

Zug, October 2<sup>nd</sup>, 2023

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

Dear customer,

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 27<sup>th</sup>, 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 18<sup>th</sup>, 2024, the currently applicable <u>Guide to the DAX Equity Indices</u> 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 Methodology Guide</u><sup>1</sup>. It shows which sections of the expiring Guide to the DAX Equity Indices have been transferred to the DAX Equity Index Methodology Guide. It also allows for a comparison of the former section version with the new section version.

In addition, an overview over which chapters have been newly created in the DAX Equity Index Methodology Guide that have either been part of a guide other than the Guide to the DAX Equity Indices or not been part of the Guide to the DAX Equity Indices before is provided.

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<sup>&</sup>lt;sup>1</sup> Disclaimer: This document does not contain the official rules that will apply from 18th March 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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- 3.1. DAX Investable Universe
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# **Annex I –** Sections as per Guide to the DAX Equity Indices vs. sections as per DAX Equity Index Methodology Guide

# Rule as per the Guide to the DAX Equity Indices Rule as per DAX Equity Index Methodology Guide

### 1.1 Principles for Index Calculation

The DAX Equity Indices are calculated based on the following principles wherever possible:

- Representative: The indices aim to best represent the performance of the target market
- Tradeable: Index components are tradeable in relation to the size of the companies and the target market
- Replicable: Performance of indices can be tracked by an actual portfolio
- Stable: High degree of index continuity

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### 2.1 Principles for Index Calculation

The DAX Equity Indices are calculated based on the following principles wherever possible:

- Representative: The indices aim to best represent the performance of the target market
- Tradeable: Index components are tradeable in relation to the size of the companies and the target market
- Replicable: Performance of indices can be tracked by an actual portfolio
- Stable: High degree of index continuity



- Rules-based: Index calculation and changes to the index composition follow transparent rules.
- Predictable: Changes to index rules are publicly announced with a reasonable notice period (generally at least 2 trading days), and are never implemented retroactively

Transparent: Decisions are based on public information

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- Predictable: Changes to index rules are publicly announced with a reasonable notice period (generally at least 2 trading days), and are never implemented retroactively
- Transparent: Decisions are based on public information

### 1.2 Advisory Board

The Advisory Board for Equity Indices ("Arbeitskreis Aktienindizes") provides advice on topics related to indices administered by STOXX Ltd and referenced in this guide. It acts as an advisory body based on the basic principles mentioned and the rules of these guidelines. The Advisory Board does not take binding decisions on behalf of STOXX Ltd.

The Advisory Board for Equity Indices consists of employees appointed by STOXX Ltd. and representatives of leading national and international financial institutions. The Advisory Board's meetings usually take place not later than the sixth trading day in March and September. Extraordinary meetings may also be convened.

### 1.4 Index Termination Policy

For termination of an index or an index family that underlie financial products issued on the market, to the knowledge of STOXX Ltd., a market consultation will be conducted by STOXX Ltd. in advance of the termination in line with STOXX Transition Policy and STOXX Consultation Policy (publicly available on STOXX website). The length of the consultation period will be defined in advance based on the specific issues of each proposed termination subject to STOXX Benchmark Transition Policy (Discretionary Rule, see Section 1.3). During the consultation period, clients and third parties will have the chance to share their concerns regarding the termination of the index or index family. Based on the collected feedback, STOXX Ltd. may rethink its decision to terminate an index or an index family (Discretionary Rule, see Section 1.3). At the end of the consultation period, STOXX Ltd. will publicly announce its final decision about the termination. A transition period will be granted in the event of termination (Discretionary Rule, see Section 1.3).

### 2.2 Advisory Board

The Advisory Board for Equity Indices ("Arbeitskreis Aktienindizes") provides advice on topics related to indices administered by STOXX Ltd and referenced in this guide. It acts as an advisory body based on the basic principles mentioned and the rules of these guidelines. The Advisory Board does not take binding decisions on behalf of STOXX Ltd.

The Advisory Board for Equity Indices consists of employees appointed by STOXX Ltd. and representatives of leading national and international financial institutions. The Advisory Board's meetings usually take place not later than the sixth trading day in March and September. Extraordinary meetings may also be convened.

### 2.4 Termination Policy

For termination of an index or an index family that underlie financial products available for trading on the market, to the knowledge of STOXX, a market consultation will be conducted by STOXX in advance of the index termination in line with STOXX Transition Policy and STOXX Consultation Policy (publicly available on STOXX website). The length of the consultation period will be defined in advance based on the specific issues of each proposed termination subject to STOXX Benchmark Transition Policy (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). During the consultation period, clients and third parties will have the chance to share their concerns regarding the termination of the index or index family. Based on the collected feedback, STOXX may review its decision to terminate an index or an index family (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). At the end of the consultation period, STOXX will publicly announce its final decision about the termination. A transition



For termination of an index or an index family that do not underlie financial products issued on the market, no market consultation will be conducted. period will be granted in the event of termination (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide).

For termination of an index or an index family that do not underlie financial products available for trading on the market, no market consultation will be conducted.

### 2.2 Fixed Holdings

The shares of a company that are not assigned to the free float are considered fixed holdings. By definition, these shares cannot be freely traded.

### 5.7.1 Fixed Holdings

The shares of a company that are not assigned to the free float are considered fixed holdings. By definition, these shares cannot be freely traded.

#### 2.3 Free Float

1. Free float refers to the freely tradeable shares of a company that are not held in fixed ownership. The following rules apply to determine the free float: All shareholdings of an owner which, on an accumulated basis, account for at least 5 percent of a company's share capital attributed to a class of shares are considered to be non-free float. Shareholdings of an owner also include shareholdings.

- held by the family of the owner as defined by section 19 of the Market Abuse Regulation (MAR),
- for which a pooling has been arranged in which the owner has an interest,
- managed or kept in safe custody by a third party for the account of the owner,
- held by a company which the owner controls as defined by section 290 (2) of the German Commercial Code (HGB),
- subject to a statutory or contractual qualifying period of at least six months.

This does not include shareholdings of

- asset managers and trust companies,
- funds and pension funds,
- investment companies or foreign investment companies in their respective special fund assets (excluding insurance companies)

as identified via the company register of the respective competent financial supervisory authority, insofar as they are held as part of short-term investment strategies and the size of a shareholding does not exceed 25 percent of a company's share capital. This does not apply to shareholdings held by venture capital companies,

#### 5.7.2 Free Float

Free float refers to the freely tradeable shares of a company that are not held in fixed ownership. The following rules apply to determine the free float:

- 1. Shares held by the issuing company (treasury shares) and all shareholdings of an owner which, on an accumulated basis, account for at least 5 percent of a company's number of shares attributed to a class of shares are considered to be non-free float. Shareholdings of an owner also include shareholdings
- » held by the family of the owner as defined by section 19 of the Market Abuse Regulation (MAR),
- For which a pooling has been arranged in which the owner has an interest,
- » managed or kept in safe custody by a third party for the account of the owner,
- » held by a company which the owner controls as defined by section 290 (2) of the German Commercial Code (HGB),
- » subject to a statutory or contractual qualifying period

This does not include shareholdings of

- » asset managers and trust companies,
- » funds and pension funds,
- » investment companies or foreign investment companies in their respective special fund assets (excluding insurance companies)

as identified via the company register of the respective competent financial supervisory authority, insofar as they are held as part of short-term investment strategies and the size of a shareholding does not exceed 25 percent of a company's number



government funds or shareholdings held by their financial agencies, or supranational funds.

In this context, shares for which the acquirer has at the time of purchase clearly and publicly stated that strategic goals are being pursued, and that the intention is to influence the company policies and ongoing business of the company in the long-term, are not considered a short-term investment. In addition, shares having been acquired through a public purchase offer will not be considered a short-term investment.

The determination of the shareholder structure of a company is based on regulatory announcements pursuant to the Securities Trading Act (WpHG) as provided by the Company Register (Unternehmensregister) / EQS. In case no regulatory announcement is available, other publicly available sources are additionally used to determine the shareholder structure.

- 2. Shares of an owner that are subject to a statutory or contractual qualifying period of at least six months with regard to their disposal and shares held by the issuing company (treasury shares) are irrespective of the size of a shareholding always considered fixed holdings.
- 3. In case of an ongoing takeover, the absolute number of shares held by the acquirer is taken from the companies' tender offer result publications pursuant to the Securities Acquisition and Takeover Act (WpÜG) and calculated against the total number of shares of the target company (cf. section 2.5) to determine the stock's free float.

Shares that are under the control of the overtaking companies via derivatives will also be considered for the determination of the stock's free float. The derivatives need to be subject to registration and correspondingly registered according to legislation in Securities Trading Act (WpHG) and Securities Acquisition and Takeover Act (WpÜG).

Further information on the determination of free float in case of an ongoing takeover can be found in section 5.1.4.

The various criteria laid down in numbers 1 to 3 are also fully applied to classes of shares that are subject to restrictions of ownership. For the purpose of the determination of the free float as

of shares. This does not apply to shareholdings held by venture capital companies, government funds or shareholdings held by their financial agencies, or supranational funds.

In this context, shares for which the acquirer has at the time of purchase clearly and publicly stated that strategic goals are being pursued, and that the intention is to influence the company policies and ongoing business of the company in the long-term, are not considered a short-term investment. In addition, shares having been acquired through a public purchase offer will not be considered a short-term investment.

The determination of the shareholder structure of a company is based on regulatory announcements pursuant to the Securities Trading Act (WpHG) as provided by the Company Register (Unternehmensregister) / EQS. In case no regulatory announcement is available, other publicly available sources are additionally used to determine the shareholder structure.

2. In case of an ongoing takeover, the absolute number of shares held by the acquirer is taken from the companies' tender offer result publications pursuant to the Securities Acquisition and Takeover Act (WpÜG) and calculated against the total number of shares of the target company (cf. section 4.12) to determine the stock's free float.

Shares that are under the control of the overtaking companies via derivatives will also be considered for the determination of the stock's free float. The derivatives need to be subject to registration and correspondingly registered according to legislation in Securities Trading Act (WpHG) and Securities Acquisition and Takeover Act (WpÜG).

Further information on the determination of free float in case of an ongoing takeover can be found in the DAX Equity Index Calculation Guide.

The various criteria laid down in numbers 1 and 2 are also fully applied to classes of shares that are subject to restrictions of ownership. For the purpose of the determination of the free float as described above, each ISIN under which shares are traded is considered a separate share class.

If STOXX Ltd. determines and publishes a company's free float within the framework of a quarterly review,



described above, each ISIN under which shares are traded is considered a separate share class.

If STOXX Ltd. determines and publishes company's free float within the framework of a scheduled chaining, this free float factor will only be changed or corrected at the next scheduled chaining date. This is also the case if STOXX Ltd. learns of facts or circumstances following the determination of the free float that would have resulted in the determination of a different free float factor had they been known at the time of the determination.

this free float factor will only be changed or corrected at the next review implementation date, unless it is impacted by a corporate action as described in the DAX Equity Index Calculation Guide prior to the next review date. This is also the case if STOXX Ltd. learns of facts or circumstances following the determination of the free float that would have resulted in the determination of a different free float factor had they been known at the time of the determination.

### 2.4 Free Float Market Capitalization

Free Float Market Capitalization is the product of market capitalization and the Free Float factor.

# 5.8 Market Capitalization and Free Float Market Capitalization

The product of the number of shares of a company's share class and the price of the respective share class is defined as the full market capitalization of a company's share class.

The free-float market capitalization is the share of a stocks' total market capitalization that is available for trading: Free-float market capitalization = free-float factor × full market capitalization

### 2.5 Share Capital

The share capital is the total number of shares admitted to trading for one security at the time of determination of the share capital. STOXX Ltd. determines the share capital of a company on the basis of regulatory announcements pursuant to the Securities Trading Act (WpHG) as provided by the Company Register (Unternehmensregister) / EQS. In case no regulatory announcement is available, other publicly available sources are additionally used to determine the shareholder structure.

#### 5.6 Number of Shares

A number of shares including treasury shares held by the company itself is assigned uniquely to each stock within the DAX universe. The number of shares is reviewed on a quarterly basis. They are published on the quarterly underlying data announcement and implemented on the quarterly review implementation.

STOXX Ltd. determines the number of shares of a company based on regulatory announcements pursuant to the Securities Trading Act (WpHG) as provided by the Company Register (Unternehmensregister), Commercial Register extract (Handelsregisterauszug) and/or EQS. In case no regulatory announcement is available, other publicly available sources are additionally used to determine the number of shares.

#### 2.6 Turnover Rate

A Turnover rate is calculated for each security on the ranking list. It is determined as the ratio of 12months Order Book Volume divided by free float market capitalization as defined in sections 2.4 and 2.10.

#### 5.12.1 Turnover Rate

A turnover rate is calculated for each stock on the Selection List. It is determined as the ratio of 12-months Order Book Volume divided by free float market capitalization as defined in section 4.14

### 2.7 Legal Headquarters

### **5.1.1.1 Legal Headquarters**



The operating centre (head office) of commercial
companies is termed the legal headquarters. It is
generally specified in the articles of association.

The operating centre (head office) of commercial companies is termed the legal headquarters. It is generally specified in the articles of association.

#### 2.8 Operating Headquarters

# The operational headquarters is the location of (part of) the executive management or (part of) the administrative management.

### **5.1.1.2 Operating Headquarters**

The operational headquarters is the location of (part of) the executive management or (part of) the administrative management.

### 2.9 Market Capitalization

The product of the number of outstanding shares of a company's share class and the price of the respective share class is defined as the market capitalization of a company's share class.

# **5.8 Market Capitalization and Free Float Market Capitalization**

The product of the number of shares of a company's share class and the price of the respective share class is defined as the full market capitalization of a company's share class.

The free-float market capitalization is the share of a stocks' total market capitalization that is available for trading: Free-float market capitalization = free-float factor × full market capitalization

#### 2.10 Order Book Volume

The sum of the turnover determined on Xetra® and Börse Frankfurt for the respective share classes of a company is defined as the Order Book Volume. The period over which the turnover is calculated is stipulated individually for each index type and will be applied pursuant to the specific provisions for the respective index type.

### 5.12.2 Order Book Volume

The sum of the turnover determined on Xetra and Börse Frankfurt for the respective share classes of a company is defined as the Order Book Volume.

The period over which the turnover is calculated is stipulated individually for each index type and will be applied pursuant to the specific provisions for the respective index type.

In case of a takeover during the calculation period, the daily turnover value of the share class that is included in the index on a given date is used for the calculation of the Order Book Volume.

In case the shares of a newly listed company result from conversion of the shares of two or more companies that cease to exist (i.e., Merger of companies), the Order Book Volumes of the companies are aggregated, provided that they were listed on the FWB Frankfurt Stock Exchange, in one of the transparency standards, prior to the merger. A requirement for aggregating Order Book Volumes is that the companies that no longer exist are delisted from active trading status on any stock exchange. The Order Book Volumes are aggregated retroactively at this point.

### 2.11 Sector Affiliation

For the purpose of Sector Indices as described in Section 3.3 companies are assigned to the sectors

### **5.3 DAX Industry Classification**

For the purpose of Sector Indices, stocks are assigned to the sectors according to the DAX Industry



according to the sector classification (under Section 11.3). Sector assignment is dependent upon the respective company's sales focus

Changes in the sector assignment are based on the annual review of the sector classification of listed companies on the regulated market of FWB Frankfurt Stock Exchange and will be reflected on the August ranking list (published as of the third trading day in September). If a company's sector classification changes extraordinarily, due to a change of the company's sales focus (respectively investment focus in case of an investment company) the company will be reclassified on the following quarterly chaining date. The cut-off date for the extraordinary change in the sector classification is the cut-off date of the quarterly ranking list (i.e. the ranking list published in March, June, September, December). Extraordinary changes of the sector classification are also performed in the Scale Segment.

The following rule shall apply for investment companies: Investment companies are initially allocated to the Financial Services/Private Equity & Venture Capital sector. If the activities of a company extend to several industrial areas, the company is allocated to the "Industrial/Industrial Diversified" sector (Discretionary Rule, see Section 1.3). Investment companies with a clear focus on a certain sector are allocated to that sector.

Classification (see Guide to Industry Classifications Used By STOXX Ltd.). Sector assignment is dependent upon the respective issuing company's sales focus.

Changes in the sector assignment are based on the annual review of the sector classification of listed companies on the regulated market of FWB Frankfurt Stock Exchange and will be reflected on the Selection List published in September.

If a company's sector classification changes extraordinarily, due to a change of the company's sales focus (respectively investment focus in case of an investment company) the company will be reclassified on the following quarterly review implementation date. The cut-off date for the extraordinary change in the sector classification is the cut-off date of the Selection List published in March, June, December. Extraordinary changes of the sector classification are also performed in the Scale Segment.

The following rule shall apply for investment companies: Investment companies are initially allocated to the Financial Services/Private Equity & Venture Capital sector. If the activities of a company extend to several industrial areas, the company is allocated to the "Industrial/Industrial Diversified" sector (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). Investment companies with a clear focus on a certain sector are allocated to that sector.

#### 3.1 Selection Indices

The Selection Indices represent the largest companies in terms of market capitalization on the regulated market of Frankfurt Stock Exchange that fulfil certain minimum quality requirements.

#### DAX®

The DAX® Index includes the 40 largest companies in terms of market capitalization on the Regulated Market of FWB® Frankfurt Stock Exchange that fulfil certain minimum quality and profitability requirements. In contrast to the other selection indices MDAX, SDAX and TecDAX, companies in DAX index must fulfil a profitability requirement in the two most recent fiscal years in order to be eligible for inclusion into DAX Index. The detailed admission criteria are given in section 4.1. The DAX® price index has continued the Börsen-Zeitung index, which historically extends back to 1959, since its introduction.

#### MDAX®

### 7.1 DAX, MDAX, SDAX, TecDAX 7.1.1 OVERVIEW

#### DAX

The DAX Index includes the 40 largest companies in terms of market capitalization on the Regulated Market of FWB Frankfurt Stock Exchange that fulfil certain minimum quality and profitability requirements. In contrast to the other selection indices MDAX, SDAX and TecDAX, companies in DAX index must fulfil a profitability requirement in the two most recent fiscal years to be eligible for inclusion into DAX Index.

The DAX price index has continued the Börsen-Zeitung index, which historically extends back to 1959, since its introduction.

### **MDAX**



MDAX® includes the 50 companies which follow DAX® companies in terms of market capitalization or that are not eligible for DAX® inclusion because they don't fulfil its profitability requirements and that fulfil minimum quality requirements. The detailed admission criteria are given in section 4.1. SDAX®

SDAX® includes the 70 companies which follow after MDAX® companies in terms of market capitalization and that fulfil minimum quality requirements. The detailed admission criteria are given in section 4.1.

#### TecDAX®

The TecDAX® Index includes the 30 largest companies in terms of market capitalization that fulfil minimum quality requirements. Tech is hereby defined according to the sector classification in section 4.1.

#### **HDAX®**

Together, the 40 companies from DAX® Index, the 50 companies from MDAX® Index and the 30 companies from TecDAX® index form HDAX®'s index portfolio. Hereby, companies that are included in both TecDAX and DAX or MDAX are considered only once. As a result, this index includes the large and medium-sized companies in the Regulated Market without any sector restriction.

#### Scale 30 Index

The Scale 30 Index selects the most liquid companies from the Scale segment. It covers the 30 most liquid companies by 12-months Order Book Volume that are traded on Xetra®. Companies that are traded on Börse Frankfurt only are not eligible. Similar to the methodology of the DAX family, trading values from Börse Frankfurt as well as Xetra® are considered. The Scale 30 Index offers a liquid alternative for qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

#### **DAX®** ex Financials Index

DAX® ex Financials Index corresponds to the composition of the DAX® Index excluding the FIRE super sector (Finance, Insurance and Real Estate). It therefore tracks the DAX constituents which are not part of the FIRE super sector. It thus includes a variable number of companies which tends to be lower than 40. The detailed admission criteria are given in section 4.1.3.

### **DAX®** ex Financials 30 Index

The DAX® ex Financials 30 Index tracks the companies in the Regulated Market which do not

MDAX includes the 50 companies which follow DAX companies in terms of market capitalization or that are not eligible for DAX inclusion because they don't fulfil its profitability requirements and that fulfil minimum quality requirements.

#### **SDAX**

SDAX includes the 70 companies which follow after MDAX companies in terms of market capitalization and that fulfil minimum quality requirements.

