:

The free-float factors and outstanding number of shares are reviewed on a quarterly basis based on the most recent available data. The final data are published on the quarterly underlying data announcement dates and implemented on the quarterly implementation dates. The review cut-off date for free-float and number of shares data is the trading day prior to the quarterly underlying data announcement date, i.e., usually the Thursday before the second Friday of the review month. Data arriving after the cut-off dates are implemented in the following quarterly review.

Extraordinary adjustments:

The indices are updated with changes to the number of shares and/or free-float factors due to corporate actions. The timing depends on the magnitude of the change:

- » Changes to the number of shares due to stock dividends, splits, rights issues etc. are implemented immediately and effective the next trading day.
- » Changes greater than ± 10 percent to the number of shares from one trading day to the next are announced immediately, implemented two trading days later and effective the next trading day after implementation.
- » Free-float factor changes greater than ± 5 percentage points from one trading day to the next are announced immediately, implemented two trading days later and effective the next trading day after implementation.



An extraordinary free float adjustment that would be effective during the quarterly review implementation week will become effective on review effective date, provided that minimum 2 trading days' notice can be given. The standard notice period of 2 trading days will be extended such that the effective date will be aligned with the review effective date.

- » Changes to the combined free float adjusted number of shares greater than ± 10 percent from one trading day to the next are announced immediately, implemented two trading days later and effective the next trading day after implementation.
- » All other applicable changes are announced on the next quarterly underlying data announcement date, implemented on the quarterly implementation date and effective the next trading day after implementation.

8.2.1. Free-Float Factors and Share Adjustments during Review Implementation Week

An extraordinary free-float and share adjustment that would be effective during the quarterly review implementation week will become effective on review effective date, provided that minimum 2 trading days' notice can be given. The standard notice period of 2 trading days will be extended such that the effective date will be aligned with the review effective date.

5.1.5 Adjustments in the Case of Mergers and Acquisitions

Two possible scenarios must be distinguished in this context:

a) The absorbing or emerging company meets the basic criteria for inclusion in the index

As soon as the free float of the absorbed company falls below 10 percent, the company is removed from the index. The absorbed company is replaced by the absorbing or emerging company on the same date.

Generally, the absorbed company is deleted at the last traded price of the company. If the absorbed company is not trading anymore (delisted or suspended before its deletion), a new artificial price based on the acquisition/merger terms is calculated and the absorbed company is kept/deleted with this price instead of the last traded one. For the calculation of the artificial price only ordinary cash and stock terms will be used. Other instruments such as Contingent Value Rights will not be considered.

Payment Type	Artificial Price	
Cash	Deletion Price = Cash term	
Stock	Deletion Price = Close price acquirer*Stock	
Stock	term	

8.3. Mergers and Takeovers

8.3.1. Target Company - Free-Float Adjustment

A merger or takeover will result in an extraordinary free float adjustment of the target company in DAX indices following the publication of the definitive results of each tender offer period or the publication of the result when the tender offer period is extended and the acquired stake implies a change of free float factor greater than or equal to 5%, except when a conversion into tendered shares as described in chapter 7.3.3 is applicable.

An extraordinary free float adjustment might apply to the target company following the tender offer cancellation if the return of shares implies a change of free float factor greater than or equal to 5%.

Additionally, an extraordinary adjustment might apply to the acquiring company as per the rule under section 7.3 Free Float Factors and Share Adjustments.

Changes are announced immediately, implemented two trading days later and become effective on the next trading day after implementation.



		Deletion Price = Cash term + Close price acquirer*Stock term	
Cash or Stock Deletion Price = Cash term		Deletion Price = Cash term	

b) The absorbing company is already included in the index or does not meet the basic criteria for inclusion in the index

As soon as the free float of the absorbed company falls below 10 percent, the company is removed from the index. On the same date the absorbed company is replaced by a new company. According to rules outlined in 5.1.2.

5.2 All Share Indices

Mergers of companies result in an extraordinary adjustment to the All-Share indices. The acquired companies are deleted if they are no longer listed on the stock exchange and chaining takes place. If the new company is not created from the continuation of the listing of an old company, it is included on the index as a completely new company.

8.3.1.1. Free-Float Adjustment Effective During Review Implementation Week

An extraordinary free float adjustment that would be effective during the quarterly review implementation week will become effective on review effective date, provided that minimum 2 trading days' notice can be given. The standard notice period of 2 trading days will be extended such that the effective date will be aligned with the review effective date.

8.3.2. Target Company - Deletion

A merger or takeover will result in the deletion of the target company from Blue Chip and International indices if all the following conditions are met:

- » All conditions of the event are currently fulfilled (i.e., shareholder & authorities' approval, minimum acceptances, other customary conditions)
- At least 90% of the shares have been acquired through the tender offer or the remaining freefloat factor of the target is less than 10% (International indices: 5%) based on the current publicly available information.

For events that involve the takeover of US or Canadian companies, the changes are announced based on the expected completion date before being declared wholly unconditional.

For events that involve the takeover of a company from Great-Britain, Australia, New Zealand and Hong-Kong, if the only condition left is the Court Hearing sanctioning the Scheme, the changes are announced based on the expected completion date before being declared wholly unconditional.

Additionally, an extraordinary adjustment might apply to the acquiring company as per the rule under section 8.2 Free-float Factors and Share Adjustments.

Changes are announced immediately, implemented two trading days later and become effective on the next trading day after implementation.

This would result in one surviving stock and one or more non-surviving stocks that may not necessarily be de-listed from the respective



trading system(s). The rules below are only applied if at least one company in this transaction is a component of the Blue Chip or International indices. Any surviving stock that does not qualify and the non-surviving stock(s) are deleted immediately.

Generally, the non-surviving stock(s) are deleted at the last traded price of the security. If any non-surviving stock is not trading anymore (delisted or suspended before its deletion), a new artificial price based on the acquisition/merger terms is calculated and the company is kept/deleted with this price instead of the last traded one. For the calculation of the artificial price only ordinary cash and stock terms will be used. Other instruments such as Contingent Value Rights will not be considered.

Paymer Type	nt	Artificial Price
Cash		Deletion Price = Cash term
Stock		Deletion Price = Close price acquirer*Stock term
Cash Stock	&	Deletion Price = Cash term + Close price acquirer*Stock term
Cash Stock	or	Deletion Price = Cash term

If the surviving stock meets the criteria for inclusion in a Blue Chip or International index, it replaces the non-surviving stock in the index at the same date the non-surviving stock is deleted from the index. If the surviving stock is already included in the index or does not meet the basic criteria, the non-surviving stock is replaced by a new company according to the Fast Exit rule (cf. section xx of the DAX Equity Index Methodology Guide).

For All Share indices, the non-surviving stocks are deleted if they are no longer listed on the stock exchange. If the new company is not created from the continuation of the listing of an old company, it is included in the index as a completely new company.

5.1.6 Conversion into Tendered Shares

During the period of a takeover bid or mandatory offer the target company shares tendered for exchange shall be treated as follows:

Where the target company is a component of one of the selection indices and the acceptance rate as shown in the notification pursuant to § 23 I WpÜG is

8.3.3. Conversion Into Tendered Shares

During the period of a takeover bid or mandatory offer the target company shares tendered for exchange shall be treated as follows:

Where the target company is a component of one of the Blue Chip indices and the acceptance rate



greater than 50% ("acceptance threshold") then the shares in a target company included in an index shall be replaced by the shares tendered for conversion without chaining, if the following requirements are met:

- It can be assumed on the basis of the information publicly available at the time the acceptance threshold is exceeded, that the shares into which the target company shares tendered for exchange would be converted in the event of a successful takeover, satisfy the criteria for obtain a ranking, as described in Chapter 4.1.1.2. In this respect, for the purposes of making the required predictive decision it is irrelevant whether the bidder's shares (into which the target company shares tendered for exchange could be converted in the event of a successful takeover) already exist prior to the conclusion of the takeover offer, still need to be created, or are already traded on Xetra®. In the context of compliance with the basic criteria regarding the recommendations of the German Corporate Governance Codex (GCGC) and the accounting obligations according to section 4.1.1.1, it is assumed that the terms and conditions of the parent company will be adopted by the company to which the tender offer will lead, by the end of the financial year following the successful completion of the merger.
- The bidder resp. the company resulting from the takeover is not already included in a selection index.

The shares tendered for exchange and the other shares not tendered for exchange each form a separate class of shares. If the aforementioned conditions are met, then the number of shares and the free float factor of the class to be replaced shall be adopted and modified only when the next regular chaining takes place.