#### **TecDAX**

The TecDAX Index includes the 30 largest companies in terms of market capitalization that fulfil minimum quality requirements and that are classified as one of the Technology industries according to the DAX Industry Classification in section 4.9.

Universe: Prime All Share and General All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

#### **Base value and dates:**

- DAX: 1000 on December 30, 1987
- MDAX: 1000 on December 30, 1987
- SDAX: 1000 on December 30, 1987
- TecDAX: 1000 on December 30, 1997

### **7.4 HDAX**

### 7.4.1 OVERVIEW

Together, the 40 companies from DAX Index, the 50 companies from MDAX Index and the 30 companies from TecDAX index form HDAX's index portfolio. Hereby, companies that are included in both TecDAX and DAX or MDAX are considered only once. As a result, this index includes the large and medium-sized companies in the Regulated Market without any sector restriction.

**Universe:** DAX, MDAX and TecDAX

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.



belong to the FIRE super sector (Finance, Insurance and Real Estate) and that fulfil certain minimum quality requirements. It always has 30 companies. These are selected according to market capitalization. The detailed admission criteria are given in section 4.1.4.

#### DAX® 50 ESG

The DAX® 50 ESG tracks the performance of the 50 largest stocks listed on the regulated market of Frankfurt Stock Exchange that have comparatively good performance based on their Environmental, Social and Governance scores. Further, the stocks must have passed standardized ESG screens related to Global Compact Principles, ESG controversies and ESG risk rating as well as the involvement in controversial weapons, tobacco production, thermal coal, nuclear power and military contracting, small arms, unconventional oil & gas.

The base universe of the index is the HDAX. The detailed criteria for constituents' selection are given in section 4.1.5

Base value and dates: 500 on December 30, 1987.

Dissemination calendar: Xetra calendar

### 7.5 DAX EX FINANCIALS OVERVIEW

DAX ex Financials tracks the DAX constituents which are not part of the FIRE super sector. It thus includes a variable number of companies which tends to be lower than 40.

**Universe:** DAX

Weighting Scheme: Same as DAX

**Capping:** As a derived index, capping is not newly defined but adopted from the parameters of DAX. For that reason, the weighting cap factors of DAX are used unchanged for the DAX ex Financials Index.

Base value and dates: 1000 on December 02, 2002.

**Dissemination calendar:** Xetra calendar

### 7.6 DAX EX FINANCIALS 30 OVERVIEW

The DAX ex Financials 30 Index tracks the companies in the Regulated Market which do not belong to the FIRE super sector (Finance, Insurance and Real Estate) and that fulfil certain minimum quality requirements. It always has 30 companies. These are selected according to market capitalization.

**Universe:** All securities included in Prime All Share and General All Share that are eligible for inclusion in the DAX selection list.

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

Base value and dates: 1000 on December 30, 2003.

Dissemination calendar: Xetra calendar

7.7 SCALE 30 OVERVIEW



The Scale 30 Index selects the most liquid stocks from the Scale segment. It covers the 30 most liquid stocks by 12-months Order Book Volume that are traded on Xetra. Stocks that are traded on Börse Frankfurt only are not eligible. Similar to the methodology of the DAX family, trading values from Börse Frankfurt as well as Xetra are considered. The Scale 30 Index offers a liquid alternative for qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

Universe: Scale All Share

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

Base value and dates: 1000 on March 17, 2017.

**Dissemination calendar:** Xetra calendar

### 8.1 DAX 50 ESG OVERVIEW

The DAX 50 ESG tracks the performance of the 50 largest stocks listed on the regulated market of Frankfurt Stock Exchange that have comparatively good performance based on their Environmental, Social and Governance scores. Further, the stocks must have passed standardized ESG screens related to Global Compact Principles and ESG Risk Rating, as well as the involvement in controversial weapons, tobacco production, thermal coal, nuclear power, military contracting, Small Arms and Unconventional Oil & Gas.

**Universe:** HDAX

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 7% on a quarterly basis.

**Base value and dates:** 1000 on September 24, 2012.

Dissemination calendar: Xetra calendar

3.2 All Share Indices 6.1 Deutsche Börse Segment Indices



#### **Prime All Share**

Each of the companies listed on FWB® Frankfurt Stock Exchange can decide whether to apply to be listed in General, Prime or Scale Segment. Inclusion in Prime Standard results in higher post-admission obligations regarding transparency. With Prime All Share, STOXX Ltd. administers an index that measures the overall performance of all the companies in this segment.

#### **Technology All Share**

All Prime Standard companies below the DAX® Index assigned to technological sectors are summarised in the Technology All Share Index. The restriction to companies below DAX is there to prevent DAX® companies from dominating. The Technology All Share Index has continued NEMAX® All Share's historical index data since the latter's discontinuation.

#### Classic All Share®

All Prime Standard companies below the DAX® Index assigned to traditional sectors are summarised in the Classic All Share® Index. The restriction to companies below DAX® is there to prevent DAX® companies from dominating.

#### CDAX

The CDAX® Index includes all German companies in the Prime Standard and General Standard segments. CDAX therefore measures the performance of the entire German stock market and is ideal for analysis purposes.

#### **General All Share**

Similar to Prime All Share, the General All Share Index includes all companies listed in the General Standard segment and outlines the performance of this segment.

### **Scale All Share Index**

The Scale All Share Index includes all companies in the Scale segment. It therefore describes the overall performance of all companies in the Scale segment. The Scale All Share is geared primarily towards qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

#### Overview

#### **Prime All Share**

Each of the companies listed on FWB Frankfurt Stock Exchange can decide whether to apply to be listed in General, Prime or Scale Segment. Inclusion in Prime Standard results in higher post-admission obligations regarding transparency. With Prime All Share, STOXX Ltd. administers an index that measures the overall performance of all stocks in this segment.

#### **General All Share**

Similar to Prime All Share, the General All Share Index includes all stocks listed in the General Standard segment and outlines the performance of this segment.

#### **Scale All Share**

The Scale All Share Index includes all stocks in the Scale segment. It therefore describes the overall performance of all stocks in the Scale segment. The Scale All Share is geared primarily towards qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

**Universe:** All securities in the DAX investable universe

**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

#### Base value and dates:

- Prime All Share: 1000 March 18, 2016
- General All Share: 1000 on March 21, 2003
- Scale All Share: 1000 on February 28, 2017<del>-</del>

Dissemination calendar: Xetra calendar

#### **INDEX REVIEW**

**Component selection:** Prime All Share, General All Share and Scale All Share consist of all securities listed in the Prime Standard, General Standard and Scale segment of FWB Frankfurt Stock Exchange, respectively.



**Review frequency:** The indices are rebalanced on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a company changes its trading segment, it will be removed from the Deutsche Börse Segment index it is currently included in at close of the last trading day in the respective segment, provided that 2 trading days' notice can be given.

**Ad-hoc Entry:** A new share class included in the Prime Standard, General Standard or Scale segments of FWB Frankfurt Stock Exchange is included in the corresponding Deutsche Börse Segment Index. A distinction is made between two cases:

- a. A share class is listed on FWB Frankfurt Stock Exchange for the first time. In this case, the company will be included in the index one day after its first trading day, provided that 2 trading days' notice can be given.
- b. A share class comes from another segment of FWB Frankfurt Stock Exchange. The share class is included in the index on the day of the first quotation in the new segment, provided that 2 trading days' notice can be given.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective segment index.

# 6.2 CDAX OVERVIEW

The CDAX Index includes all German companies in the Prime Standard and General Standard segments. CDAX therefore measures the performance of the entire German stock market and is ideal for analysis purposes.

Universe: Prime All Share + General All Share

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Not applicable

**Base value and dates:** 100 on December 30, 1987.



**Dissemination calendar:** Xetra calendar

#### **INDEX REVIEW**

**Component selection:** The index consists of the components of the Prime All Share and General All Share indices that are domiciled in Germany.

**Review frequency:** The index is rebalanced on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a company changes its domicile and no longer qualifies for CDAX, it is deleted from CDAX as soon as the change becomes Effective, provided that 2 trading days' notice can be given.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share or General All Share is added to CDAX as well.

If a company changes its domicile and becomes eligible, it is added to CDAX as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the CDAX index.

# 6.3 DAX INDUSTRY INDICES OVERVIEW

### **Technology All Share**

All Prime Standard companies assigned to technological sectors that are not part of the DAX Index are summarised in the Technology All Share Index. The restriction to exclude DAX companies is to prevent DAX companies from dominating.

### **Classic All Share**

All Prime Standard companies assigned to traditional sectors that are not part of the DAX Index are summarised in the Classic All Share Index. The restriction to exclude DAX companies is to prevent DAX companies from dominating.

**Universe:** Prime All Share



**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

### Base value and dates:

- Technology All Share: 1000 on December 30, 1997
- Classic All Share: 1000 on March 21, 2003

Dissemination calendar: Xetra calendar

#### **INDEX REVIEW**

**Component selection:** Technology All Share and Classic All Share consist of the components of Prime All Share that are not part of the DAX with industry classification Technology and Classic, respectively.

**Review frequency:** The indices are rebalanced on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a stock changes its industry classification or is included in DAX, it is deleted from the DAX Industry index it is currently included in as soon as the change becomes Effective.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share is added to the respective DAX Industry index as well.

If a stock changes its industry classification or is deleted from DAX, it is added to the respective DAX Industry index as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective DAX Industry index.

#### 3.3 Sector Indices

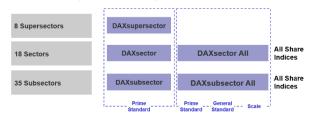
STOXX Ltd. calculates sector indices for the Prime Standard segment as well as for a larger representative portfolio comprising all companies listed in Prime Standard, General Standard and Scale segment.

# 6.4 DAX SECTOR INDICES OVERVIEW

All Prime Standard companies are summarized in the DAX Sector indices according to their sector affiliation. DAX Sector indices are calculated as DAXsupersector, DAXsector and DAXsubsector



For both the Prime segment as well as the larger portfolio, 18 sector indices and 35 subsector indices are provided. In addition, eight super sector indices are calculated for the Prime segment. Sector and subsector indices are designed as All Share indices, whereas only companies with an ADTV4 of at least €1 million qualify for the super sector indices. The various Prime sectors have been based on the historical index data of the CDAX® sector indices since April 1999. In the appendix a table shows the different super sectors, sectors and subsectors (section 11.3). The classification of companies into the respective traditional or technology sectors is done on the basis of the subsectors (section 11.3).



indices, which contain all companies assigned to the respective super sector, sector or subsector according to the DAX Equity Industry classification.

**Universe:** Prime All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

#### Base value and dates:

- DAXsupersector indices: 100 on March 21, 2003
- DAXsector indices: 100 on December 31, 1987
- DAXsubsector: 100 on March 21, 2003

Dissemination calendar: Xetra calendar

#### **INDEX REVIEW**

**Component selection:** DAX Sector indices consist of the components of Prime All Share that belong to the corresponding super sector (DAXsupersector), sector (DAXsector) or subsector (DAXsubsector) according to the DAX Industry Classification as described in section 4.9.

**Review frequency:** The indices are rebalanced on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a stock changes its DAX Industry Classification (sector, super sector, subsector), it is deleted from the respective DAX Sector Index (DAXsector, DAXsupersector, DAXsubsector) it is currently included in as soon as the change becomes Effective.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share is added to the respective DAX Sector index as well.

If a stock changes its DAX Industry Classification (sector, super sector, subsector) due to an annual review or extraordinary changes of the DAX Industry Classification as described in section 4.9, it is added



to the respective DAX Sector Index (DAXsector, DAXsupersector, DAXsubsector) as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective DAX Sector index.

### 6.5 DAX SECTOR ALL INDICES OVERVIEW

All Prime Standard, General Standard and Scale companies are summarized in the DAX Sector All indices according to their sector affiliation. DAX Sector All indices are calculated as DAX Sector All and DAX subsector All indices, which contain all companies assigned to the respective sector or subsector according to the DAX Equity Industry classification.

**Universe:** Prime All Share, General All Share and Scale All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

#### **Base value and dates:**

DAXsector All: 100 on March 20, 2008
DAXsubsector All: 100 on March 20, 2008

**Dissemination calendar:** Xetra calendar

#### **INDEX REVIEW**

**Component selection:** DAX Sector All indices consist of the components of Prime All Share, General All Share and Scale All Share that belong to the corresponding sector (DAXsector All) or subsector (DAXsubsector All) according to the DAX Industry Classification as described in section 4.9.

**Review frequency:** The indices are rebalanced on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a stock changes its DAX Industry Classification (sector, subsector), it is deleted from the respective DAX Sector All Index (DAXsector All,



DAXsubsector All) it is currently included in as soon as the change becomes Effective.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share, General All Share or Scale All Share is added to the respective DAX Sector All index as well.

If a stock changes its DAX Industry Classification (sector, subsector) due to an annual review or extraordinary changes of the DAX Industry Classification as described in section 4.9, it is added to the respective DAX Sector All Index (DAXsector All, DAXsubsector All) as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective DAX Sector All index.

#### 4.1 Selection Indices

The Selection Indices represent the largest companies on the Regulated Market of Frankfurt Stock Exchange. These are selected according to Free Float Market Capitalization. The indices are DAX®, MDAX®, SDAX®, TecDAX®, HDAX®, Scale 30 Index, DAX® ex Financials Index and DAX® ex Financials 30 Index.

The DAX 50 ESG represents the largest companies that have comparatively good performance based on their Environmental, Social and Governance criteria. These are selected according to market capitalization and Sustainalytics' ESG score.

# 7.1 DAX, MDAX, SDAX, TecDAX 7.1.1 OVERVIEW

### DAX

The DAX Index includes the 40 largest companies in terms of market capitalization on the Regulated Market of FWB Frankfurt Stock Exchange that fulfil certain minimum quality and profitability requirements. In contrast to the other selection indices MDAX, SDAX and TecDAX, companies in DAX index must fulfil a profitability requirement in the two most recent fiscal years to be eligible for inclusion into DAX Index.

The DAX price index has continued the Börsen-Zeitung index, which historically extends back to 1959, since its introduction.

### **MDAX**

MDAX includes the 50 companies which follow DAX companies in terms of market capitalization or that are not eligible for DAX inclusion because they don't fulfil its profitability requirements and that fulfil minimum quality requirements.

#### **SDAX**

SDAX includes the 70 companies which follow after MDAX companies in terms of market capitalization and that fulfil minimum quality requirements.

#### **TecDAX**



The TecDAX Index includes the 30 largest companies in terms of market capitalization that fulfil minimum quality requirements and <u>that</u> are classified as <u>one of the Technology industries</u> according to the DAX Industry Classification in section 4.9.

Universe: Prime All Share and General All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

#### Base value and dates:

• DAX: 1000 on December 30, 1987

• MDAX: 1000 on December 30, 1987

SDAX: 1000 on December 30, 1987

• TecDAX: 1000 on December 30, 1997

### 7.4 HDAX 7.4.1 OVERVIEW

Together, the 40 companies from DAX Index, the 50 companies from MDAX Index and the 30 companies from TecDAX index form HDAX's index portfolio. Hereby, companies that are included in both TecDAX and DAX or MDAX are considered only once. As a result, this index includes the large and medium-sized companies in the Regulated Market without any sector restriction.

Universe: DAX, MDAX and TecDAX

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

**Base value and dates:** 500 on December 30, 1987.

**Dissemination calendar:** Xetra calendar

#### 7.4.2 INDEX REVIEW

**Component selection:** All companies included in DAX, MDAX and TecDAX form the index portfolio of HDAX.

**Review frequency:** The index is rebalanced on a quarterly basis.

#### 7.4.3 ONGOING MAINTENANCE



**Replacements:** All changes affecting the DAX, MDAX

and TecDAX also apply for the

HDAX.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

Spin-offs: All changes affecting the DAX, MDAX and

TecDAX also apply for the

HDAX.

### 7.5 DAX EX FINANCIALS OVERVIEW

DAX ex Financials tracks the DAX constituents which are not part of the FIRE super sector. It thus includes a variable number of companies which tends to be lower than 40.

Universe: DAX

Weighting Scheme: Same as DAX

**Capping:** As a derived index, capping is not newly defined but adopted from the parameters of DAX. For that reason, the weighting cap factors of DAX are used unchanged for the DAX ex Financials Index.

Base value and dates: 1000 on December 02, 2002.

**Dissemination calendar:** Xetra calendar

**INDEX REVIEW** 

**Component selection:** DAX ex Financials Index corresponds to the composition of the DAX Index excluding the FIRE super sector (Finance, Insurance or Real Estate). The DAX Index rules are crucial for inclusion in the index.

After determination of the composition of the DAX Index, companies in the FIRE super sector according to the DAX Industry Classification (cf. 4.9) are excluded. In addition, those companies that are classified under "section K" (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank as provided by WM Datenservice of WM Gruppe will be excluded from the provision of ranks.

**Review frequency:** The composition of the index is reviewed on a quarterly basis.

**ONGOING MAINTENANCE** 



**Replacements:** All composition changes to DAX are applied to DAX ex Financials as soon as they become Effective in DAX. In case a component is deleted from the index due to a change of the sector classification, the deleted component is not replaced.

**Ad-hoc Exit:** In case of changes to the sector affiliation of a company that are leading to the affiliation of a company with "section K", the affected company is removed from the index. STOXX Ltd. communicates this decision and removes the relevant company, usually two full trading days after the announcement (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide)

Ad-hoc Entry: Not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.

# 7.6 DAX EX FINANCIALS 30 OVERVIEW

The DAX ex Financials 30 Index tracks the companies in the Regulated Market which do not belong to the FIRE super sector (Finance, Insurance and Real Estate) and that fulfil certain minimum quality requirements. It always has 30 companies. These are selected according to market capitalization.

**Universe:** All securities included in Prime All Share and General All Share that are eligible for inclusion in the DAX selection list.

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

**Base value and dates:** 1000 on December 30, 2003.

**Dissemination calendar:** Xetra calendar

#### **INDEX REVIEW**

**Selection list:** The DAX ex Financials 30 Index is based on the DAX Index selection list and shows the blue chips permitted in the Regulated Market which are not classified as Finance, Insurance or Real Estate (FIRE). It therefore includes the 30 largest companies listed in the regulated market of FWB Frankfurt Stock



Exchange, that do not belong to the FIRE super sector.

The DAX ex Financials 30 Index selection list is taken as a basis for the index review. It is created in the same way as the DAX selection list, except for the profitability criterion which does not apply; the basic criteria listed in section 4.1.1.1 apply; companies that belong to the FIRE super sector according to the DAX Industry Classification (cf. section 4.9) are excluded. In addition, companies classified under "section K" (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank as provided by WM Datenservice of WM Gruppe will be excluded from the provision of ranks.

The selection list is updated and published on a monthly basis.

**Component selection:** The component selection at index review is conducted as described for DAX, MDAX, SDAX and TecDAX in chapter 6.1.2, applying the ranks as provided in the table below.

DAX ex Financials 30	Candidate rank FF MCap	Alternate <u>candidate</u> rank FF <u>MCap</u>	Ma r	Ju n	Se p	De c
Fast Exit	45	35	X	Х	Х	Х
Fast Entry	25	35	X	Х	Х	Х
Regular Exit	40	35	X		Х	
Regular Entry	30	35	X		Х	

**Review frequency:** The composition of the index is reviewed on a quarterly basis.

### **ONGOING MAINTENANCE**

**Replacements:** Deleted stocks are replaced by the highest ranked stock on the most recent selection list that is not included in the index.

**Ad-hoc Exit:** In case of changes to the sector affiliation of a company that are leading to the affiliation of a company with "section K", the affected company is removed from the index. STOXX Ltd. communicates this decision and removes the relevant company, usually two full trading days after the announcement (Discretionary Rule, see section 8.1.2. of DAX Equity Calculation Guide).

A company that is in breach with the basic criteria is removed from the index as described in chapter 4.10.2, usually with two trading days' notice.

Ad-hoc Entry: not applicable



**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.

# 7.7 SCALE 30 OVERVIEW

The Scale 30 Index selects the most liquid stocks from the Scale segment. It covers the 30 most liquid stocks by 12-months Order Book Volume that are traded on Xetra. Stocks that are traded on Börse Frankfurt only are not eligible. Similar to the methodology of the DAX family, trading values from Börse Frankfurt as well as Xetra are considered. The Scale 30 Index offers a liquid alternative for qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

**Universe:** Scale All Share

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

Base value and dates: 1000 on March 17, 2017.

**Dissemination calendar:** Xetra calendar

### **INDEX REVIEW**

**Selection list:** The selection list is updated and published on a monthly basis on the 4<sup>th</sup> trading day of the month. To create the selection list, all securities included in the Scale All Share index are ranked according to their liquidity as measured by Order Book Volume on Xetra and Börse Frankfurt (in the preceding twelve months). Companies that have been listed for fewer than 30 trading days on the Regulated Market or Scale segment or are not listed on Xetra do not receive a rank.

The following applies to Order Book Volume:

The Order Book Volume is the sum of the daily turnover of a class over a period of 12 months.

The following special provisions apply:

• If the Order Book Volumes of a company are not available for the whole twelve-month period due to the time of its commencement of trading or its initial



listing on one of the transparency standards, the Order Book Volumes of the first 20 trading days are ignored, and the remainder of the relevant data is linearly extrapolated to twelve months. This procedure, however, is only applicable to companies which have been traded for at least 30 days as per the reporting date, taking Order Book Volumes of at least ten days into account for extrapolation purposes.

• If a company has changed its trading segment (Quotation Board, Scale, General Standard and Prime Standard), the order book volume from the previous segment is taken into account as of the selection list cut-off date following the segment change if it has a total trading history of more than 30 days.

**Component selection:** The 30 highest ranking companies are selected for the index.

**Review frequency:** The index composition of Scale 30 is reviewed on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted components are replaced by the highest ranked stock on the most recent selection list that is not included in the index.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.

### 8.1 DAX 50 ESG OVERVIEW

The DAX 50 ESG tracks the performance of the 50 largest stocks listed on the regulated market of Frankfurt Stock Exchange that have comparatively good performance based on their Environmental, Social and Governance scores. Further, the stocks must have passed standardized ESG screens related to Global Compact Principles and ESG Risk Rating, as well as the involvement in controversial weapons, tobacco production, thermal coal, nuclear power, military contracting, Small Arms and Unconventional Oil & Gas.



**Universe:** HDAX

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 7% on a quarterly basis.

**Base value and dates:** 1000 on September 24, 2012.

**Dissemination calendar:** Xetra calendar

#### **INDEX REVIEW**

**Selection list:** The DAX 50 ESG Index selection list will be created for the eligible securities and published on the 4<sup>th</sup> trading day each month by STOXX Ltd. In order to determine the eligible universe, ESG exclusion criteria are applied. In case of missing Product Involvement data for a company, the company is not eligible.

#### **ESG Exclusion Criteria**

The ESG exclusion criteria for excluding companies from the eligible universe are:

- Global Standards Screening: STOXX will exclude companies that are noncompliant based on the Sustainalytics Global Standards Screening assessment. Global Standards Screening identifies companies that violate or are at risk of violating commonly accepted international norms and standards, enshrined in the United Nations Global Compact (UNGC) Principles, the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights (UNGPs), and their underlying conventions.
- **Controversial Weapons:** STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons. The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons, and white phosphorus weapons.

The criteria for involvement are:



- Internal production or sale of controversial weapons
- The ultimate holding company owns >10% of voting rights of an involved company
- >10% of voting rights of a company is owned by the involved company
- **Tobacco:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >0% revenues from
     manufacturing tobacco products
     >5% revenues from supplying
     tobacco-related products/services
     >5% revenues from the
     distribution and/or retail sale of
- Thermal Coal: STOXX will exclude companies that Sustainalytics identifies to

tobacco products

have:

- >5% revenues from thermal coal extraction (including thermal coal mining and exploration)
- >5% power generation capacity: coal-fired electricity, heat, or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants)
- **Unconventional Oil & Gas:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >5% revenues Oil & Gas exploration & extraction in Arctic regions
  - >5% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day
  - >5% revenues from shale energy exploration and/or production
- **Nuclear Power:** STOXX will exclude companies that Sustainalytics identifies as having:



- >5% revenues from nuclear power production:
  - Utilities that own/operate nuclear power generators
  - Note: in this category
     Sustainalytics tracks the percentage of a company's generating capacity
     that is based on nuclear power
- >5% revenues from nuclear power supporting products / services, including:
  - Design and construction of nuclear power plants
  - Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls
  - Special services, such as the transport of nuclear power materials, and nuclear plant maintenance
  - Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate
- >5% revenues from nuclear power distribution, including:
  - The resale or distribution of electricity generated from nuclear power
  - This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix
  - Note: In this category
     Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power
- **Small Arms:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >0% revenues from manufacturing and selling assault weapons to civilian customers
  - >0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers



- >0% revenues from manufacturing and selling key components of small arms
- >5% revenues from retail and/or distribution of assault weapons
- >5% revenues from retail and/or distribution of small arms (non-assault weapons)
- >5% revenues from manufacturing and selling small arms to military / law enforcement customers
- **Military Contracting:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >5% revenues from manufacturing military weapons systems and/or integral, tailor made components of these weapons
  - >5% revenues from tailor made products and/or services that support military weapons
- **Controversy Ratings: STOXX will** exclude companies that Sustainalytics identifies to have a Controversy Rating of Category 5 (Severe). Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. Controversy involvement is one key measure of ESG performance. A controversy is defined as an event or aggregation of events relating to an ESG topic. An event is assessed on its severity on a scale of 1 to 5 (1- Low, 2- Moderate, 3-Significant, 4- High, 5- Severe). The highest Event rating under a controversy indicator, automatically becomes the Controversy Rating for a given company.
- **ESG Risk Ratings:** STOXX will exclude companies that Sustainalytics identifies to have a "Severe" ESG Risk Rating. The ESG Risk Rating evaluates the degree of a company's unmanaged material ESG risk by assessing a company's exposure to, and management of, the ESG issues that are considered most material for that company from a financial perspective. Sustainalytics assess and categorizes companies into five risk



categories (Negligible, Low, Medium, High, Severe).

#### **Selection List Creation**

To create the selection list, the parameters relevant for the allocation of rank – Free Float Market Capitalization and ESG scores – are recorded and the basic criteria are checked on the recording date (last trading day of the month).

The following applies to Free Float Market Capitalization:

A volume-weighted average price over 20-trading days (20-trading day VWAP) is used to calculate the Free Float Market Capitalization. This is calculated for each share class as the average value of daily volume-weighted average prices based on Xetra prices (VWAP) of the last 20 trading days. The 20-trading day adjusted VWAP on the last trading day of a month is used to create the selection list.

The following applies to ESG score:

- In case of a missing ESG score for a company, an ESG score of zero is assigned to it
- In case of missing Product Involvement data for a company, the company is not eligible
- Companies with the same ESG score will have the same rank

**Component selection:** The index composition of DAX 50 ESG Index is reviewed quarterly based on the Fast Exit and Fast Entry rules and semi-annually in March and September based on the Regular Exit and Regular Entry rules.

The table "Overview of rules" shows when and how the rules detailed below apply.

DAX 50 ESG	Candidate rank FF MCap <sup>14</sup> / ESG	Alternate candidate rank FF MCap/ ESG	Mar	Ju n	Se P	De c
Fast Exit	75/75	60/60; 60/65; 60/70	Х	Х	Х	Х
Fast Entry	40/40	60/60	X	Х	Х	Х
Regular Exit	70/70	60/60	X		Х	
Regular Entry	50/50	60/60	×		×	

The selection of companies in the DAX 50 ESG is based on the quantitative criteria of Free Float Market Capitalization and ESG Score. The currently valid selection list for DAX 50 ESG always forms the basis for the application of the rules outlined below. The four rules are applied successively.



- 5. **Fast Exit:** A company in the selection index is replaced if it has a lesser rank than the 'candidate rank' in one of the two criteria of Free Float Market Capitalization or ESG score (see the "Overview of rules" table; for example, greater than 75 in the Free Float Market Capitalization criterion or greater than 75 in ESG criterion in the DAX 50 ESG ranks). It is replaced by the company with the highest Free Float Market Capitalization that has the corresponding ranking positions for both criteria in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 60 in the DAX 50 ESG ranks). If there are no companies that meet these conditions, the successor is determined by relaxing the ESG score criterion twice gradually, each time by five ranks (e.g., 60/65, then 60/70 in the DAX 50 ESG ranks). If there is still no company that meets the criteria, the company with an ESG rank of equal to or less than 60 which has the highest free float market capitalization is determined as the successor.
- 6. **Fast Entry:** A company is included in the selection index if it has the same or better rank than the 'candidate rank' in the two criteria: Free Float Market Capitalization and ESG (e.g., smaller than or equal to rank 40 for the Free Float Market Capitalization criterion, smaller than or equal to rank 40 in ESG criterion in the DAX 50 ESG ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' in one of the criteria is excluded (e.g., greater than 60 in one of the three criteria in the DAX 50 ESG ranks). If there are no companies in the selection index that meet these criteria, the company with the lowest Free Float Market Capitalization is removed from the selection index.
- 7. **Regular Exit:** A company in the selection index will be replaced if it has a worse rank than the 'candidate rank' in one of the two criteria of Free Float



Market Capitalization or ESG (for example, greater than 70 in the Free Float Market Capitalization criterion or greater than 70 in the ESG criterion in the DAX 50 ESG ranks). It will be replaced by the company with the highest Free Float Market Capitalization that has the corresponding ranking positions for the two criteria in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 60 in the DAX 50 ESG ranks). Notwithstanding the previous sentences, if no successor can be determined, no change takes place.

8. **Regular Entry:** A company will be included in the selection index if it has the same or better rank than the 'candidate rank' in the two criteria: Free Float Market Capitalization and ESG score criteria (e.g., smaller than or equal to rank 50 for the Free Float Market Capitalization criterion and smaller than or equal to rank 50 in the order ESG criterion in the DAX 50 ESG ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' in one of the two criteria will be excluded (e.g., greater than 60 in one of the two criteria in the DAX 50 ESG ranks).

Notwithstanding the previous sentences, if no alternate candidate can be determined, no exchange takes place.

Decisions regarding changes to the composition of the DAX 50 ESG index are published after 10 p.m. CET on the fourth trading day in March, June, September, and December at <a href="http://www.stoxx.com">http://www.stoxx.com</a>.

#### Actions in case of shortfalls in the DAX 50 ESG

A shortfall in the number of constituents may occur in the DAX 50 ESG index during the index review. This may occur when a company is no longer part of the HDAX. An example would be a company been deleted from the HDAX in the upcoming review. Remaining in the selection index is, therefore, no longer justified, however this will only take effect in the next regular review. In this case, the company would be removed during the regular review before the application of the four rules above.



Consequently, there would be a shortfall in the selection index.

In this case a review using the Regular Exit rule will be performed for the company which caused the shortfall, and the following process is applied in order to review the eligibility for acceptance of the alternate candidate into the index.

- d. If the company does not contravene the Regular Exit rule, the alternate candidate is directly accepted into the selection index.
- e. If the Regular Exit rule contravenes, the alternate candidate is not accepted directly into the selection index.
- f. If there are no other alternate candidates and a shortfall continues to exist in the selection index, this shortfall in the selection index is treated as a Fast Exit. Consequently, the Fast Exit rule of the selection index with the shortfall is applied. In this case, the company which caused the shortfall is considered the Fast Exit candidate. A company that, in turn, could be accepted into the selection index with the shortfall is found using the Fast Exit rule.

The index is restored to the fixed number of companies before the four rules for the relevant selection index are applied (Fast Exit, Fast Entry, Regular Exit and Regular Entry). The aim of this is to ensure that the relevant selection index contains the designated number of companies before the review of the index is performed.

A surplus in the DAX 50 ESG index is not possible.

**Review frequency:** The index composition of DAX 50 ESG is reviewed on a quarterly basis.

### **ONGOING MAINTENANCE**

**Replacements:** A deleted company is replaced by applying the Fast Exit rule, based on the most recently published DAX 50 ESG selection list.

Ad-hoc Exit: In case a company which is an index constituent increases in its ESG Controversy Rating to Category 5, the respective constituent will be deleted from the DAX 50 ESG. The deletion will take place two



dissemination days after the announcement, i.e., at the open of the 3<sup>rd</sup> dissemination day.

A company that is in breach with the basic criteria is removed from the index as described in section 4.10.2, usually with two trading days' notice.

**Ad-hoc Entry:** not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

#### 4.1.1.1 Basic Criteria

The basic criteria for including companies in DAX®, MDAX®, SDAX® and TecDAX are:

- An existing listing on the Regulated Market of the FWB® Frankfurt Stock Exchange
- Continuous trading on Xetra®
- Minimum Free Float of 10%
- Legal headquarters or operating headquarters in Germany
- Legal headquarters in EU/EFTA or operating headquarter in Germany sufficient for foreign companies.
- Publication of audited Annual Financial Report prepared according to the requirements of WpHG. The publication shall be completed within 90 days from the end of the reporting period, in accordance with recommendation F.2 of the German Corporate Governance Code, but an additional grace period is given that allows the publication up until 4 months after the end of the reporting period. In order to fulfil the obligation of "publication of the audited Annual Financial Report" both the Annual Financial Report and the complete audit certificate have to be published. The Annual Financial Report must be provided in either German or English.
- Publication of half-yearly Financial Report
   (for the first six months of the fiscal year)
   prepared according to the requirements of
   WpHG. The publication shall be completed
   within 45 days from the end of the
   reporting period, in accordance with
   recommendation F.2 of the German
   Corporate Governance Code, but an
   additional grace period is given that allows
   the publication until 3 months after the end
   of the reporting period. The half-yearly
   Financial Report must be provided in either
   German or English. With regard to a

# 5.4 Basic Criteria 5.4.1 Basic Criteria Definition

For some indices, a set of basic criteria has to be fulfilled for a stock to be eligible. The basic criteria are defined as follows:

- An existing listing on the Regulated Market of the FWB Frankfurt Stock Exchange
- Continuous trading on Xetra
- Minimum Free Float of 10%
- Legal headquarters in EU/EFTA or operating headquarter in Germany sufficient for foreign companies.
- Publication<sup>3</sup> of audited Annual Financial Report prepared according to the requirements of WpHG<sup>4</sup> <sup>5</sup>. The publication shall be completed within 90 days from the end of the reporting period, in accordance with recommendation F.2 of the German Corporate Governance Code, but an additional grace period is given that allows the publication up until 4 months after the end of the reporting period. In order to fulfil the obligation of "publication of the audited Annual Financial Report" both the Annual Financial Report and the complete audit certificate have to be published. The Annual Financial Report must be provided in either German or English.
- Publication of half-yearly Financial Report (for the first six months of the fiscal year) prepared according to the requirements of WpHG<sup>6</sup>. The publication shall be completed within 45 days from the end of the reporting period, in accordance with recommendation F.2 of the German Corporate Governance Code<sup>7</sup>, but an additional grace period is given that allows the publication until 3 months after the end of the reporting period. The half-yearly Financial Report must be provided



- company that is newly listed on the Regulated Market of FWB, the company must fulfil the requirement for the reporting period that ends immediately after its listing. The Criterion is deemed met for the reporting periods ending prior to the company's listing.
- Publication of the Quarterly Statement or Quarterly Financial Report for the first and third fiscal quarters. In terms of content, period coverage and format, the Quarterly Statement or Quarterly Financial Report must fulfil the follow-up obligations of the Regulated Market for Prime Standard, irrespective of the segment of Regulated Market which the issuer is member of. The publication shall be completed within 45 days from the end of the reporting period, but an additional grace period is given that allows the publication until 75 days after the end of the reporting period. Quarterly Statement and Quarterly Financial Reports must be provided in either German or English. With reference to a Ranking List cut-off date, the Criterion is also deemed met provided that the company's Board of Directors and the Management Board have published on its website a statement of intent that states the company will publish Quarterly Statements or Quarterly Financial Reports for all preparation or reporting periods, respectively, ending after that cutoff date. A company that fails to adhere to its statement of intents is deemed to be in breach of the Criterion.
- No deviations are declared with respect to recommendations C.10 (with sole reference to its applicability to the Chair of the Audit Committee 12), D.8 and D.9 of the German Corporate Governance Code. The criterion is assessed based on the Declaration of Conformity published for the calendar year in course or, if the publication deadline of the Declaration of Conformity is yet to come, for the previous year. If no such Declaration of Conformity is publicly available, or if it declares deviations from the above recommendations, the criterion is considered breached. Companies that are newly listed on the Regulated Market of FWB and have not issued the mandatory annual Declaration of Conformity at the time of listing, are deemed to meet the

- in either German or English. With regard to a stock that is newly listed on the Regulated Market of FWB, the issuing company must fulfil the requirement for the reporting period that ends immediately after its listing. The Criterion is deemed met for the reporting periods ending prior to the stock's listing.
- Publication of the Quarterly Statement or Quarterly Financial Report for the first and third fiscal quarters. In terms of content, period coverage and format, the Quarterly Statement or Quarterly Financial Report must fulfil the follow-up obligations of the Regulated Market<sup>8</sup> for Prime Standard, irrespective of the segment of Regulated Market which the issuer is member of. The publication shall be completed within 45 days from the end of the reporting period, but an additional grace period is given that allows the publication until 75 days after the end of the reporting period. Quarterly Statement and Quarterly Financial Reports must be provided in either German or English. With reference to a Selection List cut-off date, the Criterion is also deemed met provided that the company's Board of Directors and the Management Board have published on its website a statement of intent that states the company will publish Quarterly Statements or Quarterly Financial Reports for all preparation or reporting periods, respectively, ending after that cut-off date. A company that fails to adhere to its statement of intents is deemed to be in breach of the Criterion.
- No deviations are declared with respect to recommendations C.10 (with sole reference to its applicability to the Chair of the Audit Committee<sup>9</sup>), D.8 and D.9 of the German Corporate Governance Code<sup>10</sup>. The criterion is assessed based on the Declaration of Conformity published for the calendar year in course or, if the publication deadline of the Declaration of Conformity is yet to come, for the previous year. If no such Declaration of Conformity is publicly available, or if it declares deviations from the above recommendations, the criterion is considered breached.
- Companies that are newly listed on the Regulated Market of FWB and have not issued the mandatory annual Declaration of Conformity at the time of listing, are deemed



criterion provided that the company's executive board (Vorstand) and supervisory board (Aufsichtsrat) have published on its website a statement that confirms the company does not deviate from the above recommendations. The statement is considered valid until the first compulsory annual Declaration of Conformity is published.

A foreign company that is not required to publish a Declaration of Conformity with the German Corporate Governance Code is deemed to meet the criterion provided that it has published on its website a statement that confirms the company does not deviate from the above recommendations, as applicable accordingly to their legal form and jurisdiction. STOXX makes available under <a href="https://www.DAX-indices.com/ressourcen">https://www.DAX-indices.com/ressourcen</a> the template that foreign companies shall use for the purpose of drawing such statement. Such statement must be published annually.

- Minimum Liquidity on FWB®:
  - o Initial eligibility: in order to be ranked, a company that is not an index component at the Ranking List cut-off date must have a minimum Order Book Volume over the last 12-months of 1 bn EUR or show a Turnover Rate of 20% as described in 2.6. Companies that do not fulfil this criterion will not receive a rank.
  - o Continued eligibility: for continued eligibility, a company that is an index component at the Ranking List cut-off date must have a minimum Order Book Volume over the last 12-months of at least 0.8 bn EUR or show a Turnover Rate of 10% as described in 2.6 in order to remain in the index. Companies that do not fulfil this criterion will not receive a rank any longer, until they fulfil the initial eligibility requirement again.

to meet the criterion provided that the company's executive board (Vorstand) and supervisory board (Aufsichtsrat) have published on its website a statement that confirms the company does not deviate from the above recommendations. The statement is considered valid until the first compulsory annual Declaration of Conformity is published.

A foreign company that is not required to publish a Declaration of Conformity with the German Corporate Governance Code is deemed to meet the criterion provided that it has published on its website a statement that confirms the company does not deviate from the above recommendations, as applicable accordingly to their legal form and jurisdiction. STOXX makes available under <a href="https://www.stoxx.com/rulebooks">https://www.stoxx.com/rulebooks</a> the template that foreign companies shall use for the purpose of drawing such statement. Such statement must be published annually.