If the takeover bid or mandatory offer fails, then the shares tendered for exchange shall be removed from the index without chaining and replaced by the shares that were previously included in the index.

after the end of the first tender offer period as shown in the notification pursuant to § 23 I WpÜG (German Securities Acquisition and Takeover act) is greater than 50% relative to the number of shares not held by the acquirer prior to the offer being made ("acceptance threshold"), then the shares in a target company included in an index shall be replaced by the shares tendered for conversion effective one trading day after the last day of the additional offer period, if the following requirements are met:

- » It can be assumed on the basis of the information publicly available at the time the acceptance threshold is exceeded, that the shares into which the target company shares tendered for exchange would be converted in the event of a successful takeover, satisfy the criteria for obtaining a ranking, as described in the DAX Equity Index Methodology Guide. In this respect, for the purposes of making the required predictive decision it is irrelevant whether the bidder's shares (into which the target company shares tendered for exchange could be converted in the event of a successful takeover) already exist prior to the conclusion of the takeover offer, still need to be created, or are already traded on Xetra. In the context of compliance with the basic criteria regarding the recommendations of the German Corporate Governance Codex (GCGC) and the accounting obligations according to the DAX Equity Index Methodology Guide, it is assumed that the terms and conditions of the parent company will be adopted by the company to which the tender offer will lead, by the end of the financial year following the successful completion of the
- » The bidder resp. the company resulting from the takeover is not already included in a selection index.

The shares tendered for exchange and the other shares not tendered for exchange each form a separate class of shares. If the requirements are met, then the number of shares and the free-float factor of the class to be replaced shall be adopted and modified only at the next regular review.

If the takeover bid or mandatory offer fails, then the shares tendered for exchange shall be removed from the index and replaced by the shares that were previously included in the index.



6 Calculation

6.1 Index Formulas

6.1.1 Index Formula for free float market capitalization weighted indices

The selection indices of the DAX® family are capital weighted. Only the shares in the free float are considered when calculating the capitalization. The indices are each calculated as price and performance indices.

The indices in the DAX[®] family use the Laspeyres index formula and are calculated as follows:

$$Index = K_{T} \cdot \frac{\sum p_{it} \cdot ff_{T} \cdot q_{T} \cdot c_{it}}{\sum p_{i0} \cdot q_{i0}} \cdot Bas\epsilon$$

whereby:

c_{it} = Adjustment factor of company i at

time t

ff_{iT} = Free float factor of share class i at time

Т

n = Number of shares in the index

 p_{i0} = Closing price of share i on the trading

day before the first inclusion in the index

p_{it} = Price of share i at time t

 q_{i0} = Number of shares of company i on the

trading day before the first inclusion in the index

 q_{iT} = Number of shares of company i at

time T

t = calculation time of the index

 K_T = Index-specific chaining factor valid as

of chaining date T

T = Date of the last chaining

Base = value of the index at base date

The formula set out below is equivalent in analytic terms, but designed to achieve relative weightings:

$$A = \sum_{i=1}^{n} p_{i0} \cdot \frac{q_{i0}}{\sum_{i=1}^{n} q_{i0}} \cdot 100$$

$$\text{and:} \quad F_{_{i}} = K_{_{T}} \cdot \frac{ff_{_{iT}} \cdot q_{_{iT}}}{\sum_{_{n}}^{_{n}} q_{_{i0}}} \cdot 100 \cdot c_{_{it}}$$

The index calculation can be reproduced in simplified terms by using the expression Fi:

• Multiply the current price by the respective Fi weighting factor.

7 Index Value Calculation

7.1 Index Formulas

7.1.1. Market Capitalization Weighted

The indices are calculated with the Laspeyres formula, which measures price changes against a fixed base quantity weight:

$$Index_t = \frac{\sum_{i=1}^{n} (p_{it} \cdot s_{it} \cdot ff_{it} \cdot cf_{it} \cdot x_{it})}{D_t} = \frac{M_t}{D_t}$$

Where:

t = Time the index is computed

n = Number of companies in the index

 p_{it} = Price of company (i) at time (t)

 s_{it} = Number of shares of company (i) at time (t)

 ff_{it} = Free-float factor of company (i) at time

 cf_{it} = Weighting cap factor of company (i) at time (t)

 x_{it} = Exchange rate from local currency into index currency for company (i) at time (t)

 M_t = Free-float market capitalization of the index at time (t)

 D_t = Divisor of the index at time (t)

7.1.2 Price-Weighted with Weighting-Factors

The indices are weighted based on the components' stock prices and weighting factors:

$$Index_t = \frac{\sum_{i=1}^{n} (p_{it} \cdot wf_{it} \cdot cf_{it} \cdot x_{it})}{D_t} = \frac{M_t}{D_t}$$

Where:

t = Time the index is computed

n = Number of companies in the index

 p_{it} = Price of company (i) at time (t)

 wf_{it} = Weighting factor of company (i) at time (t)

 cf_{it} = Weighting cap factor of company (i) at time (t)

 x_{it} = Exchange rate from local currency into index currency for company (i) at time (t)

 M_t = Total 'units' of the index at time (t)

 D_t = Divisor of the index at time (t)

7.2. Index Divisor Calculation

7.2.1. Market Capitalization-Weighted



- Take the sum of these products; and
- Divide this by the base value (A), which remains constant until the index composition is modified.

The Fi factors provide information on the number of shares required from each company to track the underlying index portfolio.

6.1.2 Index Formula for Market Cap-Weighted Indices

The same index formula as described under 6.1.1 is used for indices that are not weighted by Free Float Market Capitalization, but by full market capitalization, with the difference that:

$$ff_{iT} = 1$$

Each index has a unique index divisor that is adjusted to maintain the continuity of the index's values across changes due to corporate actions. Changes in weights due to corporate actions are distributed proportionally across all index components. The index divisors are calculated as follows:

$$D_{t+1} = D_t \cdot \frac{\sum_{i=1}^{n} (p_{it} \cdot s_{it} \cdot ff_{it} \cdot cf_{it} \cdot x_{it}) \pm \Delta MC_{t+1}}{\sum_{i=1}^{n} (p_{it} \cdot s_{it} \cdot ff_{it} \cdot cf_{it} \cdot x_{it})}$$

Where:

 D_{t+1} = Divisor at time (t+1)

 D_t = Divisor at time (t)

n = Number of companies in the index

 p_{it} = Price of company (i) at time (t)

 s_{it} = Number of shares of company (i) at time (t)

 ff_{it} = Free-float factor of company (i) at time (t)

cfit = Weighting cap factor of company (i)
at time (t) (only applicable if index is
capped)

 x_{it} = Exchange rate from local currency into index currency for company (i) at time (t)

 ΔMC_{t+1} = The difference between the closing market capitalization of the index and the adjusted closing market capitalization of the index:
For companies with corporate actions effective at time (t+1), the free-float market capitalization is calculated with adjusted closing prices, the new number of shares at time (t+1) and the free-float factor at time (t+1) minus the free-float market capitalization calculated with closing prices, number of shares at time (t) and free-float

7.2.2. Price-Weighted with Weighting Factors

factor at time (t).

Each index has a unique index divisor that is adjusted to maintain the continuity of the index's values across changes due to corporate actions. Changes in weights due to corporate actions are distributed proportionally across all index components. The index divisors are calculated as follows:

$$D_{t+1} = D_t \cdot \frac{\sum_{i=1}^{n} (p_{it} \cdot \mathsf{wf}_{it} \cdot \mathsf{cf}_{it} \cdot x_{it}) \pm \Delta \mathsf{MC}_{t+1}}{\sum_{i=1}^{n} (p_{it} \cdot \mathsf{wf}_{it} \cdot \mathsf{cf}_{it} \cdot x_{it})}$$



Where:

 D_{t+1} = Divisor at time (t+1) D_t = Divisor at time (t)

n = Number of companies in the index p_{it} = Price of company (i) at time (t) = Weighting factor of company (i) at time (t)

 cf_{it} = Weighting cap factor of company (i) at time (t) (only applicable if index is capped)

 x_{it} = Exchange rate from local currency into index currency for company (i) at time (t)

 ΔMC_{t+1} = The difference between the units in the index at closing and the units in the index after calculation parameters have been adjusted:

For companies with corporate actions effective at time (t+1), the units in the index are calculated with adjusted closing prices, the adjusted weighting factors at time (t+1) and the adjusted weighting cap factors at time (t+1)

minus the units in the index calculated with closing prices, weighting factors at time (t) and weighting cap factors at

time (t). **5.2. Index Settlement Values**

6.3.2 Daily Settlement Indices

For DAX®, MDAX®, TecDAX® and DAX® 50 ESG an option settlement index is calculated once a day, using the prices determined in the course of the midday intraday auction on Xetra®. If no price results from the midday intraday auction for a company, the next price available is used. In the event that a current price is not available by the end of the calculation period, the last price available is used for calculation. On chaining days, a future settlement index is calculated analogously.