- Minimum Liquidity on FWB:
  - o <u>Initial eligibility:</u> in order to be ranked, a stock that is not an index component at the review cut-off date must have a minimum Order Book Volume over the last 12-months of 1 bn EUR or show a Turnover Rate of 20% as described in section 4.5.1. Stocks that do not fulfil this criterion will not receive a rank.
  - o Continued eligibility: for continued eligibility, a stock that is an index component at the review cutoff date must have a minimum Order Book Volume over the last 12-months of at least 0.8 bn EUR or show a Turnover Rate of 10% as described in section 4.5.1 in order to remain in the index. Stocks that do not fulfil this criterion will not receive a rank any longer, until they fulfil the initial eligibility requirement again.

### 4.1.1.2 Equity Index Rankings

The selection of companies in the DAX®, MDAX®, SDAX® and TecDAX® indices is based on Free Float Market Capitalization. The reporting date for collecting data (the Ranking List cut-off date) is the

### 7.1.2. Index Review - Selection List

**Selection List:** The Selection List is created and published by STOXX on a monthly basis. The reporting date for collecting data (the Selection List



last trading day of the month for which the ranking list is created. The ranking list is created and published monthly by STOXX Ltd.

### **Creating the Ranking List**

To create the ranking list, the parameters relevant for the allocation of a rank, i.e., number of shares, Free Float factor and VWAP, are recorded at the Ranking List cut-off date to determine the Free Float Market Capitalization for each company. At that date, also the compliance with the basic criteria is assessed. In addition, the EBITDA is collected to determine eligibility for DAX Index. The following applies to Free Float market capitalization:

A volume-weighted average price over 20-trading days (20-trading day VWAP) is used to calculate the Free Float Market Capitalization. This is calculated for each share class as the average value of daily volume-weighted average prices based on Xetra® prices (VWAP) of the last 20 trading days. The 20-trading day VWAP on the last trading day of a month is used to create the ranking list.

The following applies to the Order Book Volume: The Order Book Volume is the sum of the daily turnover of a class over a period of 12 months. The following special provisions apply:

If the Order Book Volumes of a company are not available for the whole twelve-month period due to the time of its commencement of trading or its initial listing on one of the transparency standards, the Order Book Volumes of the first 20 trading days are ignored, and the remainder of the relevant data is linearly extrapolated to twelve months. This procedure, however, is only applicable to companies which have been traded for at least 30 days as per the reporting date, taking Order Book Volumes of at least ten days into account for extrapolation purposes.

If a company has changed its trading segment (Open Market, Scale, General Standard and Prime Standard), the order book volume from the previous segment is taken into account as of the ranking list cut-off date following the segment change if it has a total trading history of more than 30 days.

The following provisions apply exclusively for DAX® Index:

In order to be considered eligible for the DAX® Index, companies that are not components of DAX® at the time the ranking list is compiled must fulfil an additional requirement with regards to their profitability:

cut-off date) is the last trading day of the month for which the Selection List is created. There are two different Selection Lists, one for DAX, MDAX, SDAX and one for TecDAX, each with ranks starting at 1.

To create the Selection List, the parameters relevant for the allocation of a rank, i.e., number of shares, free float factor and VWAP, are recorded at the selection list cut-off date to determine the free float market capitalization for each company. At that date, also the compliance with the basic criteria is assessed. In addition, the EBITDA is collected to determine eligibility for DAX Index.

The following applies to free float market capitalization:

An adjusted volume-weighted average price over 20-trading days (20-trading day adjusted VWAP) is used to calculate the free float market capitalization. This is calculated for each share class as the average value of daily volume-weighted average prices based on Xetra prices (VWAP) of the last 20 trading days and adjusted for corporate actions as described in section 5.11. The 20-trading day adjusted VWAP on the last trading day of a month is used to create the selection list.

The following applies to the Order Book Volume:

The Order Book Volume is the sum of the daily turnover of a share class over a period of 12 months.

The following special provisions apply:

- » If the Order Book Volumes of a company are not available for the whole twelve-month period due to the time of its commencement of trading or its initial listing on one of the transparency standards, the Order Book Volumes of the first 20 trading days are ignored, and the remainder of the relevant data is linearly extrapolated to twelve months. This procedure, however, is only applicable to companies which have been traded for at least 30 days as per the reporting date, taking Order Book Volumes of at least ten days into account for extrapolation purposes.
- » If a company has changed its trading segment (Scale, General Standard and Prime Standard), the Order Book Volume from the previous segment is taken into account as of



Positive EBITDA14 for the two most recent fiscal years as calculated by Refinitiv.

In case the shares of a newly listed company result from conversion of the shares tendered for exchange of two or more companies that cease to exist (i.e., Merger of companies), the Order Book Volumes of the companies are aggregated, provided that they were listed on the FWB® Frankfurt Stock Exchange, in one of the transparency standards, prior to the merger. A requirement for aggregating Order Book Volumes is that the companies that no longer exist are delisted from active trading status on any stock exchange. The Order Book Volumes are aggregated retroactively at this point.

### **Inclusion in the Ranking List**

There are two different Ranking Lists, one for DAX®, MDAX®, SDAX® and one for TecDAX®, each with ranks starting at 1.

All of the share classes listed on Regulated Market of FWB® Frankfurt Stock Exchange are listed on the ranking list for DAX®, MDAX®, SDAX®. A ranking is given to the share classes that meet the basic criteria according to section 4.1.1.1. Companies that are first listed at FWB® Frankfurt Stock Exchange have additionally to be listed for a minimum of at least 30 trading days. Classes that do not meet the criteria given in section 4.1.1.1 are listed on the ranking list but do not receive a rank. Each ISIN under which shares in a company are traded is considered a separate class in this regard. If a company has several share classes, only the largest and most liquid share class is given a ranking, as measured by a combined metric of Market Capitalization and Order Book Volume. If the share classes are evaluated equally based on the metric created above, the most liquid one gets a rank.

If subscription rights issued as part of a capital increase are of value on the date of creating the ranking list, the market capitalization shown on the ranking list will be determined in consideration of the capital increase. In this case, an acceptance ratio of 100% is assumed. If the share capital at the end of the subscription period differs from this, the market capitalization will be adjusted accordingly.

the selection list cut-off date following the segment change if it has a total trading history of more than 30 days.

The following provisions apply exclusively for the DAX Index:

In order to be considered eligible for the DAX Index, companies, that are not components of DAX at the time the selection list is compiled, must fulfil an additional requirement with regards to their profitability:

» Positive EBITDA<sup>2</sup> for the two most recent fiscal years as calculated by Refinitiv.

#### Inclusion in the Selection List

All of the share classes listed on the Regulated Market segment of FSE are listed on the selection list for DAX, MDAX, SDAX. A ranking is given to the share classes that meet the basic criteria according to section 5.4. Companies that are first listed at FSE have additionally to be listed for a minimum of at least 30 trading days on the Regulated Market or Scale Segment. Share classes that do not meet the criteria given in section 5.4 are listed on the Selection List but do not receive a rank. Each ISIN under which shares in a company are traded is considered a separate class in this regard. If a company has several share classes, only the largest share class by free float market capitalization is given a ranking.

If subscription rights issued as part of a capital increase are of value on the date of creating the selection list, the market capitalization shown on the selection list will be determined in consideration of the capital increase. In this case, an acceptance ratio of 100% is assumed. If the number of shares at the end of the subscription period differs from this, the market capitalization will be adjusted accordingly.

The selection list for TecDAX exclusively contains companies that are defined as Technology according to the DAX Industry Classification (cf. section 5.3). It is created in the same way as described above for DAX, MDAX and SDAX.

### **Exclusion from Ranking**

<sup>&</sup>lt;sup>2</sup> Field Code: 18198; Field Name: Earnings Before Interest, Tax and Depreciation (EBITDA).



The ranking list for TecDAX® exclusively contains companies that are defined within chapter 11.3 as "Tech". It is created in the same way as described above for DAX®, MDAX® and SDAX®.

### **Exclusion from Ranking**

Companies that do not meet the necessary liquidity criteria for initial or continued eligibility are not ranked.

Companies for which there is a publicly available decision for revocation of admission by the Frankfurt Stock Exchange pursuant to the Stock Exchange Rules are not ranked.

To ensure that the composition of the indices reflects the market and/or economic reality which the indices aim to represent and to avoid that the application of the stated rules leads, in certain unforeseeable circumstances, to misrepresenting results, STOXX Ltd. reserves the right to exclude certain companies from being ranked on the ranking list (Discretionary Rule, see Section 1.3). An appropriate reason for such an exclusion may be, for example, the fact that it is a foreign company with the holding's headquarters in Germany but the focus of its business activity abroad (Discretionary Rule, see Section 1.3).

# 4.1.1.3 DAX, MDAX, SDAX, TecDAX: Application of the selection criteria

The index composition of DAX®, MDAX®, SDAX® and TecDAX® is reviewed quarterly based on the Fast Exit and Fast Entry rules and semi-annually based on the Regular Exit and Regular Entry rules.

The purpose of the review on the basis of the Fast Exit and Fast Entry rules is to account for significant changes in rankings. These changes may occur when companies no longer possess the required size (Free Float Market capitalization) which may arise due to large issues (e.g., major changes in the Free Float or a steep price drop) and should be taken into consideration promptly in the index.

The "Overview of rules" table shows when and how the rules detailed below apply.

### **Overview of rules**

- 1) Companies that do not meet the necessary liquidity criteria for initial or continued eligibility are not ranked.
- Companies for which there is a publicly available decision for revocation of admission by the FSE pursuant to the Stock Exchange Rules are not ranked.
- 3) Companies that are subject to an insolvency event as described in the DAX Equity Index Calculation Guide are not ranked.

To ensure that the composition of the indices reflects the market and/or economic reality which the indices aim to represent and to avoid that the application of the stated rules leads, in certain unforeseeable circumstances, to misrepresenting results, STOXX reserves the right to exclude certain companies from being ranked on the Selection List (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). An appropriate reason for such an exclusion may be, for example, the fact that it is a foreign company with the holding's headquarters in Germany but the focus of its business activity abroad (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide).

### 7.1.2. Index Review - Component Selection

**Component selection:** The index composition of DAX, MDAX, SDAX and TecDAX is reviewed quarterly based on the Fast Exit and Fast Entry rules and semi-annually based on the Regular Exit and Regular Entry rules.

The purpose of the review on the basis of the Fast Exit and Fast Entry rules is to account for significant changes in rankings. These changes may occur when companies no longer possess the required size (free float market capitalization) which may arise due to large issues (e.g., major changes in the free float or a steep price drop) and should be taken into consideration promptly in the index.

The "Overview of Rules" table shows when and how the rules detailed below apply.

Overview of Rules



<u>DAX®</u>	Candidate rank FF MCap16	Alternate <u>candidate</u> rank FF <u>MCap</u>	Mar	Jun	Sep	Dec
Fast Exit	60	47	X	Х	Х	Х
Fast Entry	33	47	X	Х	Х	Х
Regular Exit	53	47	Х		Х	
Regular Entry	40	47	Х		Х	
MDAX®	Candidate rank FF MCap	Alternate candidate rank FF MCap	Mar	Jun	Sep	Dec
Fast Exit	110	97	Х	Х	Х	Х
Fast Entry	83	97	Х	Х	Х	Х
Regular Exit	103	97	Х		Х	
Regular Entry	90	97	X		Х	
SDAX®	Candidate rank FF MCap	Alternate candidate rank FF MCap	Mar	Jun	Sep	Dec
Fast Exit	180	167	Х	Х	Х	Х
Fast Entry	153	167	X	Х	Х	X
Regular Exit	173	167	Х		Х	
Regular Entry	160	167	X		Х	
TecDAX®	Candidate rank FF MCap	Alternate candidate rank FF MCap	Mar	Jun	Sep	De
Fast Exit	45	35	Х	Х	Х	Х
Fast Entry	25	35	Х	Х	X	Х
Regular Exit	40	35	Х		X	
Regular Entry	30	35	Х		Х	

The selection of companies in the DAX®, MDAX®, SDAX® and TecDAX® indices is based on Free Float Market Capitalization. The currently valid ranking list always forms the basis for the application of the rules outlined below. The four rules are applied successively.

For selection to the DAX, not only must the free float market capitalization ranking of the company to be included or replaced meet the thresholds described in this section, but it must also meet the EBITDA criterion as outlined in 4.1.1.2. If a company would be eligible for inclusion in the DAX based on its free float market capitalization ranking, but does not meet the EBITDA criterion, the next ranked company in the ranking list that is meeting the EBITDA criterion will be considered for inclusion.

1. **Fast Exit:** A company in the selection index is replaced if it has a lesser rank than the 'candidate rank' in Free Float Market Capitalization (see the "Overview of rules" table; for example, greater than 60 in the Free Float Market Capitalization criterion in the DAX® ranks). It is replaced by the company with the highest Free Float Market Capitalization that has the corresponding ranking positions for the Free Float Market Capitalization in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 47 in the DAX® ranks). If there are no

<u>DAX®</u>	Candidate rank FF MCap16	Alternate <u>candidate</u> rank FF <u>MCap</u>	Mar	Jun	Sep	Dec
Fast Exit	60	47	X	Х	Х	Х
Fast Entry	33	47	Х	Х	Х	Х
Regular Exit	53	47	Х		Х	
Regular Entry	40	47	Х		Х	
MDAX®	Candidate rank FF MCap	Alternate candidate rank FF MCap	Mar	Jun	Sep	Dec
Fast Exit	110	97	X	Х	Х	Х
Fast Entry	83	97	X	Х	Х	Х
Regular Exit	103	97	X		Х	
Regular Entry	90	97	Х		Х	
SDAX®	Candidate rank FF MCap	Alternate candidate rank FF MCap	Mar	Jun	Sep	Dec
Fast Exit	180	167	Х	Х	Х	Х
Fast Entry	153	167	X	X	Х	Х
Regular Exit	173	167	Х		Х	
Regular Entry	160	167	Х		Х	
TecDAX®	Candidate rank FF MCap	Alternate candidate rank FF MCap	Mar	Jun	Sep	Dec
Fast Exit	45	35	Х	Х	Х	Х
Fast Entry	25	35	X	Х	Х	Х
Regular Exit	40	35	X		Х	
Regular Entry	30	35	X		Х	

The selection of companies in the DAX, MDAX, SDAX and TecDAX indices is based on free float market capitalization. The currently valid selection list always forms the basis for the application of the rules outlined below. The four rules are applied successively.

For selection to the DAX, the company to be included or replaced must meet the EBITDA criterion as outlined above in addition to the free float market capitalization candidate rank according to the thresholds described in this section. If a company would be eligible for inclusion in the DAX Index based on its free float market capitalization ranking, but does not meet the EBITDA criterion, the next ranked company in the selection list that is meeting the EBITDA criterion will be considered for inclusion.

1) Fast Exit: A company in the selection index is replaced if it has a lower rank than the 'candidate rank' in free float market capitalization (see the "Overview of rules" table; for example, greater than 60 in the free float market capitalization criterion in the DAX ranks). It is replaced by the company with the highest free float market capitalization that has the corresponding ranking positions for the free float market capitalization in the 'alternate candidate rank' stated in the "Overview of Rules" table for the respective selection index (e.g., smaller than



companies that meet these conditions, the company with the highest market cap rank is determined as successor.

- 2. **Fast Entry:** A company is included in the selection index if it has the same or better rank than the 'candidate rank' in the Free Float Market Capitalization (e.g., smaller than or equal to rank 33 for the Free Float Market Capitalization criterion in the DAX® ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' is excluded (e.g., greater than 47 in the DAX® ranks). If there are no companies in the selection index that meet these criteria, the company with the lowest Free Float Market Capitalization is removed from the selection index.
- 3. Regular Exit: A company in the selection index will be replaced if it has a worse rank than the 'candidate rank' in Free Float Market Capitalization (for example, greater than 53 in the Free Float Market Capitalization in the DAX® ranks). It will be replaced by the company with the highest Free Float Market Capitalization that has the corresponding ranking positions for in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 47 in the DAX® ranks). Notwithstanding the previous sentences, if no successor can be determined, no change takes place.
- 4. **Regular Entry:** A company will be included in the selection index if it has the same or better rank than the 'candidate rank' in the Free Float Market Capitalization (e.g., smaller than or equal to rank 40 for the Free Float Market Capitalization in the DAX® ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' will be excluded (e.g., greater than 47 in the DAX® ranks). Notwithstanding the previous sentences, if no alternate candidate can be determined, no exchange takes place.

In exceptional cases, for example takeovers announced at short notice or significant changes in

- or equal to 47 in the DAX ranks). If there are no companies that meet these conditions, the company with the highest market cap rank is determined as successor.
- 2) Fast Entry: A company is included in the selection index if it has the same or better rank than the 'candidate rank' in the free float market capitalization (e.g., smaller than or equal to rank 33 for the free float market capitalization criterion in the DAX ranks). The company with the lowest free float market capitalization that is ranked worse than the 'alternate candidate rank' is excluded (e.g., greater than 47 in the DAX ranks). If there are no companies in the selection index that meet these criteria, the company with the lowest free float market capitalization is removed from the selection index.
- 3) Regular Exit: A company in the selection index will be replaced if it has a worse rank than the 'candidate rank' in free float market capitalization (for example, greater than 53 in the free float market capitalization in the DAX ranks). It will be replaced by the company with the highest free float market capitalization that has the corresponding ranking positions for in the 'alternate candidate rank' stated in the "Overview of Rules" table for the respective selection index (e.g., smaller than or equal to 47 in the DAX ranks). Notwithstanding the previous sentences, if no successor can be determined, no change takes place.
- 4) Regular Entry: A company will be included in the selection index if it has the same or better rank than the 'candidate rank' in the free float market capitalization (e.g., smaller than or equal to rank 40 for the free float market capitalization in the DAX ranks). The company with the lowest free float market capitalization that is ranked worse than the 'alternate candidate rank' will be excluded (e.g., greater than 47 in the DAX ranks). Notwithstanding the previous sentences, if no alternate candidate can be determined, no exchange takes place.

In exceptional cases, for example takeovers announced at short notice or significant changes in the free float, STOXX may deviate from rules 1–4



the free float, STOXX Ltd. may deviate from rules 1–4 mentioned above (Discretionary Rule, see Section 1.3).

Decisions regarding changes to the composition of the selection index are published after 10 p.m. CET on the third trading day in March, June, September, and December in a press release and online at <a href="http://www.DAX-indices.com">http://www.DAX-indices.com</a>.

# Actions in case of shortfalls or surpluses in the Selection Indices

A shortfall in the number of constituents may occur in the selection index during the index review. This may occur when a company no longer meets the basic criteria (see 4.1.1.1). An example would be a company publicly announcing the discontinuation of the Prime Standard listing. Remaining in the selection index is, therefore, no longer justified, however this will only take effect in the next regular review. In this case, the company would be removed during the regular review before the application of the four rules above. Consequently, there would be a shortfall in the selection index. If a shortfall occurs during the regular review before the four rules of the selection indices are applied, it is assessed whether a relegation candidate from a superior index exists (e.g., a shortfall may occur in the SDAX® due to an exit from MDAX®, where the company is not added to SDAX but left without index membership, and the simultaneous promotion of an SDAX® company to MDAX). In this case, a review using the Regular Exit rule for the respective selection index will be performed for the exit candidate, reviewing the eligibility for acceptance into the subordinate selection index.

- a. If the company does not contravene the Regular Exit rule, the relegation candidate is directly accepted into the selection index in which the shortfall occurred.
- b. If the Regular Exit rule contravenes, the relegation candidate is not accepted directly into the selection index with the shortfall.
- c. If there are no other relegation candidates and a shortfall continues to exist in the selection index, this shortfall in the selection index is treated as a Fast Exit. Consequently, the Fast Exit rule of the respective selection index with the shortfall is applied. In this case, the company which caused the shortfall is considered the Fast Exit candidate. A company that, in turn,

mentioned above (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide).

Decisions regarding changes to the composition of the selection index are published after 10 p.m. CET on the third trading day in March, June, September, and December in a press release and online at <a href="Index Updates - STOXX">Index Updates - STOXX (stoxx.com)</a>.

## Actions in case of shortfalls or surpluses in the Selection Indices

A shortfall in the number of constituents may occur in the selection index during the index review. This may occur when a company no longer meets the basic criteria (see section 5.4). An example would be a company publicly announcing the discontinuation of its Prime Standard listing. Remaining in the selection index is, therefore, no longer justified, however this will only take effect in the next regular review. In this case, the company would be removed during the regular review before the application of the four rules above. Consequently, there would be a shortfall in the selection index.

If a shortfall occurs during the regular review before the four rules of the selection indices are applied, it is assessed whether a relegation candidate from a superior index exists (e.g., a shortfall may occur in the SDAX due to an exit from MDAX, where the company is not added to SDAX but left without index membership, and the simultaneous promotion of an SDAX company to MDAX). In this case, a review using the Regular Exit rule for the respective selection index will be performed for the exit candidate, reviewing the eligibility for acceptance into the subordinate selection index.

- a) If the company does not contravene the Regular Exit rule, the relegation candidate is directly accepted into the selection index in which the shortfall occurred.
- b) If the Regular Exit rule contravenes, the relegation candidate is not accepted directly into the selection index with the shortfall.
- c) If there are no other relegation candidates and a shortfall continues to exist in the selection index, this shortfall in the selection index is treated as a Fast Exit. Consequently, the Fast Exit rule of the respective selection index with the shortfall is applied. In this case, the company which caused the shortfall is considered the Fast Exit candidate. A



could be accepted into the selection index with the shortfall is found using the Fast Exit rule.

There is still the possibility for a constituents' surplus in the selection index. This may occur in case a company that so far had not been included in a selection index as it failed to meet the basis criteria (see 4.1.1.1) qualifies for the new index composition and replaces a company. An example of this would be if a company has only recently been listed (IPO). If two companies are exchanged and the example above or a similar situation applies, this may lead to a surplus in the subordinate selection index. If, for example, a recently listed company qualifies directly for the MDAX®, the replaced company could be included into the SDAX® and cause a surplus there. If a company changes from a selection index into a subordinate selection index without a security from the subordinated selection index being promoted at the same time, this may lead to a surplus of companies (e.g., a recently listed company is promoted to the MDAX® following the regular review. At first the composition of the MDAX® is finalised. As soon as the review of the MDAX® is complete, the review of the exchanged candidate for acceptance into the SDAX® is carried out using the Regular Exit rule). In this case, a check using the Regular Exit rule for the respective selection index is performed for the exit candidate, reviewing the eligibility for acceptance into the subordinated selection index.

- a. If the company does not contravene the Regular Exit rule, the relegation candidate is directly accepted into the subordinated selection index.
- b. If the company contravenes the Regular Exit rule, the relegation candidate is not accepted directly into the subordinated selection index.
- c. If there are no other relegation candidates and there is still a surplus in the selection index, this surplus is treated as a Fast Entry. Consequently, the Fast Entry rule of the respective selection index is applied. In this case, the company that caused the surplus is considered as the Fast Entry candidate. A company that, in turn, could be removed from the selection index with the surplus is found using the Fast Entry rule.

The selection index is restored to the fixed number of companies before the four rules for the relevant

company that, in turn, could be accepted into the selection index with the shortfall is found using the Fast Exit rule.

There is still the possibility for a constituents' surplus in the selection index. This may occur in case a company that so far had not been included in a selection index as it failed to meet the basic criteria (see section 5.4) qualifies for the new index composition and replaces a company. An example of this would be if a company has only recently been listed (IPO). If two companies are exchanged and the example above or a similar situation applies, this may lead to a surplus in the subordinate selection index. If, for example, a recently listed company qualifies directly for the MDAX, the replaced company could be included into the SDAX and cause a surplus there.

If a stock changes from a selection index into a subordinate selection index without a stock from the subordinated selection index being promoted at the same time, this may lead to a surplus of companies (e.g., a recently listed company is promoted to the MDAX following the regular review. At first the composition of the MDAX is finalized. As soon as the review of the MDAX is complete, the review of the exchanged candidate for acceptance into the SDAX is carried out using the Regular Exit rule). In this case, a check using the Regular Exit rule for the respective selection index is performed for the exit candidate, reviewing the eligibility for acceptance into the subordinated selection index.

- a) If the company does not contravene the Regular Exit rule, the relegation candidate is directly accepted into the subordinated selection index.
- b) If the company contravenes the Regular Exit rule, the relegation candidate is not accepted directly into the subordinated selection index.
- c) If there are no other relegation candidates and there is still a surplus in the selection index, this surplus is treated as a Fast Entry. Consequently, the Fast Entry rule of the respective selection index is applied. In this case, the company that caused the surplus is considered as the Fast Entry candidate. A company that, in turn, could be removed from the selection index with the surplus is found using the Fast Entry rule.

The selection index is restored to the fixed number of constituents before the four rules for the relevant



selection index are applied (Fast Exit, Fast Entry, Regular Exit and Regular Entry). The aim of this is to ensure that the relevant selection index contains the designated number of companies before the review of the index is performed.

selection index are applied (Fast Exit, Fast Entry, Regular Exit and Regular Entry). The aim of this is to ensure that the relevant selection index contains the designated number of companies before the review of the index is performed.

#### 4.1.2 Scale 30 Index

The companies that are included in the Scale 30 Index must be listed in the Scale segment and trading on Xetra®. If this fundamental prerequisite is met, the 30 most liquid companies by Order Book Volume on Xetra® and Börse Frankfurt (in the preceding twelve months) are selected. To prevent the largest companies from dominating the index, a 10% cap per component is applied. In the case of new inclusions to the index, the companies must have been listed in the Scale segment for at least 30 days (does not apply in case of change in transparency standard).

## 7.7 Scale 30 OVERVIEW

The Scale 30 Index selects the most liquid stocks from the Scale segment. It covers the 30 most liquid stocks by 12-months Order Book Volume that are traded on Xetra. Stocks that are traded on Börse Frankfurt only are not eligible. Similar to the methodology of the DAX family, trading values from Börse Frankfurt as well as Xetra are considered. The Scale 30 Index offers a liquid alternative for qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

Universe: Scale All Share

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

Base value and dates: 1000 on March 17, 2017.

Dissemination calendar: Xetra calendar

#### **INDEX REVIEW**

**Selection list:** The selection list is updated and published on a monthly basis on the 4<sup>th</sup> trading day of the month. To create the selection list, all securities included in the Scale All Share index are ranked according to their liquidity as measured by Order Book Volume on Xetra and Börse Frankfurt (in the preceding twelve months). Companies that have been listed for fewer than 30 trading days on the Regulated Market or Scale segment or are not listed on Xetra do not receive a rank.

The following applies to Order Book Volume:

The Order Book Volume is the sum of the daily turnover of a class over a period of 12 months.

The following special provisions apply:



- If the Order Book Volumes of a company are not available for the whole twelve-month period due to the time of its commencement of trading or its initial listing on one of the transparency standards, the Order Book Volumes of the first 20 trading days are ignored, and the remainder of the relevant data is linearly extrapolated to twelve months. This procedure, however, is only applicable to companies which have been traded for at least 30 days as per the reporting date, taking Order Book Volumes of at least ten days into account for extrapolation purposes.
- If a company has changed its trading segment (Quotation Board, Scale, General Standard and Prime Standard), the order book volume from the previous segment is taken into account as of the selection list cut-off date following the segment change if it has a total trading history of more than 30 days.

**Component selection:** The 30 highest ranking companies are selected for the index.

**Review frequency:** The index composition of Scale 30 is reviewed on a quarterly basis.

### **ONGOING MAINTENANCE**

**Replacements:** Deleted components are replaced by the highest ranked stock on the most recent selection list that is not included in the index.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation

Guide.

### 4.1.3 DAX ex Financials Index

DAX® ex Financials Index corresponds to the composition of the DAX® Index excluding the FIRE super sector (Finance, Insurance or Real Estate). It therefore contains the largest companies from the Regulated Market of FWB® Frankfurt Stock Exchange that do not belong to the FIRE super sector. The DAX® Index rules are crucial for inclusion in the index.

## 7.5 DAX Ex Financials OVERVIEW

DAX ex Financials tracks the DAX constituents which are not part of the FIRE super sector. It thus includes a variable number of companies which tends to be lower than 40.

Universe: DAX

Weighting Scheme: Same as DAX



After determination of the composition of the DAX® Index, companies in the FIRE super sector are excluded. In addition, those companies that are classified under "section K" (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank as provided by WM Datenservice of WM Gruppe will be excluded from the provision of ranks. The composition of the index is reviewed on a quarterly basis, based on the changes to the DAX® Index. Changes to the sector classification that are leading to the affiliation of a company with "section K" are considered a breach of the basic criteria for this index and the affected company is therefore removed from the index. STOXX Ltd. communicates this decision and removes the relevant company, usually two full trading days after the announcement (Discretionary Rule, see Section 1.3).

**Capping:** As a derived index, capping is not newly defined but adopted from the parameters of DAX. For that reason, the weighting cap factors of DAX are used unchanged for the DAX ex Financials Index.

Base value and dates: 1000 on December 02, 2002.

Dissemination calendar: Xetra calendar

#### **INDEX REVIEW**

**Component selection:** DAX ex Financials Index corresponds to the composition of the DAX Index excluding the FIRE super sector (Finance, Insurance or Real Estate). The DAX Index rules are crucial for inclusion in the index.

After determination of the composition of the DAX Index, companies in the FIRE super sector according to the DAX Industry Classification (cf. 4.9) are excluded. In addition, those companies that are classified under "section K" (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank as provided by WM Datenservice of WM Gruppe will be excluded from the provision of ranks.

**Review frequency:** The composition of the index is reviewed on a quarterly basis.

### **ONGOING MAINTENANCE**

**Replacements:** All composition changes to DAX are applied to DAX ex Financials as soon as they become Effective in DAX. In case a component is deleted from the index due to a change of the sector classification, the deleted component is not replaced.

**Ad-hoc Exit:** In case of changes to the sector affiliation of a company that are leading to the affiliation of a company with "section K", the affected company is removed from the index. STOXX Ltd. communicates this decision and removes the relevant company, usually two full trading days after the announcement (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide)

Ad-hoc Entry: Not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.



### 4.1.4 DAX ex Financials 30 Index

The DAX® ex Financials 30 Index is based on the DAX® Index ranking list and shows the blue chips permitted in the Regulated Market which are not classified as Finance, Insurance or Real Estate (FIRE). It therefore includes the 30 largest companies listed in the regulated market of FWB Frankfurt Stock Exchange, that do not belong to the FIRE super sector. The DAX® Index rules are crucial for inclusion in the index.

The DAX® ex Financials 30 Index ranking list is taken as a basis for the ordinary adjustment. It is created in the same way as the DAX® ranking list, except for the profitability criterion which does not apply; the basic criteria listed in section 4.1.1.1 apply; companies that belong to the FIRE super sector are excluded. In addition, companies classified under "section K" (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank as provided by WM Datenservice of WM Gruppe will be excluded from the provision of ranks. The 30 companies are then selected according to section 4.1.1.3, based on the Free Float Market Capitalization. Changes to the sector classification that are leading to the affiliation of a company with "section K" are considered as a breach of the basic criteria for this index and the affected company is therefore removed from the index. For the DAX® ex Financials 30 Index, the replacement is determined based on the Fast Exit rule. STOXX Ltd. communicates this decision and replaces the relevant company, usually two full trading days after the announcement (Discretionary Rule, see Section 1.3).

	Candidate rank FF MCap	Alternate candidate rank FF MCap	Mar	Jun	Sep	Dec
DAX ex Financials 30®						
Fast Exit	45	35	Х	Х	Х	Х
Fast Entry	25	35	X	Х	Х	Х
Regular Exit	40	35	Х		Х	
Regular Entry	30	35	Х		Х	

## 7.6 DAX Ex Financials 30 OVERVIEW

The DAX ex Financials 30 Index tracks the companies in the Regulated Market which do not belong to the FIRE super sector (Finance, Insurance and Real Estate) and that fulfil certain minimum quality requirements. It always has 30 companies. These are selected according to market capitalization.

**Universe:** All securities included in Prime All Share and General All Share that are eligible for inclusion in the DAX selection list.

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

Base value and dates: 1000 on December 30, 2003.

Dissemination calendar: Xetra calendar

### **INDEX REVIEW**

**Selection list:** The DAX ex Financials 30 Index is based on the DAX Index selection list and shows the blue chips permitted in the Regulated Market which are not classified as Finance, Insurance or Real Estate (FIRE). It therefore includes the 30 largest companies listed in the regulated market of FWB Frankfurt Stock Exchange, that do not belong to the FIRE super sector.

The DAX ex Financials 30 Index selection list is taken as a basis for the index review. It is created in the same way as the DAX selection list, except for the profitability criterion which does not apply; the basic criteria listed in section 4.1.1.1 apply; companies that belong to the FIRE super sector according to the DAX Industry Classification (cf. section 4.9) are excluded. In addition, companies classified under "section K" (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank as provided by WM Datenservice of WM Gruppe will be excluded from the provision of ranks.

The selection list is updated and published on a monthly basis.

**Component selection:** The component selection at index review is conducted as described for DAX,



MDAX, SDAX and TecDAX in chapter 6.1.2, applying the ranks as provided in the table below.

DAX ex Financials 30	Candidate rank FF MCap	Alternate <u>candidate</u> rank FF <u>MCap</u>	Ma r	Ju n	Se p	De c
Fast Exit	45	35	X	Х	Х	Х
Fast Entry	25	35	X	Х	Х	Х
Regular Exit	40	35	X		Х	
Regular Entry	30	35	X		Х	

**Review frequency:** The composition of the index is reviewed on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted stocks are replaced by the highest ranked stock on the most recent selection list that is not included in the index.

**Ad-hoc Exit:** In case of changes to the sector affiliation of a company that are leading to the affiliation of a company with "section K", the affected company is removed from the index. STOXX Ltd. communicates this decision and removes the relevant company, usually two full trading days after the announcement (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide).

A company that is in breach with the basic criteria is removed from the index as described in chapter 4.10.2, usually with two trading days' notice.

Ad-hoc Entry: not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.

### 4.1.5 DAX 50 ESG

### **Basic Criteria**

Only companies of the HDAX are eligible for inclusion in the DAX 50 ESG. This means that the basic criteria of section 4.1.1.1 are satisfied.

### **ESG Exclusion Criteria**

The ESG exclusion criteria for excluding companies from the eligible universe are:

### **Global Standards Screening:**

STOXX will exclude companies that are noncompliant based on the Sustainalytics Global Standards Screening assessment. Global Standards Screening identifies companies that violate or are at risk of violating commonly accepted international norms and standards, enshrined in the United Nations Global Compact (UNGC)

### 8.1 DAX 50 ESG OVERVIEW

The DAX 50 ESG tracks the performance of the 50 largest stocks listed on the regulated market of Frankfurt Stock Exchange that have comparatively good performance based on their Environmental, Social and Governance scores. Further, the stocks must have passed standardized ESG screens related to Global Compact Principles and ESG Risk Rating, as well as the involvement in controversial weapons, tobacco production, thermal coal, nuclear power, military contracting, Small Arms and Unconventional Oil & Gas.

Universe: HDAX



Principles, the Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights (UNGPs), and their underlying conventions.

### **Controversial Weapons:**

STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons. The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons, and white phosphorus weapons.

The criteria for involvement are:

- Internal production or sale of controversial weapons
- The ultimate holding company owns >10% of voting rights of an involved company.
- >10% of voting rights of a company is owned by the involved company.

#### **Tobacco:**

STOXX will exclude companies that Sustainalytics identifies to have:

- >0% revenues from manufacturing tobacco products
- >5% revenues from supplying tobacco-related products/services
- >5% revenues from the distribution and/or retail sale of tobacco products

### **Thermal Coal:**

STOXX will exclude companies that Sustainalytics identifies to have:

- >5% revenues from thermal coal extraction (including thermal coal mining and exploration)
- >5% power generation capacity: coal-fired electricity, heat, or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants).

### **Unconventional Oil & Gas:**

### i.Arctic Oil and Gas Exploration:

 >5% revenues Oil & Gas exploration & extraction in Arctic regions.

### ii.Oil Sands:

 >5% revenues from extracting oil sands. This category evaluates oil sands' share of total oil **Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 7% on a quarterly basis.

**Base value and dates:** 1000 on September 24, 2012.

**Dissemination calendar:** Xetra calendar

#### **INDEX REVIEW**

**Selection list:** The DAX 50 ESG Index selection list will be created for the eligible securities and published on the 4<sup>th</sup> trading day each month by STOXX Ltd. In order to determine the eligible universe, ESG exclusion criteria are applied. In case of missing Product Involvement data for a company, the company is not eligible.

#### **ESG Exclusion Criteria**

The ESG exclusion criteria for excluding companies from the eligible universe are:

- Global Standards Screening: STOXX will exclude companies that are non-compliant based on the Sustainalytics Global Standards Screening assessment. Global Standards Screening identifies companies that violate or are at risk of violating commonly accepted international norms and standards, enshrined in the United Nations Global Compact (UNGC) Principles, the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights (UNGPs), and their underlying conventions.
- Controversial Weapons: STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons. The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons, and white phosphorus weapons.

The criteria for involvement are:



and gas average production in barrels of oil equivalent per day.

### iii.Shale Energy:

• >5% revenues from shale energy exploration and/or production.

#### **Nuclear Power:**

STOXX will exclude companies that Sustainalytics identifies as having:

- >5% revenues from nuclear power production:
- Utilities that own/operate nuclear power generators.
- Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power
- >5% revenues from nuclear power supporting products / services, including:
  - Design and construction of nuclear power plants
  - Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls.
  - Special services, such as the transport of nuclear power materials, and nuclear plant maintenance
  - Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate.
- >5% revenues from nuclear power distribution, including:
- The resale or distribution of electricity generated from nuclear power.
- This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix.

Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

**Small Arms:** 

- o Internal production or sale of controversial weapons
- The ultimate holding company owns >10% of voting rights of an involved company.
- >10% of voting rights of a company is owned by the involved company.
- **Tobacco:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >0% revenues from manufacturing tobacco products
     >5% revenues from supplying tobacco-related products/services
     >5% revenues from the distribution and/or retail sale of tobacco products
- **Thermal Coal:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >5% revenues from thermal coal extraction (including thermal coal mining and exploration)
  - >5% power generation capacity: coal-fired electricity, heat, or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants)
- **Unconventional Oil & Gas:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >5% revenues Oil & Gas exploration & extraction in Arctic regions
  - >5% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day.
  - >5% revenues from shale energy exploration and/or production
- **Nuclear Power:** STOXX will exclude companies that Sustainalytics identifies as having:
- >5% revenues from nuclear power production:



- >0% revenues from manufacturing and selling assault weapons to civilian customers.
- >0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers.
- >0% revenues from manufacturing and selling key components of small arms.
- >5% revenues from retail and/or distribution of assault weapons
- >5% revenues from retail and/or distribution of small arms (non-assault weapons)
- >5% revenues from manufacturing and selling small arms to military / law enforcement customers.

### **Military Contracting:**

STOXX will exclude companies that Sustainalytics identifies to have:

- >5% revenues from manufacturing military weapons systems and/or integral, tailor-made components of these weapons
- >5% revenues from tailor made products and/or services that support military weapons.

### **Controversy Ratings:**

STOXX will exclude companies that Sustainalytics identifies to have a Controversy Rating of Category 5 (Severe). Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. Controversy involvement is one key measure of ESG performance. A controversy is defined as an event or aggregation of events relating to an ESG topic. An event is assessed on its severity on a scale of 1 to 5 (1- Low, 2- Moderate, 3- Significant, 4- High, 5- Severe). The highest Event rating under a controversy indicator automatically becomes the Controversy Rating for a given company.

### **ESG Risk Ratings:**

STOXX will exclude companies that Sustainalytics identifies to have a "Severe" ESG Risk Rating. The ESG Risk Rating evaluates the degree of a company's unmanaged material ESG risk by assessing a company's exposure to, and management of, the ESG issues that are considered most material for that company from a financial perspective. Sustainalytics assess and categorizes companies into five risk categories (Negligible, Low, Medium, High, Severe).

**Equity Index Rankings for DAX 50 ESG** 

- Utilities that own/operate nuclear power generators.
- Note: in this category
   Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power
- >5% revenues from nuclear power supporting products / services, including:
  - Design and construction of nuclear power plants
  - Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls.
  - Special services, such as the transport of nuclear power materials, and nuclear plant maintenance
  - Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate.
- >5% revenues from nuclear power distribution, including:
  - The resale or distribution of electricity generated from nuclear power.
  - This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix.
  - Note: In this category
     Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power
- **Small Arms:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >0% revenues from manufacturing and selling assault weapons to civilian customers.
  - >0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers.
  - >0% revenues from manufacturing and selling key components of small arms.