For DAX, MDAX, TecDAX, DivDAX and DAX 50 ESG a settlement price is calculated once a day, using the prices determined in the course of the midday intra-day auction on Xetra. If no price results from the midday intra-day auction for a company, the last price available before the intraday auction is used for calculation.

6.3.3 Currency Conversion

The indices are available in the currencies set forth in the Vendor Code Sheet which is available on the DAX website www.DAX-indices.com/resources. Selected indices (DAX®, HDAX® and DAX® 50 ESG) are calculated in non-EUR currencies. The intraday currency conversion is based on the spot rates provided by Refinitiv, previously Financial and Risk business of Thomson Reuters. The WM/Reuters currency fixing rates from 5:00 pm CET are used to calculate the indices' closing values.

4.4. Currency Rates

All **real-time indices** use the following currency rates:

- From 09:00 to 17:30 CET, the mid between the latest real-time bid and ask prices is used as the currency rate in order to calculate the indices for the Europe region.
- From 00:00 to 22:00 CET, the mid between the latest real-time bid and ask prices is used as the currency rate in order to calculate International Indices.



- » All end-of-day indices, as well as the closing procedure for the real-time indices, use currency rates as follows:
 - For Europe region, fixed foreign exchange rates (WM losing spot rates from 17:00 CET) are used for the calculation of the indices from 17:30:15 CET.
 - For International Indices, fixed foreign exchange rates are used for the calculation of the indices from 22:00:15 CET.

The fixed foreign exchange rates are provided by WM/Refinitiv – for further information refer to Refinitiv page "WMRSPOT01" or Bloomberg page" WMCO".

6.3.4 Prices Used, Calculation Frequency and Start

Index calculation is performed on every trading day of FWB® Frankfurt Stock Exchange, using prices traded on Deutsche Börse's electronic trading systems Xetra® or Börse Frankfurt whereby the last determined prices are used.

The various performance indices are calculated continuously during the day, whereas computation of the price indices is carried out once a day, at the close of trading.

The price and performance indices of the subsector and subsector All indices are calculated daily at close of trading.

A daily settlement price is calculated once a day for each index involved (on the basis of intra-day midday auction prices) as soon as all prices for the component issues of the respective index are available.

The selection indices (calculated once a second or once a minute) are published as soon as current prices are available for a minimum number of companies belonging to the respective indices. The calculation of the blue-chip index DAX® starts as soon as prices for all companies are available that are currently in the index, latest at 9:06 am. If no opening prices for individual companies are available, the respective closing prices of the previous day are used instead to calculate the indices. The minimum number required for the calculation of the respective indices can be found in

the following table.

8.5.1. Suspension

In the event of a suspension during trading hours, the last price determined before such a suspension is used for all subsequent computations. If such suspension occurs before the start of trading, the closing price of the previous day is used instead. The closing index level is calculated using the respective closing prices (or last prices) established on Xetra or Börse Frankfurt as provided by Refinitiv.

Deviating from the rule above, the following applies to international indices:

In case a constituent is suspended from trading on the exchange taken for index calculation, it will be removed from the index after a period of 10 trading days (initial period) if:

- (1) trading does not resume within this time period,
- (2) within the initial period, trading is announced to resume later than 20 trading days after the end of the initial period,
- (3) during the initial period, if it is unclear when trading will resume.

The constituent will be deleted at market close in local currency of 0.0000001.



	Minimum Number of Companies/ Start Time	Total Number of Companies	Calculation of Daily Settlement Price
DAX®23	40 ₂₄ / 9:06 am x x X	40	Yes
MDAX®	38 ²⁴ X X X	50	Yes
SDAX®	55 X	70	No
TecDAX®	20 • x • x	30	Yes
HDAX®	75 • x • x	Variable	No
DAX® ex Financials ²³	- / 9:06 am	Variable	Yes
DAX® ex Financials 30	30 / 9:06 am	30	Yes

In the event of a suspension during trading hours, the last price determined before such a suspension is used for all subsequent computations. If such suspension occurs before the start of trading, the closing price of the previous day is used instead. The closing index level is calculated using the respective closing prices (or last prices) established on Xetra® or Börse Frankfurt

6.4 Calculation Correction

This section outlines the rules and procedures applicable in case of a calculation error, meaning the provision of index values, usage of index constituents or other elements or the application of weightings, capping, or other aspects of the index methodology in a manner that is not in line with this index methodology, e.g., due to a mistake, incorrect input data, etc.

6.4.1 Rule-based Correction

STOXX Ltd. corrects a Calculation Error without delay on the dissemination day it occurred, provided that STOXX Ltd. becomes aware of such Calculation Error

11. Calculation Correction

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11.1. Rule-Based Correction

STOXX corrects a Calculation Error without delay on the dissemination day it occurred, provided that STOXX becomes aware of such Calculation



before 15:30 CET of that dissemination day and insofar as technically and operationally feasible. STOXX Ltd. does not change intraday index composition of an index.

If STOXX Ltd. became aware of a Calculation Error at or after 15:30 CET, STOXX Ltd. aims at correcting the Calculation Errors as of the end of the next dissemination day, including corrections to index constituents.

STOXX Ltd. amends without undue delay previous incorrect index values or input data only if they are required for the subsequent index values calculation. Incorrect real-time index values disseminated before the effective time of the correction are not restated.

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STOXX amends without undue delay previous incorrect index values or input data only if they are required for the subsequent index values calculation. Incorrect real-time index values disseminated before the effective time of the correction are not restated.

6.4.2 Non-Rule Based Correction

If the above-outlined rule-based error correction cannot be applied, the relevant STOXX Committee assesses without undue delay:

- if and how the Calculation Error should be corrected, including if the index shall be restated, and/or
- if the dissemination of index values shall be suspended (Discretionary Rule, see Section 1.3).

An index should be restated, when the performance of the index (other than Selection Indices) can no longer be replicated. A suspension of index dissemination is triggered when the relevant STOXX Committee decides that the correction will take significant time during which misleading index values could lead to financial, legal, and reputational risks (Discretionary Rule, see Section 1.3).

STOXX Ltd. suspends the dissemination of an index at the latest at the end of the dissemination day after it became aware of a Calculation Error, if the Calculation Error has not been corrected by then.

STOXX Ltd. will resume the dissemination of the index as soon as the correct index calculation is feasible, and the correct historical values are available.

11.2. Non-Rule-Based Correction

If the above-outlined rule-based error correction cannot be applied, relevant STOXX Committees assesses without undue delay:

- if and how the Calculation Error should be corrected, including if the index shall be restated, and/or
- if the dissemination of index values shall be suspended (Discretionary Rule, see Section 2.3).

An index should be restated, when the performance of the index can no longer be replicated. A suspension of index dissemination is triggered when STOXX Committee decides that the correction will take significant time during which misleading index values could lead to financial, legal and reputational risks (Discretionary Rule, see Section 2.3).

STOXX suspends the dissemination of an index at the latest at the end of the dissemination day after it became aware of a Calculation Error, if the Calculation Error has not been corrected by then. STOXX will resume the dissemination of the index as soon as the correct index calculation is feasible, and the correct historical values are available.

6.4.3 Notifications

In general, notifications take the form of an announcement on the DAX website (http://www.DAX-indices.com). Announcements can (but need not, depending on the decision of STOXX Ltd.) be published via relevant financial media. With regard to Calculation Errors, STOXX Ltd. issues notifications in accordance with the following rules:

5.8. STOXX News and Index Data Notifications

For customers a subscription to e-mail notifications is available on the website. Notifications are sent out for short-term corporate actions and dividend changes, unscheduled composition changes due to mergers, spin-offs and delistings, periodic review announcements, index calculation errors, real-time input feed



- STOXX Ltd. will publish a notification before correcting a Calculation Error. Notifications are effective immediately following their issuance, unless otherwise specified in the notification.
- The notification will specify if a Calculation Error will be corrected retrospectively. In case of retrospective correction, STOXX Ltd. will publish the notification using the new end of day closing price.
- If STOXX Ltd. decides under Section 6.4.2 that index dissemination is suspended until the Calculation Error is corrected, a resume notification is published specifying the point in time when index dissemination is resumed, and the correction will take place.

STOXX Ltd. will refrain from the issuance of a notification if it reaches the view that the issuance of a notification is not in line with the applicable laws and may decide to issue such notification at a later point in time when such reasons have lapsed (Discretionary Rule, see Section 1.3). By reason of force majeure or other events beyond the control of STOXX Ltd. it might become impossible for STOXX Ltd. to issue a notification in due time or by the means set out herein. In such cases STOXX Ltd. may exceptionally issue the notification either subsequently immediately following such event or in any case by other means (Discretionary Rule, see Section 1.3).

availability, daily report publication, new index launches and general information from STOXX.

8 Adjustments - Corporate Actions

The total return indices are adjusted for exogenous influences (e.g., price-relevant capital changes) by means of certain correction factors, assuming a reinvestment according to the "opération blanche". The indices are simultaneously adjusted for systematic price changes using ex-ante calculations of the correction factor. The prerequisite for this is to calculate the correction factor on an ex-ante basis. Consequently, the first "ex" price can be adequately included for index calculation purposes. The ex-ante incorporation of adjustments presupposes a general acceptance of the computation formula as well as a general availability of the parameters used. The calculated adjustment factor and a synthetic price accordingly adjusted for this factor are used in the index from the ex-date of a share as long as no "ex" price is available.

8.1 Distributions

8.1.1 Cash Dividends and Other Distributions

8. Corporate Actions and Adjustments

8.1. Corporate Actions

The list of corporate actions indicates the calculation of the adjusted prices and the impact on the index divisor. All corporate actions and dividends are implemented at the effective date (ex-date); i.e., with corporate actions where cash or other corporate assets are distributed to shareholders, the price of the stock will drop on the ex-date. Changes in weights due to corporate actions are distributed proportionally across all index components and equal an investment into the portfolio.

Withholding taxes are considered for all corporate actions and dividends where applicable and defined per country. If STOXX becomes aware of an exception on the taxation, e.g., in case a company confirms a deviating tax treatment the exception will be used for the index calculation.



Cash dividends and bonus distributions are only corrected in performance and net return indices. Special distributions are taken account of in all performance, net return, and price indices. Within the framework of index calculation, the share price is thus modified by the amount of the respective cash distribution, as defined of Section 2.1. The cash dividend and other distributions are determined according to publicly available data such as issuers, financial regulators' announcements.

The c_{it} adjustment factors for cash dividends, bonuses and special distributions are calculated as follows:

$$c_{it} = \frac{p_{i,t-1}}{p_{i,t-1} - D_{i,t}(1-\tau)} \cdot c_{it-1}$$

Where:

p_{i,t-1} = Closing price of the relevant share on the day before the ex-dividend date

D_{i,t} = Cash dividend, bonus, or special distribution on day t

 τ = withholding tax, only for net return indices, otherwise τ = 0

The withholding tax used to calculate the net return indices can be found on www.stoxx.com.

For the latest update on withholding taxes, please refer to the following link:

https://www.stoxx.com/withholding-taxes

For the corporate actions listed below, the following assumptions apply: Shareholders will receive "B" new shares for every "A" share held (where applicable).

 τ = withholding tax

 Div_t = dividend amount announced by

company

 p_{t-1} = closing price on the day before the

ex-date

 p_{adj} = new adjusted price

 wf_{t-1} = weighting factor on the day before

the ex-date

 wf_{adj} = new adjusted weighing factor s_{t-1} = number of shares on the day before the

 s_{adj} = new adjusted number of shares SP = subscription price

All adjusted prices consider withholding taxes, where applicable, based on the new shares being distributed: B × $(1 - \tau)$, where applicable).

If the new shares have a dividend disadvantage - i.e., the new shares have a different dividend from that paid on the old shares - the price for these new shares will be adjusted according to the gross dividend amount.

8.1.1. Cash Dividends

<u>Divisor</u>

Cash distributions that are within decreases the scope of the regular dividend policy or that the company defines as a regular distribution.

Gross Return Indices:

$$p_{adj} = p_{t-1} - Div_t$$

Net Return Indices:

$$p_{adj} = p_{t-1} - Div_t \times (1 - \tau^*)$$

* If a withholding tax (τ) applies then τ > 0, else τ = 0.

Price indices are not affected.



8.1.2. Special Cash Dividend

Divisor

Cash distributions that are **outside** the scope of the regular dividend policy or that the company defines as an extraordinary distribution.

decreases

Gross Return Indices:

$$p_{adj} = p_{t-1} - Div_t$$

Net Return and Price Indices:

$$p_{adj} = p_{t-1} - Div_t \times (1 - \tau^*)$$

* If a withholding tax (τ) applies then $\tau > 0$, else $\tau = 0$.

8.1.2 Stock Dividends

The issue of shares instead of the distribution of cash to provide dividends is treated in the same way as bonus shares or nominal value changes and is accounted for in both performance and price indices. If the holder is granted the right to choose between cash dividends and stock dividends, it shall be assumed that cash dividends will be drawn.

8.1.5. Stock Dividend

8.1.5.1. Ordinary Stock Dividend

Divisor

$$p_{adj} = p_{t-1} \times A / (A + B)$$

a) For free-float market unchanged capitalization weighted indices:

$$s_{adj} = s_{t-1} \times (A+B) / A$$

b) For price weighted indices unchanged with weighting factors: $wf_{adj} = wf_{t-1} \times (A+B) / A$

8.1.5.2. Stock Dividend from Treasury Stock

Divisor

Stock dividends from treasury stocks will be adjusted as cash dividends.

$$p_{adj} = p_{t-1} - p_{t-1} \times B/(A+B)$$
 decreases

- a) If it is considered as regular cash dividend, only the Gross and Net Return indices are adjusted.
- b) If it is considered as **special** decreases cash dividend, Gross Return, Net Return and Price indices are adjusted.

8.1.5.3. Stock Dividend from Redeemable Shares



Divisor

Stock dividends from redeemable shares will be adjusted as cash dividends. In such a case, redeemable shares are considered as:

- A separated share line with a fixed price.
- Ordinary shares that are selftendered on the same ex-date.

$$p_{adj} = p_{t-1} - p_{t-1} \times B/(A+B)$$

- a) If it is considered as regular decreases cash dividend, only the Gross and Net Return indices are adjusted.
- b) If it is considered as **special** decreases cash dividend, Gross Return,
 Net Return and Price indices are adjusted.

8.1.5.4. Stock Dividend of Another Company

<u>Divisor</u>

decreases

$$\begin{aligned} & p_{adj} \\ &= [(p_{t-1} \times A) - [(1 \\ &- \tau^*) \times price \ of \ the \ other \ company \\ &\times B]]/A \end{aligned}$$

* If a withholding tax (au) applies then au > 0 , else au = 0 .

8.2 Changes in Share Capital

8.2.1 Capital Increases

The c_{it} adjustment factors for capital increases (against cash contributions, or using company reserves) are determined as follows:

$$c_{it}^{} = \frac{p_{i,t-1}^{}}{p_{i,t-1}^{} - BR_{i,t-1}^{}} \cdot c_{it-1}^{}$$

Where:

$$BR_{i,t-1} = \frac{p_{i,t-1} - p_B - DN}{BV + 1}$$

8.1.4. Rights Offering

If the subscription price (SP) is not available or equal to or greater than the closing price on the day before the ex-date (out of the money), then no adjustment is made.

If the subscription price (SP) is available as a price range and not as a fixed price, the price and share adjustment is performed only if both lower and upper range are in the money. The average value between lower and upper range will be used as a subscription price.

8.1.4.1. Standard Rights Issue

Divisor

$$p_{adj} = (p_{t-1} \times A + SP \times B)/(A + B)$$



and:

 $p_{i,t-1}$ = Closing price on the day before the ex-

date

BR_{i,t-1} = Theoretical value of subscription rights

p_B = Subscription priceBV = Subscription ratioDN = Dividend disadvantage

For capital increases using company reserves:

 $p_B = 0$

The dividend disadvantage is equivalent to the last dividend paid or the proposed dividend published by financial data providers. For issues on which options are traded at Eurex, this procedure is coordinated with Eurex, taking account of the respective rights markdown to adjust the basis prices of the various equity options.

If the subscription price is not available or equal to or greater than the closing price on the day before the effective date, then no adjustment is made.

If the subscription price is available as a price range and not as a fixed price, Cit factor adjustment is performed only if both lower and upper range are in the money. The average value between lower and upper range will be used as a subscription price.

8.2.2 Capital Reductions

The following formula is used to calculate the c_{it} adjustment factor in the case of a simplified capital reduction:

$$c_{it} = \frac{1}{V_{it}} \cdot c_{it-1}$$

Where:

V_{it} = Reduction ratio of company i valid at time t

In the event of a capital reduction and subsequent capital increase against additional contributions, the introduction of a new class of shares is handled as follows:

The old classes are removed, and the new class is included with the corresponding computation of a chaining factor. In this context, two assumptions are made: firstly, that the last traded price could have been achieved, and secondly that the released capital will be invested in the new class on the subsequent day. The new class is included in the index based on the respective opening price on the first day of the new quotation.

increases

a) For free-float market capitalization weighted indices:

 $s_{adj} = s_{t-1} \times (A+B)/A$

b) For price weighted indices with weighting factors:

unchanged

 $wf_{adj} = wf_{t-1} \times p_{t-1}/p_{adj}$

8.1.4.2. Highly Dilutive Rights Issue

Divisor

A rights offering is considered as Highly Dilutive Rights Issue (HDRI) when the share ratio is larger or equal to 200% (B/A \geq 2).