The selection of companies in the DAX® 50 ESG Index is based on the Free Float Market Capitalization17 and ESG performance18. The reporting date for the collection data is the last trading day of the month for which the ranking list is created. The DAX® 50 ESG Index ranking list will be created for the eligible securities and published monthly by STOXX Ltd.

### **Creating the Ranking List**

To create the ranking list, the parameters relevant for the allocation of rank – Free Float Market Capitalization and ESG scores – are recorded and the basis criteria19 are checked on the recording date (last trading day of the month).

The Free Float Market Capitalization is determined in the same way as for the DAX Selection Indices, see 4.1.1.2 for details. The following applies to ESG score:

- In case of a missing ESG score for a company, an ESG score of zero is assigned to it.
- In case of missing Product Involvement data for a company, the company is not eligible.
- Companies with the same ESG score will have the same rank.

## DAX® 50 ESG: Application of the selection criteria

Like DAX Index, the index composition of DAX® 50 ESG Index is reviewed quarterly based on the Fast Exit and Fast Entry rules and semi-annually in March and September based on the Regular Exit and Regular Entry rules.

The "Overview of rules" table shows when and how the rules detailed below apply.

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DAX® 50 ESG	Candidate rank FF MCap20/ ESG	Alternate candidate rank FF MCap/ ESG	Mar	Jun	Sep	Dec
Fast Exit	75/75	60/60; 60/65; 60/70	X	X	Х	Х
Fast Entry	40/40	60/60	Х	Х	Х	Х
Regular Exit	70/70	60/60	Х		Х	
Regular Entry	50/50	60/60	Х		Х	

### **Overview of rules**

The selection of companies in the DAX® 50 ESG is based on the quantitative criteria of Free Float Market Capitalization and ESG Score. The currently valid ranking list for DAX 50 ESG always forms the basis for the application of the rules outlined below. The four rules are applied successively. **Fast Exit:** A company in the selection index is replaced if it has a lesser rank than the 'candidate rank' in one of the two criteria of Free Float Market Capitalization or ESG score (see the "Overview of rules" table; for example, greater than 75 in the

- >5% revenues from retail and/or distribution of assault weapons
- >5% revenues from retail and/or distribution of small arms (non-assault weapons)
- >5% revenues from manufacturing and selling small arms to military / law enforcement customers.
- **Military Contracting:** STOXX will exclude companies that Sustainalytics identifies to have:
  - >5% revenues from manufacturing military weapons systems and/or integral, tailor-made components of these weapons
  - >5% revenues from tailor made products and/or services that support military weapons.
- **Controversy Ratings:** STOXX will exclude companies that Sustainalytics identifies to have a Controversy Rating of Category 5 (Severe). Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. Controversy involvement is one key measure of ESG performance. A controversy is defined as an event or aggregation of events relating to an ESG topic. An event is assessed on its severity on a scale of 1 to 5 (1- Low, 2- Moderate, 3-Significant, 4- High, 5- Severe). The highest Event rating under a controversy indicator, automatically becomes the Controversy Rating for a given company.
- **ESG Risk Ratings:** STOXX will exclude companies that Sustainalytics identifies to have a "Severe" ESG Risk Rating. The ESG Risk Rating evaluates the degree of a company's unmanaged material ESG risk by assessing a company's exposure to, and management of, the ESG issues that are considered most material for that company from a financial perspective. Sustainalytics assess and categorizes companies into five risk categories (Negligible, Low, Medium, High, Severe).

### **Selection List Creation**



Free Float Market Capitalization criterion or greater than 75 in ESG criterion in the DAX® 50 ESG ranks). It is replaced by the company with the highest Free Float Market Capitalization that has the corresponding ranking positions for both criteria in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 60 in the DAX® 50 ESG ranks). If there are no companies that meet these conditions, the successor is determined by relaxing the ESG score criterion twice gradually, each time by five ranks (e.g., 60/65, then 60/70 in the DAX 50 ESG ranks). If there is still no company that meets the criteria, the company with an ESG rank of equal to or less than 60 which has the highest free float market capitalization is determined as the successor.

Fast Entry: A company is included in the selection index if it has the same or better rank than the 'candidate rank' in the two criteria: Free Float Market Capitalization and ESG (e.g., smaller than or equal to rank 40 for the Free Float Market Capitalization criterion, smaller than or equal to rank 40 in ESG criterion in the DAX® 50 ESG ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' in one of the criteria is excluded (e.g., greater than 60 in one of the three criteria in the DAX® 50 ESG ranks). If there are no companies in the selection index that meet these criteria, the company with the lowest Free Float Market Capitalization is removed from the selection index.

Regular Exit: A company in the selection index will be replaced if it has a worse rank than the 'candidate rank' in one of the two criteria of Free Float Market Capitalization or ESG (for example, greater than 70 in the Free Float Market Capitalization criterion or greater than 70 in the ESG criterion in the DAX® 50 ESG ranks). It will be replaced by the company with the highest Free Float Market Capitalization that has the corresponding ranking positions for the two criteria in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 60 in the DAX® 50 ESG ranks). Notwithstanding the previous sentences, if no successor can be determined, no change takes place.

**Regular Entry:** A company will be included in the selection index if it has the same or better rank than the 'candidate rank' in the two criteria: Free Float Market Capitalization and ESG score criteria

To create the selection list, the parameters relevant for the allocation of rank – Free Float Market Capitalization and ESG scores – are recorded and the basic criteria are checked on the recording date (last trading day of the month).

The following applies to Free Float Market Capitalization:

A volume-weighted average price over 20-trading days (20-trading day VWAP) is used to calculate the Free Float Market Capitalization. This is calculated for each share class as the average value of daily volume-weighted average prices based on Xetra prices (VWAP) of the last 20 trading days. The 20-trading day adjusted VWAP on the last trading day of a month is used to create the selection list.

The following applies to ESG score:

- In case of a missing ESG score for a company, an ESG score of zero is assigned to it.
- In case of missing Product Involvement data for a company, the company is not eligible.
- Companies with the same ESG score will have the same rank.

**Component selection:** The index composition of DAX 50 ESG Index is reviewed quarterly based on the Fast Exit and Fast Entry rules and semi-annually in March and September based on the Regular Exit and Regular Entry rules.

The table "Overview of rules" shows when and how the rules detailed below apply.

DAX 50 ESG	Candidate rank FF MCap 14/ ESG	Alternate candidate rank FF MCap/ ESG	Mar	Ju n	Se p	De c
Fast Exit	75/75	60/60; 60/65; 60/70	Х	Х	Х	Х
Fast Entry	40/40	60/60	X	X	X	X
Regular Exit	70/70	60/60	×		Х	
Regular Entry	50/50	60/60	Х		х	

The selection of companies in the DAX 50 ESG is based on the quantitative criteria of Free Float Market Capitalization and ESG Score. The currently valid selection list for DAX 50 ESG always forms the basis for the application of the rules outlined below. The four rules are applied successively.

1) **Fast Exit:** A company in the selection index is replaced if it has a lesser rank than the



(e.g., smaller than or equal to rank 50 for the Free Float Market Capitalization criterion and smaller than or equal to rank 50 in the order ESG criterion in the DAX® 50 ESG ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' in one of the two criteria will be excluded (e.g., greater than 60 in one of the two criteria in the DAX® 50 ESG ranks).

Notwithstanding the previous sentences, if no alternate candidate can be determined, no exchange takes place.

Decisions regarding changes to the composition of the DAX 50 ESG index are published after 10 p.m. CET on the fourth trading day in March, June, September, and December at

http://www.gontigo.com.

### Actions in case of shortfalls in the DAX 50 ESG

A shortfall in the number of constituents may occur in the DAX 50 ESG index during the index review. This may occur when a company is no longer part of the HDAX. An example would be a company been deleted from the HDAX in the upcoming review. Remaining in the selection index is, therefore, no longer justified, however this will only take effect in the next regular review. In this case, the company would be removed during the regular review before the application of the four rules above. Consequently, there would be a shortfall in the selection index.

In this case a review using the Regular Exit rule will be performed for the company which caused the shortfall, and the following process is applied in order to review the eligibility for acceptance of the alternate candidate into the index.

- a. If the company does not contravene the Regular Exit rule, the alternate candidate is directly accepted into the selection index.
- b. If the Regular Exit rule contravenes, the alternate candidate is not accepted directly into the selection index.
- c. If there are no other alternate candidates and a shortfall continues to exist in the selection index, this shortfall in the selection index is treated as a Fast Exit. Consequently, the Fast Exit rule of the selection index with the shortfall is applied. In this case, the company which caused the shortfall is considered the Fast Exit candidate. A company that, in turn, could be accepted into the selection index with

'candidate rank' in one of the two criteria of Free Float Market Capitalization or ESG score (see the "Overview of rules" table; for example, greater than 75 in the Free Float Market Capitalization criterion or greater than 75 in ESG criterion in the DAX 50 ESG ranks). It is replaced by the company with the highest Free Float Market Capitalization that has the corresponding ranking positions for both criteria in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 60 in the DAX 50 ESG ranks). If there are no companies that meet these conditions, the successor is determined by relaxing the ESG score criterion twice gradually, each time by five ranks (e.g., 60/65, then 60/70 in the DAX 50 ESG ranks). If there is still no company that meets the criteria, the company with an ESG rank of equal to or less than 60 which has the highest free float market capitalization is determined as the successor.

- 2) Fast Entry: A company is included in the selection index if it has the same or better rank than the 'candidate rank' in the two criteria: Free Float Market Capitalization and ESG (e.g., smaller than or equal to rank 40 for the Free Float Market Capitalization criterion, smaller than or equal to rank 40 in ESG criterion in the DAX 50 ESG ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' in one of the criteria is excluded (e.g., greater than 60 in one of the three criteria in the DAX 50 ESG ranks). If there are no companies in the selection index that meet these criteria, the company with the lowest Free Float Market Capitalization is removed from the selection index.
- 3) Regular Exit: A company in the selection index will be replaced if it has a worse rank than the 'candidate rank' in one of the two criteria of Free Float Market Capitalization or ESG (for example, greater than 70 in the Free Float Market Capitalization criterion or greater than 70 in the ESG criterion in the DAX 50 ESG ranks). It will be replaced by the company with the highest Free Float Market Capitalization that has the corresponding



the shortfall is found using the Fast Exit rule.

The index is restored to the fixed number of companies before the four rules for the relevant selection index are applied (Fast Exit, Fast Entry, Regular Exit and Regular Entry). The aim of this is to ensure that the relevant selection index contains the designated number of companies before the review of the index is performed.

A surplus in the DAX 50 ESG index is not possible.

- ranking positions for the two criteria in the 'alternate candidate rank' stated in the "Overview of rules" table for the respective selection index (e.g., smaller than or equal to 60 in the DAX 50 ESG ranks). Notwithstanding the previous sentences, if no successor can be determined, no change takes place.
- 4) Regular Entry: A company will be included in the selection index if it has the same or better rank than the 'candidate rank' in the two criteria: Free Float Market Capitalization and ESG score criteria (e.g., smaller than or equal to rank 50 for the Free Float Market Capitalization criterion and smaller than or equal to rank 50 in the order ESG criterion in the DAX 50 ESG ranks). The company with the lowest Free Float Market Capitalization that is ranked worse than the 'alternate candidate rank' in one of the two criteria will be excluded (e.g., greater than 60 in one of the two criteria in the DAX 50 ESG ranks).

Notwithstanding the previous sentences, if no alternate candidate can be determined, no exchange takes place.

Decisions regarding changes to the composition of the DAX 50 ESG index are published after 10 p.m. CET on the fourth trading day in March, June, September, and December at <a href="http://www.stoxx.com">http://www.stoxx.com</a>.

### Actions in case of shortfalls in the DAX 50 ESG

A shortfall in the number of constituents may occur in the DAX 50 ESG index during the index review. This may occur when a company is no longer part of the HDAX. An example would be a company been deleted from the HDAX in the upcoming review. Remaining in the selection index is, therefore, no longer justified, however this will only take effect in the next regular review. In this case, the company would be removed during the regular review before the application of the four rules above. Consequently, there would be a shortfall in the selection index.

In this case a review using the Regular Exit rule will be performed for the company which caused the shortfall, and the following process is applied in order to review the eligibility for acceptance of the alternate candidate into the index.



- g. If the company does not contravene the Regular Exit rule, the alternate candidate is directly accepted into the selection index.
- h. If the Regular Exit rule contravenes, the alternate candidate is not accepted directly into the selection index.
- i. If there are no other alternate candidates and a shortfall continues to exist in the selection index, this shortfall in the selection index is treated as a Fast Exit. Consequently, the Fast Exit rule of the selection index with the shortfall is applied. In this case, the company which caused the shortfall is considered the Fast Exit candidate. A company that, in turn, could be accepted into the selection index with the shortfall is found using the Fast Exit rule.

The index is restored to the fixed number of companies before the four rules for the relevant selection index are applied (Fast Exit, Fast Entry, Regular Exit and Regular Entry). The aim of this is to ensure that the relevant selection index contains the designated number of companies before the review of the index is performed.

A surplus in the DAX 50 ESG index is not possible.

**Review frequency:** The index composition of DAX 50 ESG is reviewed on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** A deleted company is replaced by applying the Fast Exit rule, based on the most recently published DAX 50 ESG selection list.

**Ad-hoc Exit:** In case a company which is an index constituent increases in its ESG Controversy Rating to Category 5, the respective constituent will be deleted from the DAX 50 ESG. The deletion will take place two dissemination days after the announcement, i.e., at the open of the 3<sup>rd</sup> dissemination day.

A company that is in breach with the basic criteria is removed from the index as described in section 4.10.2, usually with two trading days' notice.

Ad-hoc Entry: not applicable



### 4.2 All Share Indices

All Share Indices include all companies listed in the market segment in question. These are Prime All Share, Technology All Share, Classic All Share®, General All Share, Scale All Share and CDAX®.

#### Addition

A new share class included in the Prime Standard, General Standard or Scale segments of FWB® Frankfurt Stock Exchange is included in the corresponding All Share Index. A distinction is made between two cases:

- a. A share class is listed on FWB® Frankfurt Stock Exchange for the first time. In this case, the company will be included on the index on the day after it is first listed.
- b. A share class comes from another segment of FWB® Frankfurt Stock Exchange. The share class is included in the index on the day of the first quotation in the new segment.

#### Deletion

Deletions from the All-Share indices are performed after the close of trading at the company's last listing day in the segment.

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

### 6.1 Deutsche Börse Segment Indices OVERVIEW

### **Prime All Share**

Each of the companies listed on FWB Frankfurt Stock Exchange can decide whether to apply to be listed in General, Prime or Scale Segment. Inclusion in Prime Standard results in higher post-admission obligations regarding transparency. With Prime All Share, STOXX Ltd. administers an index that measures the overall performance of all stocks in this segment.

#### **General All Share**

Similar to Prime All Share, the General All Share Index includes all stocks listed in the General Standard segment and outlines the performance of this segment.

#### **Scale All Share**

The Scale All Share Index includes all stocks in the Scale segment. It therefore describes the overall performance of all stocks in the Scale segment. The Scale All Share is geared primarily towards qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

**Universe:** All securities in the DAX investable universe

**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

### Base value and dates:

- Prime All Share: 1000 March 18, 2016
- General All Share: 1000 on March 21, 2003
- Scale All Share: 1000 on February 28, 2017<del>.</del>

Dissemination calendar: Xetra calendar

**INDEX REVIEW** 



**Component selection:** Prime All Share, General All Share and Scale All Share consist of all securities listed in the Prime Standard, General Standard and Scale segment of FWB Frankfurt Stock Exchange, respectively.

**Review frequency:** The indices are rebalanced on a quarterly basis.

#### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a company changes its trading segment, it will be removed from the Deutsche Börse Segment index it is currently included in at close of the last trading day in the respective segment, provided that 2 trading days' notice can be given.

**Ad-hoc Entry:** A new share class included in the Prime Standard, General Standard or Scale segments of FWB Frankfurt Stock Exchange is included in the corresponding Deutsche Börse Segment Index. A distinction is made between two cases:

- c. A share class is listed on FWB Frankfurt Stock Exchange for the first time. In this case, the company will be included in the index one day after its first trading day, provided that 2 trading days' notice can be given.
- d. A share class comes from another segment of FWB Frankfurt Stock Exchange. The share class is included in the index on the day of the first quotation in the new segment, provided that 2 trading days' notice can be given.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective segment index.

### 6.2 CDAX OVERVIEW

The CDAX Index includes all German companies in the Prime Standard and General Standard segments. CDAX therefore measures the performance of the entire German stock market and is ideal for analysis purposes.

Universe: Prime All Share + General All Share



**Weighting Scheme:** The index is free-float market capitalization weighted.

Capping: Not applicable

**Base value and dates:** 100 on December 30, 1987.

**Dissemination calendar:** Xetra calendar

#### **INDEX REVIEW**

**Component selection:** The index consists of the components of the Prime All Share and General All Share indices that are domiciled in Germany.

**Review frequency:** The index is rebalanced on a quarterly basis.

#### ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a company changes its domicile and no longer qualifies for CDAX, it is deleted from CDAX as soon as the change becomes Effective, provided that 2 trading days' notice can be given.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share or General All Share is added to CDAX as well.

If a company changes its domicile and becomes eligible, it is added to CDAX as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the CDAX index.

### 6.3 DAX INDUSTRY INDICES OVERVIEW

### **Technology All Share**

All Prime Standard companies assigned to technological sectors that are not part of the DAX Index are summarised in the Technology All Share Index. The restriction to exclude DAX companies is to prevent DAX companies from dominating.

#### Classic All Share

All Prime Standard companies assigned to traditional sectors that are not part of the DAX Index are



summarised in the Classic All Share Index. The restriction to exclude DAX companies is to prevent DAX companies from dominating.

**Universe:** Prime All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

### Base value and dates:

- Technology All Share: 1000 on December 30, 1997
- Classic All Share: 1000 on March 21, 2003

**Dissemination calendar:** Xetra calendar

#### **INDEX REVIEW**

**Component selection:** Technology All Share and Classic All Share consist of the components of Prime All Share that are not part of the DAX with industry classification Technology and Classic, respectively.

**Review frequency:** The indices are rebalanced on a quarterly basis.

### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a stock changes its industry classification or is included in DAX, it is deleted from the DAX Industry index it is currently included in as soon as the change becomes Effective.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share is added to the respective DAX Industry index as well.

If a stock changes its industry classification or is deleted from DAX, it is added to the respective DAX Industry index as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective DAX Industry index.

### 4.3.1 DAX Sector Indices

6.4 DAX Sector Indices OVERVIEW



Sector indices include all companies listed in the respective sector. In general, index adjustments take place in sector indices in the event of a sector change due to an annual review or extraordinary changes of the sector classification as described in chapter 2.11.

#### Addition

A new share class included in the Prime Standard of the FWB® Frankfurt Stock Exchange is included in the corresponding DAX Sector Index. A distinction is made between two cases:

- a. A share class is listed on the FWB® Frankfurt Stock Exchange for the first time. In this case, the share class is included in the index on the day after it is first listed.
- b. A share class comes from another segment of the FWB® Frankfurt Stock Exchange. The share class is included in the index on the day of the first quotation in the new segment.

#### **Deletion**

Deletions from the Prime Standard segment will lead to a deletion from the relevant DAX sector Index and are performed after the close of the market on the day on which the company was last listed in the segment.

All Prime Standard companies are summarized in the DAX Sector indices according to their sector affiliation. DAX Sector indices are calculated as DAXsupersector, DAXsector and DAXsubsector indices, which contain all companies assigned to the respective super sector, sector or subsector according to the DAX Equity Industry classification.

**Universe:** Prime All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

#### Base value and dates:

• DAXsupersector indices: 100 on March 21, 2003

• DAXsector indices: 100 on December 31, 1987

• DAXsubsector: 100 on March 21, 2003

**Dissemination calendar:** Xetra calendar

### **INDEX REVIEW**

**Component selection:** DAX Sector indices consist of the components of Prime All Share that belong to the corresponding super sector (DAXsupersector), sector (DAXsector) or subsector (DAXsubsector) according to the DAX Industry Classification as described in section 4.9.

**Review frequency:** The indices are rebalanced on a quarterly basis.

### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

**Ad-hoc Exit:** If a stock changes its DAX Industry Classification (sector, super sector, subsector), it is deleted from the respective DAX Sector Index (DAXsector, DAXsupersector, DAXsubsector) it is currently included in as soon as the change becomes Effective.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share is added to the respective DAX Sector index as well.