Scenario 1) If the rights are tradable on ex-date on the same eligible stock exchange as the parent company:

unchanged on ex-date

- The rights will be included into the indices with a theoretical price on the ex-date with the same parameters as the parent company.
- decreases after deletion of rights.
- The rights will be removed at the close of the day they start to trade based on its closing price.
- for ffmcap indices only: increases on the day of the share increase.
- For free-float market capitalization (ffmcap) weighted indices only: If the rights issue results into listing of new shares and satisfy the criteria laid out in the section 8.2, then the number of shares will be increased after the new shares have been listed.

decreases on ex-date.

Scenario 2) If the rights are not tradable on ex-date or not tradable on the ex-date on the same eligible stock exchange as the parent company:

for ffmcap indices only: increases on the day of the share increase



weighted indices on

- For market capitalization weighted indices only: If the rights issue results into listing of new shares and satisfy the criteria laid out in the section 8.2, then the number of shares will be increased after the new shares have been listed.

- Only a price adjustment will be

applied.

8.3 Nominal Value Changes and Share Splits

In the case of nominal value changes (or share splits), it is assumed that the respective price changes occur in proportion to the related nominal value (or number of shares). The adjustment factor reflects this assumption accordingly:

$$\boldsymbol{c}_{it} = \frac{\boldsymbol{N}_{i,t-1}}{\boldsymbol{N}_{i,t}} \cdot \boldsymbol{c}_{it-1}$$

Where:

 $N_{i,t-1}$ = Previous nominal value of share class i (or new number of shares)

N_{i,t} = New nominal value of share class i (or previous number of shares)

8.1.3. Split and Reverse Split

Divisor

$$p_{adi} = p_{t-1} \times A / B$$

a) For free-float market unchanged capitalization weighted indices:

$$s_{adj} = s_{t-1} \times B / A$$
 unchanged

b) For price weighted indices with weighting factors: $wf_{adi} = wf_{t-1} \times B / A$

8.4 Spin-offs

Where a company, A, spins off one of its divisions into new, independent companies, the adjustment is carried out as described below.

A theoretical markdown cannot be calculated on an ex-ante basis since there is no closing price for the shares of the new companies. The spun-off entities are additionally included in the index at a price of 0 on the ex-date to avoid any index tracking errors. For a spin-off affecting the DAX®, for instance, this implies that the index is calculated based on more than 40 issues for at least one day. After close of trading on their first trading day the spun-off companies are removed from the index. At the same time, the c_i factor of company A is adjusted as follows:

$$c_{i,t}^{A} = \left(1 + \sum_{j=B}^{N} \frac{c_{i,t-1}^{j} \cdot p_{i,t-1}^{j}}{c_{i,t-1}^{A} \cdot p_{i,t-1}^{A} \cdot BVj}\right) \cdot c_{i,t-1}^{A}$$

Where:

 $p_{i,t-1}^A =$ Closing price of "A" shares on t-1 $p_{i,t-1}^j =$ Closing price of spun-off company j on t-1 $BV_j =$ Subscription ratio of spun-off company j t-1= First trading day of spun-off company j t = point in time in which the spun-off companies are removed from the index

8.1.8. Spin-Off

<u>Divisor</u>

The adjusted price (p_{adj}), the number of shares before the exdate (s_{t-1}) and the weighting factor on the day before the ex-date (wf_{t-1}) refer to the parent company. For further details on spin-offs, please refer to section 8.2.

unchanged on ex-date

 $\begin{aligned} p_{adj} \\ &= (p_{t-1} \times A \\ &- price \ of \ spun_off \ shares \times B)/A \end{aligned}$

- a) For free-float market capitalization weighted indices: New number of shares for the spun-off company = $s_{t-1} \times B$
- b) For price weighted indices unchanged with weighting factors: on ex-date New weighting factor for the spun-off company = $wf_{t-1} \times B/A$



8.4. Spin-Offs

Each spin-off stock is temporarily added to all affected indices, including the fixed component indices, based on an estimated price. As a precondition a listing on one of the eligible exchanges, pricing and instrument reference data must be available. If the spin-off company is not permanently added, it will be deleted at the close of the day it starts to trade with a traded price being available.

Changes are announced immediately, implemented two trading days later and become effective on the next trading day after implementation.

9 Limitations

This section applies in the event of Limitations that occur due to:

- insufficient rules, meaning the absence of a methodology rule, provision or procedure which leads to a failure when determining the respective index value or which leads to an index value that does not properly reflect the concept / nature of the index, e.g.:
 - performance of the index can no longer be physically replicated.
 - insufficiently available index constituents to fulfil the requirements of the Index Methodology.
- unclear rules, meaning a situation in which the rules leave multiple possible interpretations on how a certain rule shall be applied to a specific situation.
- data insufficiency, meaning a scenario in which the calculation of an index is no longer possible due to insufficient data quantity or quality.
- failure to produce index values as intended; market disruption which results in the performance of the index being unable to be tracked,
- events with a market impact that by their nature could reasonably not be foreseen, or events whose impact on an index or the economic reality the index intends to represent, cannot be determined in advance. Events covered in this section include, but are not limited to, events of natural, social, political, economic nature that may negatively impact regional or global societies or economies. Examples may be, but are not limited to, the following: (i) change to currency convertibility or restriction on capital flows

9 Limitations

9.1.1 Limitations

This section applies in the event of Limitations that occur due to:

- » insufficient rules, meaning the absence of a methodology rule, provision or procedure which leads to a failure when determining the respective index value or which leads to an index value that does not properly reflect the concept / nature of the index, e.g.:
 - performance of the index can no longer be physically replicated.
 - insufficiently available index constituents to fulfil the requirements of the Index Methodology.
- » unclear rules, meaning a situation in which the rules leave multiple possible interpretations on how a certain rule shall be applied to a specific situation; e.g.
 - Corporate actions treatment such as complex corporate actions (disagreement on treatment of corporate action or application of rules),
 - Determination of expected price to new shares in case of Subscription Rights on Other Share Classes or Subscription Rights on Instruments with Embedded Options
- » data insufficiency, meaning a scenario in which the calculation of an index is no



announced by a country; (ii) market disruption, e.g., an event that materially negatively influences the aggregated liquidity, capitalization, or tradability of an entire market; (iii) exchange closure, (iv) government intervention, (v) pandemic, (vi) natural catastrophe. If a Limitation has occurred, the IGC shall decide if and how the Limitation shall be rectified (Discretionary Rule, see Section 1.3). Any such rectification may comprise deviations from the index methodology which may apply as long as the Limitation persists (Discretionary Rule, see Section 1.3).

In this context, STOXX may also decide to cancel an index review.

If a Limitation that could justify the cancellation of an index review occurs two or fewer dissemination days before the scheduled review implementation day, the review will be performed as planned, if reasonably possible. This aims to avoid last-minute changes and not undermine the trading activity that may have already been performed.

If a review is cancelled, STOXX aims to perform it at the next scheduled review of the index or at the next quarterly review date (3rd Friday of March, June, September, and December), whichever comes first and subject to the then prevailing market conditions. If a decision to deviate from the index methodology is taken, it will be communicated as soon as possible in the form of an Announcement or Press Release. STOXX Ltd. will refrain from the issuance of a notification if it reaches the view that the issuance of a notification is not in line with applicable laws and may decide to issue such notification at a later point in time when such reasons have lapsed (Discretionary Rule, see Section 1.3). By reason of force majeure or other events beyond the control of STOXX Ltd. it might become impossible for STOXX Ltd. to issue a notification in due time or by the means set out herein. In such cases STOXX Ltd. may exceptionally issue the notification either subsequently immediately following such an event or in any case by other means.

Any measures will be implemented two dissemination days later and will enter into effect the next dissemination day after implementation unless a different effective date is specified in the notification.

- longer possible due to insufficient data quantity or quality.
- » failure to produce index values as intended.
- » market disruption which results in the performance of the index being unable to be tracked,
- Extreme or exceptional market conditions or analogous extraordinary situations to be addressed: events with a market impact that by their nature could reasonably not be foreseen, or events whose impact on an index or the economic reality the index intends to represent, cannot be determined in advance. Events covered in this section include, but are not limited to, events of natural, social, political, economic nature that may negatively impact regional or global societies or economies. Examples may be, but are not limited to, the following: (i) change to currency convertibility or restriction on capital flows announced by a country; (ii) market disruption, e.g., an event that materially negatively influences the aggregated liquidity, capitalization, or tradability of an entire market; (iii) exchange closure, (iv) government intervention, (v) pandemic, (vi) natural catastrophe.

STOXX Committee(s) may exercise discretion regarding the index methodology and its application when it relates to

- Extreme or exceptional market conditions or analogous extraordinary situations to be addressed in a fast-track way (e.g., Pandemic)
- Index Selection and Index Review such as Exclusion from Rankings, Deviation from Fast Exit/Fast Entry rules and Regular Exit/Regular Entry rules in exceptional cases
- Corporate actions treatment such as complex corporate actions (disagreement on treatment of corp. action or application of rules), Determination of expected price to new shares in case of Subscription Rights on Other Share Classes or Subscription Rights on Instruments with Embedded Options



If a Limitation has occurred, the STOXX Committee(s) shall decide if and how the Limitation shall be rectified. Any such rectification may comprise deviations from the index methodology which may apply as long as the Limitation persists. (Exercise of Discretion, see section 14.1.2)

In this context, STOXX may also decide to cancel an index review.

If a Limitation that could justify the cancellation of an index review occurs two or fewer dissemination days before the scheduled review implementation day, the review will be performed as planned, if reasonably possible. This aims to avoid last minute changes and not undermine the trading activity that may have already been performed.

If a review is cancelled, STOXX aims to perform it at the next scheduled review of the index or at the next quarterly review date (3rd Friday of March, June, September, and December), whichever comes first and subject to the then prevailing market conditions.

If a decision to deviate from the index methodology is taken, it will be communicated as soon as possible in form of an Announcement or Press Release STOXX will refrain from the issuance of a notification if it reaches the view that the issuance of a notification is not in line with applicable laws and may decide to issue such notification at a later point in time when such reasons have lapsed (Discretionary Rule, see Section 1.3). By reason of force majeure or other events beyond the control of STOXX it might become impossible for STOXX to issue a notification in due time or by the means set out herein. In such cases STOXX may exceptionally issue the notification either subsequently immediately following such event or in any case by other means.

Any measures will be implemented two dissemination days later and will enter into effect the next dissemination day after implementation unless a different effective date is specified in the notification.

10 Methodology Review

The purpose of the methodology review is to maintain integrity of the index, i.e., that the index methodology

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10.1 Frequency of Review

In order to ensure the index integrity is maintained, the methodology is reviewed annually and ad hoc if a Limitation has occurred. If a Limitation cannot be addressed with by a methodology review, this may give rise to an index cessation or index transition. STOXX Ltd. shall not be liable for any losses arising from any decisions taken as part of a methodology review.

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10.2 Review Procedure

10.2.1 Initiation of Methodology Review

The IMC proposes an annual methodology review schedule for approval by the IGC (Discretionary Rule, see Section 1.3).

The IMC is in charge of initiating ad hoc methodology reviews in case of a Limitation or based on recommendations to initiate a Methodology Review by other STOXX. Committee (Discretionary Rule, see Section 1.3).

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10.2.1 Initiation of Methodology Review

The IMC proposes an annual methodology review schedule for approval by the IGC (Discretionary Rule, see Section 2.3).

The IMC is in charge of initiating ad hoc methodology reviews in case of a Limitation or based on recommendations to initiate a Methodology Review by other STOXX. Committees (Discretionary Rule, see section 2.3).

10.2.2 Decision and Escalation

The following STOXX. Committees are responsible for making the decisions on amendments to an index methodology:

The IMC decides on changes to the index methodology, unless

- a. a material change to the index methodology is proposed (see Section 10.3 below),
- the change is triggered by an Unclear Rule or Insufficient Rule (as part of a Limitation, Section 9), or
- c. it relates to a request for a market consultation.
- d. financial products relating to the index have a notional value/notional amount of more than EUR 100 mn.

If any of the conditions a) to d) above is met, the decision is taken by IGC.

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The IMC decides on changes to the index methodology, unless

- a) a material change to the index methodology is proposed (see Section 10.3 below),
- b) the change is triggered by an Unclear Rule or Insufficient Rule (as part of a Limitation, Section 9), or
- c) it relates to a request for a market consultation
- d) financial products relating to the index have a notional value/notional amount of more than EUR 100 mn.

If any of the conditions a) to d) above is met, the decision is taken by IGC.

10.3 Material Changes with Consultation

As described in the STOXX Changes to Methodology Policy and in STOXX Consultation Policy (publicly available on STOXX website), prior to proposed

10.3. Material Changes with Consultation

As described in the STOXX Changes to Methodology Policy, prior to proposed material



material changes to the index methodology, a consultation will be performed.

A change to an index methodology shall be considered material in the event of:

- a. a substantial change in the index objective or market/economic reality the index aims to represent (e.g., market leader components vs. mid cap companies), or
- a substantial change of the index methodology in aspects such as, but not limited to, the ones listed below and that would result in altering the overall concept or the nature of the index:
 - i. calculation methods or formulas with a substantial impact on the index performance, or
 - rules regarding the determination of index constituents by application of the index methodology, or
 - rules regarding the determination of the weights of index constituents by application of the index methodology,
 - iv. rules regarding the treatment of corporate actions.

On the contrary, index methodology updates resulting from the application of existing methodology principles or minor clarifications of existing rules or corrections without altering the overall concept or the nature of the index are generally considered non-material.

The IMC determines whether an amendment is material as defined above. In case such determination is not possible, the proposed amendment shall be treated as material.

(Discretionary Rule, see Section 1.3).

In case of Changes to Methodology as described in STOXX Changes to Methodology Policy a STOXX consults with reasonably affected stakeholders ("Stakeholders") prior to take decision.

Stakeholders mean (a) persons or entities who have an index license with STOXX regarding a benchmark administered by STOXX (Subscriber) and/or as far as STOXX is reasonable aware (b) persons or entities and/or third parties who own contracts or financial instruments that reference a benchmark administered by STOXX (Investors)

Considering the Principle of Proportionality, STOXX informs affected Stakeholders as follows:

- either via public consultation open to the entire market and performed via STOXX website.
- or, when the relevant Stakeholders are known, on a restricted basis directly on the Stakeholders e-mail address.

changes to the index methodology, a consultation will be performed.

In case the proposed changes to the Index Methodology are deemed material, a consultation will be performed in accordance with STOXX Consultation Policy.

A change to an index methodology shall be considered material in the event of:

- a) a substantial change in the index objective or market/economic reality the index aims to represent (e.g., market leader components vs. mid cap companies), or
- b) a substantial change of the index methodology in aspects such as, but not limited to, the ones listed below and that would result in altering the overall concept or the nature of the index:
- i) calculation methods or formulas with a substantial impact on the index performance, or
- ii) rules regarding the determination of index constituents by application of the index methodology, or
- iii) rules regarding the determination of the weights of index constituents by application of the index methodology,
- iv) rules regarding the treatment of corporate actions.

On the contrary, index methodology updates resulting from the application of existing methodology principles or minor clarifications of existing rules or corrections without altering the overall concept or the nature of the index are generally considered non-material.

The IMC determines whether an amendment is material as defined above. In case such a determination is not possible, the proposed amendment shall be treated as material.

In case of Changes to Methodology STOXX consults with reasonably affected stakeholders ("Stakeholders") prior to take decision.

Stakeholders mean (a) persons or entities who have an index license with STOXX regarding a benchmark administered by STOXX (Subscriber)



STOXX shall inform in writing the Stakeholders on:

- the key elements of the proposed relevant changes
- the rationale for any proposed relevant changes
- the specific questions to be answered.
- the deadline for receiving feedback.
- the timeline of implementation of the Relevant Changes
- contact details where to provide feedback.
- relevant definitions

The consultation shall enable Stakeholders to submit comments.

The standard consultation period shall be 1 month with the option to shorten or extend this period. The IGC may decide to shorten the 1-month period in the following cases:

- in extreme or exceptional market conditions or analogous extraordinary situations
- in urgent cases, such as a situation in which the Index cannot be replicated anymore.
- in situations where there is no known
 Stakeholders impact or only a limited number of Stakeholders.
- in order to align the effective date of a proposed changed with Index Maintenance,
 e.g. an Equity/Bond Index Rebalancing, Index Review, and Corporate Action Adjustment, or
- any other similar cases applying the principle of proportionality.

The IGC s will consider the feedback received and decide whether the relevant changes shall become effective.

The IGC is not bound by any feedback received. Moreover, if the received feedback is ambiguous, or if no Stakeholders participated, the IGC may decide to conduct another consultation, which again will not be binding.

If the IGC decides that relevant changes shall become effective, STOXX will communicate a timeline on the implementation of the relevant changes, if not already communicated in the consultation material. STOXX will after the consultation make available the Stakeholders feedback received in the consultation and STOXX's summary response to those comments, except where confidentiality has been requested by the respective Stakeholders.

and/or as far as STOXX is reasonable aware (b) persons or entities and/or third parties who own contracts or financial instruments that reference a benchmark administered by STOXX (Investors)

Taking into account the Principle of Proportionality, STOXX informs affected Stakeholders as follows:

- either via public consultation open to the entire market and performed via STOXX website.
- or, when the relevant Stakeholders are known, on a restricted basis directly on the Stakeholders e-mail address.