If a stock changes its DAX Industry Classification (sector, super sector, subsector) due to an annual review or extraordinary changes of the DAX Industry Classification as described in section 4.9, it is added to the respective DAX Sector Index (DAXsector, DAXsupersector, DAXsubsector) as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective DAX Sector index.

#### 4.3.2 DAX Sector All Share Indices

Sector indices include all companies listed in the respective sector. In general, index adjustments take place in sector indices in the event of a sector change due to an annual review or extraordinary changes of the sector classification as described in chapter 2.11.

#### Addition

A new share class included in the regulated market of the FWB® Frankfurt Stock Exchange is included in the corresponding DAX Sector All Share Index. A distinction is made between two cases:

- c. A share class is listed on the FWB® Frankfurt Stock Exchange for the first time. In this case, the share class is included in the index on the day after it is first listed.
- d. A share class comes from another segment of the FWB® Frankfurt Stock Exchange. The share class is included in the index on the day of the first quotation in the new segment.

#### **Deletion**

A revocation of listing from FWB Frankfurt Stock Exchange of a share class will result in a deletion from the relevant DAX Sector All Share Index and is performed after the close of the market on the day on which the share class was last listed on FWB Frankfurt Stock Exchange.

## 6.5 DAX Sector All Indices OVERVIEW

All Prime Standard, General Standard and Scale companies are summarized in the DAX Sector All indices according to their sector affiliation. DAX Sector All indices are calculated as DAX Sector All and DAX subsector All indices, which contain all companies assigned to the respective sector or subsector according to the DAX Equity Industry classification.

**Universe:** Prime All Share, General All Share and Scale All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

Capping: Not applicable

#### Base value and dates:

- DAXsector All: 100 on March 20, 2008
- DAXsubsector All: 100 on March 20, 2008

Dissemination calendar: Xetra calendar

### **INDEX REVIEW**

**Component selection:** DAX Sector All indices consist of the components of Prime All Share, General All Share and Scale All Share that belong to the corresponding sector (DAXsector All) or subsector (DAXsubsector All) according to the DAX Industry Classification as described in section 4.9.

**Review frequency:** The indices are rebalanced on a quarterly basis.

### **ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.



**Ad-hoc Exit:** If a stock changes its DAX Industry Classification (sector, subsector), it is deleted from the respective DAX Sector All Index (DAXsector All, DAXsubsector All) it is currently included in as soon as the change becomes Effective.

**Ad-hoc Entry:** A qualifying stock added to Prime All Share, General All Share or Scale All Share is added to the respective DAX Sector All index as well.

If a stock changes its DAX Industry Classification (sector, subsector) due to an annual review or extraordinary changes of the DAX Industry Classification as described in section 4.9, it is added to the respective DAX Sector All Index (DAXsector All, DAXsubsector All) as soon as the change becomes Effective.

**Spin-offs:** Spin-offs are added permanently if qualifying for the respective DAX Sector All index.

### **5.1 Selection Indices**

Notwithstanding the rules outlined in section 4.1 on ordinary adjustment, extraordinary changes to the composition must be made if the events described below take place.

A successor is selected based on the currently applicable, i.e., most recently published, ranking list and the rules for an ordinary adjustment in section 4.1.1. The changes in principle take place after the announcement with a notice period of two trading days.

## 7.1 DAX, MDAX, SDAX, TecDAX 7.1.1 Overview

#### DAX

The DAX Index includes the 40 largest companies in terms of market capitalization on the Regulated Market of FWB Frankfurt Stock Exchange that fulfil certain minimum quality and profitability requirements. In contrast to the other selection indices MDAX, SDAX and TecDAX, companies in DAX index must fulfil a profitability requirement in the two most recent fiscal years to be eligible for inclusion into DAX Index.

The DAX price index has continued the Börsen-Zeitung index, which historically extends back to 1959, since its introduction.

### **MDAX**

MDAX includes the 50 companies which follow DAX companies in terms of market capitalization or that are not eligible for DAX inclusion because they don't fulfil its profitability requirements and that fulfil minimum quality requirements.

### **SDAX**



SDAX includes the 70 companies which follow after MDAX companies in terms of market capitalization and that fulfil minimum quality requirements.

### **TecDAX**

The TecDAX Index includes the 30 largest companies in terms of market capitalization that fulfil minimum quality requirements and that are classified as one of the Technology industries according to the DAX Industry Classification in section 4.9.

Universe: Prime All Share and General All Share

**Weighting Scheme:** The indices are free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

#### Base value and dates:

• DAX: 1000 on December 30, 1987

MDAX: 1000 on December 30, 1987

• SDAX: 1000 on December 30, 1987

• TecDAX: 1000 on December 30, 1997

## 7.4 HDAX ONGOING MAINTENANCE

**Replacements:** All changes affecting the DAX, MDAX and TecDAX also apply for the

HDAX.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** All changes affecting the DAX, MDAX and TecDAX also apply for the HDAX.

### 7.5 DAX EX FINANCIALS ONGOING MAINTENANCE

**Replacements:** All composition changes to DAX are applied to DAX ex Financials as soon as they become Effective in DAX. In case a component is deleted from the index due to a change of the sector classification, the deleted component is not replaced.

**Ad-hoc Exit:** In case of changes to the sector affiliation of a company that are leading to the affiliation of a company with "section K", the affected company is removed from the index. STOXX Ltd.



communicates this decision and removes the relevant company, usually two full trading days after the announcement (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide)

**Ad-hoc Entry:** Not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.

## 7.6 DAX EX FINANCIALS 30 ONGOING MAINTENANCE

**Replacements:** Deleted stocks are replaced by the highest ranked stock on the most recent selection list that is not included in the index.

**Ad-hoc Exit:** In case of changes to the sector affiliation of a company that are leading to the affiliation of a company with "section K", the affected company is removed from the index. STOXX Ltd. communicates this decision and removes the relevant company, usually two full trading days after the announcement (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide).

A company that is in breach with the basic criteria is removed from the index as described in chapter 4.10.2, usually with two trading days' notice.

Ad-hoc Entry: not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.

## 7.7 Scale 30 ONGOING MAINTENANCE

**Replacements:** Deleted components are replaced by the highest ranked stock on the most recent selection list that is not included in the index.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity Calculation Guide.

8.1 DAX 50 ESG ONGOING MAINTENANCE



**Replacements:** A deleted company is replaced by applying the Fast Exit rule, based on the most recently published DAX 50 ESG selection list.

**Ad-hoc Exit:** In case a company which is an index constituent increases in its ESG Controversy Rating to Category 5, the respective constituent will be deleted from the DAX 50 ESG. The deletion will take place two dissemination days after the announcement, i.e., at the open of the 3<sup>rd</sup> dissemination day.

A company that is in breach with the basic criteria is removed from the index as described in section 4.10.2, usually with two trading days' notice.

**Ad-hoc Entry:** not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

### 5.1.2 Breach of the basic Criteria

Companies no longer meeting the basic criteria necessary in order to remain in the index as described in Section 4.1.1.1, are removed from the index, where the type of basic criteria the company is breaching determines the timing of the removal. A breach of one of the following basic criteria leads to an exclusion from the index with 2-days' notice from the date that STOXX becomes aware of the breach:

- minimum free float
- listing on Regulated Market of FWB
- continuous trading
- Timely publication of the audited Annual Financial Report
- Timely publication of the half-yearly Financial Report
- Timely publication of the Quarterly Statement or Quarterly Financial Report.

A breach of the timely reporting requirement is given if a company fails to publish after the added grace period:

- the Annual Financial Report within 4 months from the end of the relevant reporting period
- the Half-yearly Financial Report within 3 months from the end of the relevant reporting period
- the Quarterly Statement or Quarterly Financial Report within 75

#### 5.4.2 Breach of Basic Criteria

Companies that are no longer meeting the basic criteria necessary in order to remain in the index are removed from the index, where the type of basic criteria the stock is breaching determines the timing of the removal.

A breach of one of the following basic criteria leads to an exclusion from the index with 2-days' notice from the date that STOXX becomes aware of the breach:

- minimum free float
- listing on Regulated Market of FWB
- continuous trading
- Timely publication of the audited Annual Financial Report
- Timely publication of the half-yearly Financial Report
- Timely publication of the Quarterly Statement or Quarterly Financial Report.

A breach of the timely reporting requirement is given if a company fails to publish after the added grace period:

> the Annual Financial Report within 4 months from the end of the relevant reporting period



days from the end of the relevant reporting period

The withdrawal of the required financial reporting or of their audit, when required, after the aforementioned terms is considered equivalent to a breach of the timely reporting requirement. A company in breach of the required financial reporting criteria will remain on the existing Ranking List until the end of the current month, but it will not be eligible for index membership. If a company succeeds in publishing the required financial reporting after its exclusion from the indices, it can be ranked on the upcoming Ranking List again, provided it fulfils the necessary criteria. For all aforementioned cases of breaches, the standard notice period of 2 trading days will be extended such that the effective date does not conflict with the monthly Ranking List cut-off date (t) and publication dates or the review implementation process. The effective date of an extraordinary index change would be modified as follows:

- On any month: An ad-hoc correction that would be effective after t and before t+6 is postponed being effective on t+6 based on the Ranking List published on t+3.
- On review months only: An ad-hoc correction that would be effective after the Thursday prior to the 2<sup>nd</sup> Friday and before the review effective day is postponed so to become effective on the review effective day.
- Any information received on the review implementation day or the preceding day is processed to be effective on the 2<sup>nd</sup> or the 1<sup>st</sup> trading day after the review effective day.

Compliance with the basic criteria of adherence to the required recommendations of German Corporate Governance Code or minimum liquidity is monitored on a monthly basis as part of the Ranking List creation process. A breach of these criteria will leave the respective company without a rank on the relevant monthly Ranking List and until next index review. The company will then be removed from the index during the index review process.

In all aforementioned cases, for DAX, MDAX, SDAX, TecDAX, DAX ex Financials 30 and DAX 50 ESG the company in breach is replaced by applying the Fast Exit rule. In all other selection indices, the replacement is determined based on the criteria

- the Half-yearly Financial Report within 3 months from the end of the relevant reporting period
- the Quarterly Statement or Quarterly Financial Report within 75 days from the end of the relevant reporting period

The withdrawal of the required financial reporting or of their audit, when required, after the aforementioned terms is considered equivalent to a breach of the timely reporting requirement.

A stock of a company in breach of the required financial reporting criteria will remain on the existing selection list until the end of the current month, but it will not be eligible for index membership.

If a company succeeds in publishing the required financial reporting after its exclusion from the indices, its stock can be ranked on the next selection list again, provided it fulfils the necessary criteria.

For all aforementioned cases of breaches, the standard notice period of 2 trading days will be extended such that the Effective date does not conflict with the monthly Selection List cut-off date (t) and publication dates or the review implementation process. The Effective date of an extraordinary index change would be modified as follows:

- On any month: An ad-hoc correction that would be Effective after t and before the 3<sup>rd</sup> trading day after the publication of the Selection list is postponed being Effective on the 3<sup>rd</sup> trading day after the publication of the Selection list, i.e., t+6 based on the Selection List published on t+3.
- On review months only: An ad-hoc correction that would be Effective after the Thursday prior to the 2<sup>nd</sup> Friday and before the review Effective day is postponed so to become Effective on the review Effective day.
- Any information received on the review implementation day or the preceding day is processed to be Effective on the 2<sup>nd</sup> or the 1<sup>st</sup> trading day after the review Effective day.

Compliance with the basic criteria of adherence to the required recommendations of German Corporate Governance Code or minimum liquidity is monitored



described in Section 4.1. STOXX Ltd. communicates this decision and replaces the relevant company, usually two full trading days after the announcement (Discretionary Rule, see Section 1.3). In justified cases (e.g., in the event of the inclusion of the acquiring company in the index), the replacement can be delayed by up to ten trading days (Discretionary Rule, see Section 1.3). Where non-compliance with these rules on a future date is already certain, the relevant company may be replaced as early as on the next chaining date (Discretionary Rule, see Section 1.3).

monthly as part of the Selection List creation process. A breach of these criteria will leave the respective stock without a rank on the relevant monthly Selection List and until next index review. The stock will then be removed from the index during the index review process.

In all afore mentioned cases, the component in breach is replaced by applying the index-specific replacement rule. STOXX Ltd. communicates this decision and replaces the relevant component, usually two full trading days after the announcement. Where non-compliance with these rules on a future date is already certain, the relevant component may be replaced as early as on the next review date (Discretionary Rule).

### 5.1.7 Breach of Severe ESG Controversy Rating

In case a company which is an index constituent increases in its ESG Controversy Rating to Category 5, the respective constituent will be deleted from DAX® 50 ESG. The deletion will take place two dissemination days after the announcement, i.e., at the open of the 3rd dissemination day. A successor will be selected based on the Fast Exit rule. The replacement will be based on the most recently published DAX® 50 ESG ranking list.

#### 8.1 DAX 50 ESG

#### **ONGOING MAINTENANCE**

**Replacements:** A deleted company is replaced by applying the Fast Exit rule, based on the most recently published DAX 50 ESG selection list.

**Ad-hoc Exit:** In case a company which is an index constituent increases in its ESG Controversy Rating to Category 5, the respective constituent will be deleted from the DAX 50 ESG. The deletion will take place two dissemination days after the announcement, i.e., at the open of the 3<sup>rd</sup> dissemination day.

A company that is in breach with the basic criteria is removed from the index as described in section 4.10.2, usually with two trading days' notice.

**Ad-hoc Entry:** not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

### 7 Chaining

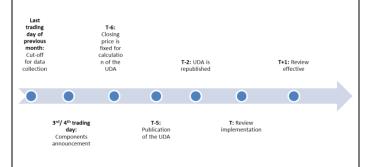
Quarterly chaining is carried out on the respective third Friday in March, June, September, and December. The index is calculated on this day using the weights applicable up to that point for the last time. The new weights will apply from the next trading day.

## 4.3 Index Review 4.3.1 General Principles

To keep up with the latest development of the stock markets, all indices are reviewed on a regular basis to ensure a transparent and up-to-date index basket. The implementation ("the rebalancing") is, unless specified otherwise, conducted quarterly after the close every third Friday in March, June, September and December and effective the next trading day.



If the implementation day is a non-trading day, then all dates will be preponed by one trading day accordingly. The review <u>effective</u> date remains the next trading day following the implementation day.



To maintain the continuity of the index's values, the index divisor is recalculated on the review implementation date as described in the DAX Equity Index Calculation Guide.

#### 7.1 Business Forecast

The business forecast is published at the quarterly underlying data announcement date, five trading days before the chaining date (i.e. at the second Friday in March, June, September, and December). It contains the constituents weightings and cap factors for the new index compositions effective from the trading day following the third Friday of a review month.

The new number of shares, free float factors and closing prices used to determine the constituents weightings and cap factors are fixed at the trading day prior to the quarterly underlying data announcement date (T-6). For this purpose, the  $c_{it}$  adjustment factors are set to 1.

The business forecast will be republished on the Wednesday before the chaining date (T-2), taking into account all corporate actions with ex-dates effective during the period between the quarterly underlying data announcement date and the chaining date (including delistings and IPOs) STOXX became aware of since the initial publication of the business forecast at the quarterly underlying data announcement date.

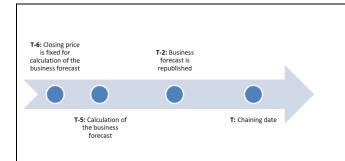
### 4.3.2 Underlying Data Announcement

The Underlying Data Announcement (UDA) is published at the quarterly underlying data announcement date, five trading days before the review implementation date (i.e. usually at the second Friday in March, June, September, and December), unless specified otherwise in the respective index methodology. It contains the weighting factors and weighting cap factors for the new index compositions Effective from the trading day following the review implementation date (usually the third Friday of a review month).

The new number of shares, free float factors and closing prices used to determine the constituents' weightings and cap factors are fixed at the trading day prior to the quarterly underlying data announcement date (T-6) and adjusted for corporate actions that become effective until the review Effective date (excl. cash dividends), unless specified otherwise in the respective index methodology.

The Underlying Data Announcement (UDA) is republished on the Wednesday before the review implementation date (T-2), taking into account all corporate actions excl. dividends with ex-dates Effective during the period between the quarterly underlying data announcement date and the review Effective date (including delistings and IPOs) STOXX





became aware of since the initial publication of the Underlying Data Announcement (UDA) at T-5.

### 10 Methodology Review

The purpose of the methodology review is to maintain integrity of the index, i.e., that the index methodology remains executable and results in an accurate and reliable representation of the market / economic realities the index seeks to measure.

### 15 Methodology Review

The purpose of the methodology review is to maintain integrity of the index, i.e., that the index methodology remains executable and results in an accurate and reliable representation of the market / economic realities the index seeks to measure.

### 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.

### 15.1 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.

### **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).

### **15.2 Review Procedure**

### 15.2.1 Initiation of Methodology Review

The IMC proposes an annual methodology review schedule for approval by the IGC (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide).

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 2.3 Discretion in the DAX Equity Index Calculation Guide).

#### 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

#### 15.2.2 Decision And Escalation

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



- 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.

The IMC decides on changes to the index methodology, unless

- 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 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:

- 1. 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
- 2. 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.

### **15.3 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 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
- 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.



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.

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.

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 2.3 Discretion in the DAX Equity Index Calculation Guide).

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.

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- 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



- 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. 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).

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 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.

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

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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 2.3 Discretion in the DAX Equity Index Calculation Guide).

# 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.

### 10.5 Publication of the methodology change

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

### 15.4 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 2.3 Discretion in the DAX Equity Index Calculation Guide) 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 2.3 Discretion in the DAX Equity Index Calculation Guide). 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.

### 15.5 Publication of The Methodology Change

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



prior to implementation. IGC may decide to shorten the notice period:

- 1. In exceptional or urgent cases such as extreme or exceptional market conditions or analogous extraordinary situations
- 2. 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 must be made on the same day the new rule or change is implemented.
- 3. 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 Ltd. shall 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 present Index Guide, 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.

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 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.
- d. 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 Ltd. shall 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 present Index Guide, 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.

### 11.1 Historical Data

Index histories exist for all indices at least from the respective baseline date:

The DAX® price index continues the Börsen-Zeitung index, which historically extends back to October 1959. However, historical index levels of the DAX® performance index are only available since its baseline date in December 1987.

### **16.1 Historical Data**

Index histories exist for all indices at least from the respective baseline date:

The DAX price index continues the Börsen-Zeitung index, which historically extends back to October 1959. However, historical index levels of the DAX performance index are only available since its baseline date in December 1987.



For the CDAX® price index there is a timeline which extends back to 1970. However, the history of the CDAX® performance index is only available since its baseline date in December 1987.

All histories up to and including 18 June 1999 are based on the prices of the floor trading on the FWB® Frankfurt Stock Exchange. Xetra® and Börse Frankfurt prices have been used to calculate the indices since 21 June 1999.

For the CDAX price index there is a timeline which extends back to 1970. However, the history of the CDAX performance index is only available since its baseline date in December 1987.

All histories up to and including 18 June 1999 are based on the prices of the floor trading on the FWB Frankfurt Stock Exchange. Xetra and Börse Frankfurt prices have been used to calculate the indices since 21 June 1999.

quarter, one week prior to quarterly review

implementation using Thursday's closing prices.

# **Annex II -** Sections of the DAX Equity Index Methodology Guide previously part of other DAX guides

#### Rule as per DAX Equity Index Methodology **Rule as per former DAX Guides** Guide 1.19 DAX Equal Weight Index 7.3. DAX Equal Weight Index The DAX® Equal Weight Index includes the same companies as the DAX® Index, with each company 7.3.1 OVERVIEW The DAX Equal Weight Index includes the same assigned the same weight. companies as the DAX Index, with each company 2.16 DAX Equal Weight Index assigned the same weight. The DAX® Equal Weight Index has the identical composition as the DAX® Index at all times. All **Universe:** Same as DAX companies are equally weighted on the regular quarterly review Weighting Scheme: The index is equal weighted. date. Between two chaining dates the weighting factors which are derived from the weight are kept Base value and dates: 1000 on September 21, 2018. constant. For replacements between regular chaining events the newly added company is assigned the weight of the **Dissemination calendar:** Xetra calendar deleted one. The base date of DAX® Equal Weight 7.3.2 INDEX REVIEW Index is 21 September 2018 with an index level of 1,000. Chaining takes place on a quarterly basis, in line **Selection list:** The DAX Equal Weight Index does with the DAX® methodology. The DAX® Equal Weight not have a separate selection list. The DAX Index is calculated as price, performance and net selection list is used for this index. return index in EUR and USD. DAX® Equal Weight Index uses the values of the constituent elements **Component selection:** Same as DAX (applying currency conversion, if necessary) in calculation of the index value and is expressed in **Review frequency:** Same as DAX index points, reflecting the index-specific currency. The intraday currency conversion is based on the spot Weighting factors: All components are equalrates provided by Refinitiv previously Financial and weighted on a quarterly basis. The weightings Risk business of Thomson Reuters. The WM/Reuters are published on the second Friday of each currency fixing rates from 5:00 pm CET are used to

calculate the indices' closing values.