STOXX shall inform in writing the Stakeholders on:

- the key elements of the proposed Relevant Changes
- the rationale for any proposed Relevant Changes
- the specific questions to be answered
- the deadline for receiving feedback
- the timeline of implementation of the Relevant Changes
- contact details where to provide feedback
- relevant definitions

The consultation shall enable Stakeholders to submit comments.

The standard consultation period shall be 1 month with the option to shorten or extend this period.

The IGC may decide, taking into consideration the principles stipulated in the Index Guides and in the Terms of Reference Appendix, to shorten the 1-month period in the following cases:

- in extreme or exceptional market conditions or analogous extraordinary situations
- in urgent cases, such as a situation in which the Index cannot be replicated anymore.
- in situations where there is no known Stakeholders impact or only a limited number of Stakeholders.



The decision will be communicated as soon as possible in the form of an Announcement or Press Release.

STOXX Ltd. will refrain from issuance of a notification if it reaches the view that the issuance of a notification is not in line with applicable laws and may decide to issue such notification at a later point in time when such reasons have lapsed.

By reason of force majeure or other events beyond the control of STOXX Ltd. it might become impossible for STOXX Ltd. to issue a notification in due time or by the means set out herein. In such cases STOXX Ltd. may exceptionally issue the notification either subsequently immediately following such event or in any case by other means.

At the end of each consultation STOXX Ltd. will make available the feedback received from Stakeholders in the consultation together with a summary of its response to that feedback, except where confidentiality has been requested by the respective Stakeholders. (Discretionary Rule, see Section 1.3).

- in order to align the effective date of a proposed changed with Index
 Maintenance, e.g. an Equity/Bond Index
 Rebalancing, Index Review, and Corporate
 Action Adjustment, or
- any other similar cases applying the principle of proportionality.

The IGC will consider the feedback received and decide whether the Relevant Changes shall become effective.

The IGC is not bound by any feedback received. Moreover, if the received feedback is ambiguous, or if no Stakeholders participated, the IGC may decide to conduct another consultation, which again will not be binding.

If the IGC decides that the Methodology Change shall become effective, STOXX will communicate a timeline on the implementation of the relevant changes, if not already communicated in the consultation material.

STOXX will after the consultation make available the Stakeholders feedback received in the consultation and STOXX's summary response to those comments, except where confidentiality has been requested by the respective Stakeholders.

The decision will be communicated as soon as possible in the form of an Announcement or Press Release.

STOXX will refrain from issuance of a notification if it reaches the view that the issuance of a notification is not in line with applicable laws and may decide to issue such notification at a later point in time when such reasons have lapsed.

By reason of force majeure or other events beyond the control of STOXX it might become impossible for STOXX to issue a notification in due time or by the means set out herein. In such cases STOXX may exceptionally issue the notification either subsequently immediately following such event or in any case by other means.

At the end of each consultation STOXX will make available the feedback received from Stakeholders in the consultation together with a summary of its response to that feedback, except where



confidentiality has been requested by the respective Stakeholders.

The effective date for benchmark methodology changes is aligned, where feasible, with the periodic benchmark reviews dates when the benchmark composition is changed, and a rebalancing is triggered to avoid extra ordinary impact for clients. Material methodology changes should generally be publicly announced 3 months prior to implementation. IGC may decide to shorten the notice period:

- a) In exceptional or urgent cases such as extreme or exceptional market conditions or analogous extraordinary situations
- b) in situations where there is no stakeholder impact and where it has been agreed that the notice period has to be shortened but immediate communication is not possible. A case that requires urgent action is for example a situation in which the investor's ability to replicate the index benchmark performance with his or her portfolio is no longer ensured. In such cases, changes or amendments to the published index methodology ("Index Guides") must be made on the same day the new rule or change is implemented.
- c) to align with the period benchmark review dates and the rebalancing of the benchmarks.

In case of any proposed material change in its methodology, STOXX shall share its view on the key elements of the methodology that will be impacted by a proposed material change. Furthermore, STOXX should include an assessment as to whether the representativeness of the benchmark and its appropriateness for its intended use are put at risk in case the proposed material change is not put in place. In case of any changes or amendments to the Index Guides, Operations and Product will work together to ensure both the public and subscribers are provided with detailed information about the nature and rationale of the change as well as the implications and terms for the new methodology to enter into force.

The product is responsible for adding any change or amendment to the benchmark methodology in the respective Index Guides. Any change or



10.4 Non-Material Changes without Consultation

Non-material changes of the index methodology, including a description of the impact and the rationale, will be announced via Announcement or Press Release, effective immediately following publication, unless otherwise specified in the notification (Discretionary Rule, see Section 1.3). STOXX Ltd. will refrain from the issuance of a notification if it reaches the view that the issuance of a notification is not in line with applicable laws and may decide to issue such notification at a later point in time when such reasons have lapsed (Discretionary Rule, see Section 1.3). By reason of force majeure or other events beyond the control of STOXX Ltd. it might become impossible for STOXX Ltd. to issue a notification in due time or by the means set out herein. In such cases STOXX Ltd. may exceptionally issue the notification either subsequently immediately following such event or in any case by other means.

amendment must also be added to the Index Guides' change history.

10.4. Non-Material Changes without Consultation

Non-material changes of the index methodology, including a description of the impact and the rationale, will be announced via Announcement or Press Release, effective immediately following publication, unless otherwise specified in the notification (Discretionary Rule, see Section 9). STOXX will refrain from the issuance of a notification if it reaches the view that the issuance of a notification is not in line with applicable laws and may decide to issue such notification at a later point in time when such reasons have lapsed (Discretionary Rule, see Section 9). By reason of force majeure or other events beyond the control of STOXX it might become impossible for STOXX to issue a notification in due time or by the means set out herein. In such cases STOXX may exceptionally issue the notification either subsequently immediately following such event or in any case by other means.

Annex II - New sections of the DAX Equity Index Calculation Guide previously not being part of any guide

Rule as per DAX Equity Index Calculation Guide

3.1 Dissemination Calendars

The indices are disseminated Monday through Friday between 00:00 and 22:15 CET, according to the calendars defined as follows:

Xetra Calendar: every weekday except January 1st, Good Friday, Easter Monday, May 1st, December 25th and December 26th.

STOXX Global Calendar: every weekday except January 1.

In exceptional cases, the STOXX Index Governance committee can decide about changes to the dissemination calendar.

3.2 Dissemination Period

Each index has a defined dissemination start and end time. The actual dissemination of each index is triggered, when the first opening stock price for that index is received within these time frames.



For the latest update, please refer to the following links:

Dissemination period: https://www.stoxx.com/res-dissemination

Individual index dissemination times: http://www.stoxx.com/data/vendor_codes.html

3.3 Real-Time And End-Of-Day Indices

The indices are calculated and disseminated at different frequency standards:

- » Real-time indices: Generally disseminated every second, every 15 seconds or every 60 seconds, depending on the respective index.
- **End-of-day indices**: Calculated and disseminated once a day at the end of the index dissemination period.

All indices including their frequencies are listed in the data vendor code file: https://www.stoxx.com/data-vendor-codes

The index values are disseminated over the Consolidated Exchange Feed (CEF) of Deutsche Börse and can be procured directly from data vendors. For further information: https://www.stoxx.com/res-dissemination

4.1 Sources

The input data sources for the index calculation include:

» Real-time and end-of-day stock prices and currency exchange rates provided by Refinitiv.

4.3 Data Accuracy

The data accuracy for the following factors of the index calculation is defined as (unless stated differently in the individual index methodologies):

- Input data (e.g., pricing and currency rates) and other underlying data: rounded to seven decimal places.
- Index divisors: rounded to integer numbers.
- Market capitalization: rounded to two decimal places.
- Free-float factors: rounded to four decimal places.
- Product of (number of shares x Free-float factor x weighting cap factor): rounded to integer numbers.
- Product of (weighting factor x weighting cap factor): rounded to integer numbers.
- Index values: rounded to two decimal places for dissemination.
- Weights: expressed in percentage with 5 decimals

4.5 Stock Prices

The data hierarchy used to process stock prices and calculate the DAX equity indices are as follows: All data is provided by Refinitiv. For all non-equity indices, the individual index methodologies contain further descriptions about the pricing sources and types.



- **Opening price**: the first traded price during the official trading hours of the stock's trading system; until this is available, the previous day's closing/adjusted price is used.
- » **Intraday price**: the currently traded price during the official trading hours of the stock's trading system. When the stock is not traded, the last available stock price is used, this can either be the last available intraday stock price (e.g., if the stock is temporarily suspended) or the last available closing/adjusted price (e.g., if the stock exchange is closed).
- » **Closing price**: the last traded price or auction price during the official trading hours of the stock's trading system is used. If the stock has not been traded all day, then the previous day's closing/adjusted price is used.
- » Adjusted price: the closing price is adjusted to reflect a stock's corporate action that will be effective the next trading day.
- » Stock prices in local currency are converted to EUR first before being converted to the index currency.

5.1 Open Quotations

The index open quotation takes the opening prices of all stocks in a real-time index into account. This value indicates what the index value would have been, if all opening stock prices had been received at the same time.

The index open quotations for the real-time indices are calculated either as soon as all the relevant opening stock prices are received or, at the latest, at 10:30 CET. If an opening stock price is unavailable at 10:30 CET, the stock's previous day's closing/adjusted price is used.

Non-EUR stock prices are converted into EUR using the currency rate valid at the time of the opening stock price (or previous day's closing/adjusted price), i.e., opening stock prices are converted using real-time currency rates and the previous day's adjusted closing prices are converted using WM fixed exchange rates of the day before.

5.3 Daily Reports

The daily reports for the DAX indices are published after the index dissemination period for the relevant region on the STOXX index data distribution system. The daily reports include the following sets of data:

- Stock prices: both closing and adjusted prices for all components of the DAX indices.
- Stock reference data and identifiers for all components of the DAX indices.
- Index-related values: closing values, market capitalization and divisors for all indices.
- Currency rates to EUR for all currencies used in any DAX indices.
- Corporate actions and dividends effective the next trading day.
- Other information like weightings, corporate actions and dividend forecasts.

5.4 Corporate Action Forecasts

The corporate action forecasts are updated daily and include information about future adjustments induced by confirmed corporate events. This includes, but it is not limited to:

» Mergers, takeovers, spin-offs, price and shares adjustment, and IPOs.



All corporate actions forecasts are subject to change. Customers are recommended to download regularly the forecast from the website and subscribe to corporate actions alerts to receive notification for the latest changes.

5.5 Monthly Reports

The monthly reports are published each month and include the following data for selected indices:

- Index performance
- Index fundamentals
- Index correlation
- Factsheets for various indices with information on fundamental ratios, performance data and other statistics

5.6 Selection Lists

Selection lists are produced for indices with a fixed number of components in order to:

- indicate possible changes in the composition of the index at the time of the next quarterly / semiannual / annual review, and
- determine replacements for any stock deleted from the indices due to corporate actions.
- » The STOXX Index Governance Committee(s) may decide to update the selection lists in between the regular publication dates to reflect extraordinary market movements and underlying data changes.

5.7 Index Review Lists

Each index has defined dates, when the new constituents and the underlying data (shares, free- float, weighting-cap factors) is announced and implemented. The component and the underlying data announcement dates differ by index category and are therefore covered in the respective DAX Methodology Guides. The quarterly implementation for all indices is by default on the third Friday in March, June, September and December, otherwise, specified in the respective DAX Methodology Guides.

6 Index Parameters

6.1 Price and Return Indices

All indices are calculated as price and return indices. Dividend payments are invested in return indices only and neglected in price indices. Return indices are available as gross-return versions, calculated with a full dividend re-investment and as net-return investment, where dividends minus the withholding taxes are invested.

6.2 Indices in EUR, USD and other currencies

All stock prices of the indices are converted to EUR and USD, as follows:

- EUR indices: non-EUR stock prices are converted to EUR for the index calculation.
- USD indices: non-EUR stock prices are converted to EUR first (as above), and then together with the EUR stock prices converted to USD for the index calculation.

Some indices are additionally available in other currencies. The following rule applies:

» Indices in other currencies: non-EUR stock prices are converted to EUR first, and then - together with the EUR stock prices - converted to the appropriate index currency for the index calculation.



8.1.6 Return of Capital and Share Consolidation

Divisor

The event will be applied as a combination of cash/special dividend together with a reverse split.

- a) If the return of capital is considered as **regular** cash dividend, then the treatment for decreases Gross and Net Return of section 8.1.1 and 8.1.3 apply while the treatment for Price indices of section 8.1.3 applies accordingly.
- b) If the return of capital is considered as **special** cash dividend, then the treatment for Gross Return, Net Return and Price indices of section 8.1.2 and 8.1.3 apply decreases accordingly.

 $p_{adj} = [p_{t-1} - capital\ return\ announced\ by\ the\ company \times (1 - \tau^*)] \times A/B$

- * If a withholding tax (τ) applies then $\tau > 0$, else $\tau = 0$.
- a) For free-float market capitalization weighted indices:

$$s_{adj} = s_{t-1} \times B / A$$

b) For price weighted indices with weighting factors:

$$wf_{adj} = wf_{t-1} \times B / A$$

8.1.7 Repurchase of Shares/Self-Tender

Divisor

 $p_{adj} = [(p_{t-1} \times s_{t-1}) - (tender\ price \times number\ of\ tendered\ shares)]/s_{adj}$

- a) For Free-Float Market Capitalization Weighted Indices: Decreases $s_{adj} = s_{t-1} number\ of\ tendered\ shares$
- b) For Price Weighted Indices With Weighting Factors: $wf_{adj} = wf_{t-1} \times p_{t-1}/p_{adj}$

Unchanged



8.1.9 Combination of Stock Distribution (Dividend or Split) And Rights Offering

Divisor

For the below corporate actions, the following additional assumptions apply:

Shareholders receive "B" new shares from the distribution and "C" new shares from the rights offering for every "A" share held.

If "A" is not equal to one, all the following 'new number of shares' formulas need to be divided by "A":

a) If rights are applicable after stock distribution (one action applicable to another)

increases

$$p_{adj} = [p_{t-1} \times A + SP \times C(1 + B/A)]/[(A + B) \times (1 + C/A)]$$

$$s_{adj} = s_{t-1} \times [(A + B) \times (1 + C/A)]/A$$

b) If stock distribution is applicable after rights (one action applicable to another)

increases

$$p_{adj} = (p_{t-1} \times A + SP \times C) / [(A + C) \times (1 + B/A)]$$

$$s_{adj} = s_{t-1} \times (A + C) \times (1 + B/A)$$

c) Stock distribution and rights (neither action is applicable to the other)

increases

$$p_{adj} = (p_{t-1} \times A + SP \times C)/[(A+B+C)$$

$$s_{adj} = s_{t-1} \times (A+B+C)/A$$

d) For price weighted indices with weighting factors: Adjusted prices will be calculated unchanged as above a) to c)

$$wf_{adi} = wf_{t-1} \times p_{t-1}/p_{adi}$$

No price adjustments are made. The change in market capitalization (for price weighted indices: the change in units) determines the divisor adjustment.

a) For free-float market capitalization weighted indices:

If the change in market capitalization between added and deleted companies of an index increases (decreases), then the divisor increases (decreases). If the change is null, then the divisor remains unchanged.

b) For price weighted indices with weighting factors:

If the change in units between added and deleted companies of an index increases (decreases), then the divisor increases (decreases) accordingly. If the change is null, then the divisor remains unchanged.



8.1.11 Free-Float and Shares Changes

No price adjustments are made. The change in market capitalization (for price weighted indices: the change in units) determines the divisor adjustment. Please refer to 8.2 for further details.

a) For free-float market capitalization weighted indices:

If the change in market capitalization of an index increases (decreases), then the divisor increases (decreases). If the change is null, then the divisor remains unchanged.

b) For price weighted indices with weighting factors:

If the change in units of an index increases (decreases), then the divisor increases (decreases) accordingly. If the change is null, then the divisor remains unchanged.

8.5.3 Delisting

Stocks are deleted following official delisting. A company will be deleted from the index based on the traded stock price on its primary market, if available, or else the OTC stock price; if neither price is available, the company will be deleted at close in local currency of 0.0000001.

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Changes are announced immediately, implemented two trading days later and become effective the next trading day after implementation.

8.6 Payment Defaults and Dividend Data Changes

A correction is applied, when a dividend is declared unpaid (payment default) or the dividend amount is changed by the company after the ex-date². The following rules apply:

- » For indices that held the affected company on the ex-date a reinvestment is applied via a divisor adjustment to correct the index points have been previously added. A positive (negative) reinvestment is applied, if the difference between the new amount and old amount is larger (smaller) than 0. The divisor decreases (increases), if a positive (negative) reinvestment is applied. In case the affected company is no longer included in the index, STOXX may decide not to apply the correction.
- » A correction will be accepted only if the payment default is discovered within 3 months after the original ex-date.
- » Past index values (history) are not corrected.
- » The index parameters (number of shares, free-float factors, weighting cap factors, currency rates, divisors) effective on the day prior to the correction date are used.

² If the ex-date falls before the launch date the index is not corrected.