3.15 DAX Equal Weight Index

3.15.1 Index Formula



The DAX® Equal Weight Index is calculated as follows:

$$Index_{t}^{} = K_{T}^{} \cdot \frac{\displaystyle \sum_{i=1}^{n} p_{it}^{} \cdot q_{iT}^{} \cdot c_{it}^{}}{\displaystyle \sum_{i=1}^{n} p_{i0}^{} \cdot q_{i0}^{}} \cdot Base$$

Number of shares in the index

Closing price of share of company i on the trading day before the first inclusion in the

Price of share of company i at time t

weighting factor of company i on the trading day before the first inclusion in the index weighting factor of company i at time T

calculation time of the index

Index-specific chaining factor valid as of chaining date T

Date of the last chaining

### 3.15.2 Determination of weighting factors

For chaining the weighting factor qi,T+1 of every company will be adjusted in order to ensure that every company has the same weighting in the index.

The following applies accordingly:

$$q_{i,t+1} = \frac{1}{p_{it} \cdot n} \cdot c$$

whereby:

Time of last trading on the day of scheduled or unscheduled chaining

Number of shares in index

Price of company i at time t  $q_{it+1}$ = Weighting factor of company i at time t+1

Scaling factor (1 000 000  $\cdot \sum_{i=1}^{n} p_{it}$  )

Weighting factors are rounded to the nearest integer

### 3.15.3 Chaining

The chaining 10 procedure for the DAX Equal Weight Index takes place as described in chapters 3.1.5, 3.1.6, 3.1.7 and 3.1.8.

Weighting factor = (100,000,000,000 / closing price of the stock in EUR) and rounded to integers.

#### 7.3.3 ONGOING MAINTENANCE

**Replacements:** Same as DAX. The replacement will enter the index with the same weight the old component had, based on the closing price of four trading days prior to the Effective date of the replacement.

Ad-hoc Exit: Same as DAX

Ad-hoc Entry: Same as DAX

Spin-offs: Same as DAX

### 1.20 DAX ESG Target Index

The objective of the DAX® ESG Target Index is to reflect the DAX® Index while maximizing its ESG score and

at the same time reducing its carbon intensity by at least 30%. The predicted tracking error is constraint with respect to its parent index. The index includes ESG exclusion filters for Global Standards Screening, ESG Controversies, Controversial Weapons, Thermal Coal, Tobacco, Nuclear Power, Military Contracting, Small Arms and Oil Sands.

### 2.17 DAX ESG Target Index

The DAX® ESG Target index composition is derived from the DAX®

index and the HDAX® as follow.

Step 1:

From the DAX®

index and the HDAX®

index apply the following set of exclusions:

 Global Standards Screening: compliant with the Global Standard Screening (GSS). Global Standards

### 8.2. DAX ESG Target

#### 8.2.1 OVERVIEW

The objective of the DAX ESG Target Index is to reflect the DAX Index while maximizing its ESG score and at the same time reducing its carbon intensity by at least 30%. The predicted tracking error is constraint with respect to its parent index. The index includes ESG exclusion filters for Global Standards Screening, ESG Controversies, Controversial Weapons, Thermal Coal, Tobacco, Nuclear Power, Military Contracting, Small Arms and Oil Sands.

**Universe:** DAX + HDAX

**Weighting Scheme:** The index is price weighted with weighting factors derived from an optimization that maximizes the ESG Score of the index portfolio.

Base value and dates: 1000 on September 24, 2012.

STOXX Customer Support: Tel. + 41 43 430 72 72, E-Mail: <a href="mailto:customersupport@stoxx.com">customersupport@stoxx.com</a>



Screening identifies companies that violate or are at risk of violating commonly accepted international norms and standards, enshrined in the United Nations Global Compact (UNGC) Principles, the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights (UNGPs), and their underlying conventions.

• Controversy Ratings: STOXX will exclude companies that Sustainalytics identifies to have a Controversy Rating of Category 5 (Severe). Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. Controversy involvement is one key measure of

ESG performance. A controversy is defined as an event or aggregation of events relating to an ESG topic. An event is assessed on its severity on a scale of 1 to 5 (1-Low, 2- Moderate, 3- Significant, 4- High, 5- Severe). The highest Event rating under a controversy indicator, automatically becomes the Controversy Rating for a given company.

• Controversial Weapons: Not involved in Controversial Weapons activities, as identified by Sustainalytics. The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons. The criteria for involvement are:

o Internal production or sale of controversial weapons o The ultimate holding company owns >10% of voting rights of an involved company

- o >10% of voting rights of a company is owned by the involved company 3.18 DAX ESG Target
- Product Involvement: Not have any Product Involvement in the following areas. STOXX will exclude

companies that Sustainalytics identifies to have:

#### Tobacco:

STOXX will exclude companies that Sustainalytics identifies to have:

o >0% revenues from manufacturing tobacco products

**Dissemination calendar:** Xetra calendar

#### 8.2.2 INDEX REVIEW

**Component selection:** The DAX ESG Target index composition is derived from the DAX index and the HDAX as follows.

### Step 1:

From the DAX index and the HDAX index apply the following set of exclusions:

- » Global Standards Screening: compliant with the Global Standard Screening (GSS). Global Standards Screening identifies companies that violate or are at risk of violating commonly accepted international norms and standards, enshrined in the United Nations Global Compact (UNGC) Principles, the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the UN Guiding Principles on Business and Human Rights (UNGPs), and their underlying conventions.
- Controversy Ratings: STOXX will exclude companies that Sustainalytics identifies to have a Controversy Rating of Category 5 (Severe). Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. Controversy involvement is one key measure of ESG performance. A controversy is defined as an event or aggregation of events relating to an ESG topic. An event is assessed on its severity on a scale of 1 to 5 (1- Low, 2- Moderate, 3-Significant, 4- High, 5- Severe). The highest Event rating under a controversy indicator, automatically becomes the Controversy Rating for a given company.
- » Controversial Weapons: Not involved in Controversial Weapons activities, as identified by Sustainalytics. The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and



o >5% revenues from supplying tobacco-related products/services

o >5% revenues from the distribution and/or retail sale of tobacco products.

#### Thermal Coal:

STOXX will exclude companies that Sustainalytics identifies to have:

o >5% revenues from thermal coal extraction (including thermal coal mining and exploration)

o >5% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal

coal electricity production (including utilities that own/operates coal-fired power plants)

#### Military Contracting:

STOXX will exclude companies that Sustainalytics identifies to have:

o >5% revenues from manufacturing military weapons systems and/or integral, tailor made

components of these weapons

o >5% revenues from tailor made products and/or services that support military weapons

#### Small Arms:

STOXX will exclude companies that Sustainalytics identifies to have:

o >0% revenues from manufacturing and selling assault weapons to civilian customers

o >0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian

#### customers

o >0% revenues from manufacturing and selling key components of small arms

o >5% revenues from manufacturing and selling small arms to military / law enforcement customers

white phosphorus weapons. The criteria for involvement are:

- Internal production or sale of controversial weapons
- The ultimate holding company owns >10% of voting rights of an involved company
- >10% of voting rights of a company is owned by the involved company
- » Product Involvement: Companies with Product Involvement in the following areas are excluded:
  - Tobacco: STOXX will exclude companies that Sustainalytics identifies to have:
    - >0% revenues from manufacturing tobacco products
    - >5% revenues from supplying tobacco-related products/services
    - >5% revenues from the distribution and/or retail sale of tobacco products.
  - Thermal Coal: STOXX will exclude companies that Sustainalytics identifies to have:
    - >5% revenues from thermal coal extraction (including thermal coal mining and exploration)
    - >5% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants)
  - Military Contracting: STOXX will exclude companies that Sustainalytics identifies to have:
    - >5% revenues from manufacturing military weapons systems and/or integral, tailor made components of these weapons
    - >5% revenues from tailor made products and/or



o >5% revenues from retail and/or distribution of assault weapons

o >5% revenues from retail and/or distribution of small arms (non-assault weapons))

**Nuclear Power:** 

STOXX will exclude companies that Sustainalytics identifies as having:

o >5% revenues from nuclear power production:

Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power

- o >5% revenues from nuclear power supporting products / services, including:
- Design and construction of nuclear power plants
- Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls
- Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
- Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate
- o >5% revenues from nuclear power distribution, including:
- The resale or distribution of electricity generated from nuclear power;
- This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix

Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

Oil Sands:

services that support military weapons

- Small Arms: STOXX will exclude companies that Sustainalytics identifies to have:
  - >0% revenues from manufacturing and selling assault weapons to civilian customers
  - >0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers
  - >0% revenues from manufacturing and selling key components of small arms
  - >5% revenues from manufacturing and selling small arms to military / law enforcement customers
  - >5% revenues from retail and/or distribution of assault weapons
  - >5% revenues from retail and/or distribution of small arms (non-assault weapons)
- Nuclear Power: STOXX will exclude companies that Sustainalytics identifies as having:
  - >5% revenues from nuclear power production Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power
  - >5% revenues from nuclear power supporting products / services, including:
    - Design and construction of nuclear power plants
    - Design and manufacture of specialized parts for use in nuclear power plants,



STOXX will exclude companies that Sustainalytics identifies to have:

o >5% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day

#### Step 2:

The replacement of excluded companies from the DAX® as described in Step 1 will be achieved in the following manner:

The remaining companies of the screened HDAX® (as per Step 1), are ranked in terms of free float market capitalization (as reported in the latest DAX Selection Indices ranking list), from high to low, with each constituent displaying its corresponding ESG score.

Starting with the largest companies in terms of free float market capitalization, a company is included in the index if it has the same or better ESG rank than the DAX Regular Exit 'candidate rank' for free float market capitalization (see Section 4.1.1.3 of the Guide to the DAX Equity Indices). The ESG rank is computed based on the HDAX composition after omitting all exclusions. This process is repeated until the number of constituents in the DAX® ESG Target Index matches the number of constituents of the DAX®index.

Chaining takes place on a quarterly basis, in line with the methodology applied to the DAX®

(cf. Guide to the DAX Equity Indices).

Between two chaining dates the weighting factors Qit, that are derived out of the weights (cf. section 3.18.1) are kept constant.

The base date of DAX® ESG Target index is the 24 September 2012, with a base level of 1000.

The DAX® ESG Target index is calculated as performance (net and gross return) and price index in real time every 1 seconds, between 9.00 a.m. and 5.55 p.m. CET in Euro. The calculation is by default based on Xetra price data DAX ESG Target index uses the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index points, reflecting the index-specific currency. The intraday currency conversion is

including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls

- Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
- Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate
- >5% revenues from nuclear power distribution, including:
  - The resale or distribution of electricity generated from nuclear power;
  - This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix

Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

 Oil Sands: STOXX will exclude companies that Sustainalytics identifies to have:



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. DAX ESG Target index is available in the currencies set forth

in the Vendor Code Sheet which is available under https://www.dax-indices.com/ressourcen.

Companies that are excluded from the HDAX® index because of an extraordinary index review (as described in section 5 of the Guide to the DAX Equity Indices) that are constituents of the DAX® ESG Target Index are removed from the DAX® ESG Target as well with the same notice period. A deleted company is not replaced.

# 3.18 DAX ESG Target 3.18.1 Weight Calculation

The weights are derived through an optimization process with the goal of maximising the portfolio ESG score (using Sustainalytics' ESG score) under the following constrains:

- · Asset Bounds. For the eligible assets, let
- o wi = the asset weight in the optimized portfolio
- o bi = the asset weight in the HDAX
- o bmin = the minimum asset weight in the HDAX

then the bounds are:

$$MAX(b_{min}, b / 2) < w < MIN(10 * b, b + 2%, 10%)$$

- Tracking Error: Predicted tracking error < 1.5%
- Hard Turnover Limit: One-way, quarterly turnover < 10%</li>
- Soft Turnover Limit: One-way, quarterly turnover < 5%
- Supersector Active Exposures: Less than 5% active exposure (+/-5%) w/r/t Parent Benchmark. Companies are assigned to the Supersectors according to the sector classification described in Section 11.3 of the DAX

 >5% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day

### Step 2:

The replacement of excluded companies from the DAX as described in Step 1 will be achieved in the following manner:

The remaining companies of the screened HDAX (as per Step 1), are ranked in terms of free float market capitalization (as reported in the latest DAX Selection Indices selection list), from high to low, with each constituent displaying its corresponding ESG score.

Starting with the largest companies in terms of free float market capitalization, a company is included in the index if it has the same or better ESG rank than the DAX Regular Exit 'candidate rank' for free float market capitalization (see section 7.1.2). The ESG rank is computed based on the HDAX composition after omitting all exclusions. This process is repeated until the number of constituents in the DAX ESG Target Index matches the number of constituents of the DAX index.

Weighting factors calculation: The weights are derived through an optimization process with the goal of maximising the portfolio ESG score (using Sustainalytics' ESG score) under the following constraints:

- » Asset Bounds: For the eligible assets, let
  - o  $w_i$  = the asset weight in the optimized portfolio
  - o  $b_i$  = the asset weight in the HDAX
  - o  $b_{min}$ = the minimum asset weight in the HDAX

then the bounds are:

$$MAX\left(b_{min}, \frac{b}{2}\right) < w < MIN(10 * b, b + 2\%, 10\%)$$



Equity Guide. This constraint is not applied to the Utilities Supersector.

• Total Carbon Intensity Reduction: At least 30% reduction relative to the Parent.

Carbon Intensity = (Scope 1 + Scope 2 GHG emissions) / Revenue (EUR million))

In case of infeasibilities, the Tracking Error, Soft Turnover, and Sector Active Exposures can all be potentially violated if necessary, to find a solution that minimizes the aggregated violations of those constraints.

The portfolio construction is performed using Axioma's Portfolio Optimization software. Risk predictions are made using the Axioma Europe Medium Horizon Equity Fundamental Factor Risk Model.

### 3.18.2 Weighting Factors Calculation

The weighting factors Qit are derived using the weights which were determined in section 3.18.1. For each constituent the weight wi is multiplied by the scale factor 100 bn. and divided by the current price pit.

The determined weighting factors become effective for the index calculation on the next chaining Friday.

Qit= 100bn \* wi / pit

The scale factor 100 bn. is defined as the sum of the product of the prices pit and weighting factors Qit. The weighting factors are kept constant for the following three months after the chaining procedure.

#### 3.18.3 Index Formula

The weighting factors Qit are kept constant between two chaining dates and DAX ESG Target index are calculated as follows:

$$Index_{t} = K_{T} \cdot \frac{\sum\limits_{i=1}^{n} p_{it} \cdot q_{iT} \cdot c_{it}}{\sum\limits_{i}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

whereby

- » <u>Tracking Error</u>: Predicted tracking error < 1 5%</p>
- » Hard Turnover Limit: One-way, quarterly turnover < 10%</p>
- » <u>Soft Turnover Limit</u>: One-way, quarterly turnover < 5%</p>
- » Super Sector Active Exposures: Less than 5% active exposure (+/-5%) w/r/t Parent Benchmark. Companies are assigned to the super sectors according to the sector classification described in Section 11.3 of the DAX Equity Guide. This constraint is not applied to the Utilities super sector.
- Total Carbon Intensity Reduction: At least 30% reduction relative to the Parent.
- » Carbon Intensity = (Scope 1 + Scope 2 GHG emissions) / Revenue (EUR million))

In case of infeasibilities, the Tracking Error, Soft Turnover, and Sector Active Exposures can all be potentially violated if necessary, to find a solution that minimizes the aggregated violations of those constraints.

The portfolio construction is performed using Axioma's Portfolio Optimization software. Risk predictions are made using the Axioma Europe Medium Horizon Equity Fundamental Factor Risk Model.

The weighting factors  $wf_{it}$  are derived using the weights as determined in the optimization. For each constituent the weight  $w_i$  is multiplied by the scale factor 100 bn. and divided by the current price pit.

The determined weighting factors become Effective for the index calculation on the review Effective date.

$$wf_{it} = \frac{w_{it}}{p_{it}} * 100bn$$

The scale factor 100bn. is defined as the sum of the product of the prices pit and weighting factors  $wf_{it}$ .

**Review frequency:** The index is reviewed on a quarterly basis (i.e. on the third Friday of the last month of a quarter). Deviating from the standard review process, the prices used to determine the constituent weights are as of 3 days before the quarterly underlying data announcement date (T-8).



cit = Adjustment factor of company i at time

n = Number of shares in the index

pio = Closing price of share of company i on the trading day before the first inclusion in the index

pit = Price of share of company i at time t

qio = weighting factor of company i on the trading day before the first inclusion in the index

q<sub>iT</sub> = weighting factor of company i at time T

t = calculation time of the index

K<sub>T</sub> = Index-specific chaining factor valid as of chaining date T

T = Date of the last chaining

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

$$Index_{t} = \frac{\sum_{i=1}^{n} p_{it} \cdot (K_{T} \cdot \frac{q_{tT}}{\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it})}{\sum_{i=1}^{n} p_{i0} \cdot \frac{q_{i0}}{\sum_{i}^{n} q_{i0}} \cdot 100} \cdot Base \quad = \frac{\sum_{i=1}^{n} p_{it} \cdot F_{i}}{A} \cdot Base$$

whereby

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

$$K_T \cdot \frac{q_{iT}}{n} \cdot 100 \cdot c$$

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

- Multiply the current price by the respective Fi weighting factor;
- take the sum of these products; and
- divide this by the base value (A) which remains constant until a modification in the index composition occurs.

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

#### 3.18.4 Chaining

Chaining takes place on a quarterly basis, in line with the methodology applied to the DAX® (cf. Guide to the DAX Equity Indices). Deviating from the standard chaining process, the prices used to determine the constituent weights are as of 3 days before the quarterly underlying data announcement date (T-8).

### 1.21 DAX ESG Screened and MDAX ESG Screened Indices

The objective of the DAX ESG Screened Index and MDAX ESG Screened Index is to reflect the performance of their respective parent index (DAX®

#### 8.2.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

#### 8.3. DAX ESG Screened and MDAX ESG Screened

#### 8.3.1 OVERVIEW

The objective of the DAX ESG Screened Index and MDAX ESG Screened Index is to reflect the



Index and MDAX® Index) while using ESG exclusion filters to remove companies that fail to meet Norms Based Screening, Controversial Weapons Screening, Minimum ESG Ratings and a series of Product Involvement Screenings

### 2.18 DAX ESG Screened and MDAX ESG Screened Indices

The ESG Screened indices' composition is derived from its parent index' composition, DAX® index and MDAX® index, respectively. From the parent index companies are filtered for exclusion based on the following set of criteria. Companies with missing data are considered ineligible and are excluded. Due to the exclusion approach, the derived ESG screened indices can have less constituents than the parent index. Companies that are excluded are not replaced in the index.

- ESG Ratings: Companies with ISS-ESG ESG Ratings of D- or below are excluded.
- Norms Based Screening: Companies are assessed against their adherence to international norms on human rights, labour standards, environmental protection and anti-corruption established in the UN Global Compact and the OECD Guidelines. Companies identified as 'Red' are excluded. ISS-ESG identifies companies as 'Red', if they are failing to respect established norms and where the issue remains unaddressed.
- Controversial Weapons: Not involved in Controversial Weapons activities, as identified by ISS-ESG. The following weapons are considered controversial: antipersonnel mines, biological weapons, chemical weapons, cluster munitions, depleted uranium program, and nuclear weapons (including Non-NPT). ISSESG's Controversial Weapons Research is designed to identify all companies in a corporate structure that have control over the relevant business activities, i.e., all immediate parent companies up to the ultimate parent. Companies identified as 'Red' are excluded.
- Product Involvement: Companies with Product Involvement in the following areas are excluded: Tobacco:

STOXX will exclude companies that ISS-ESG identifies to have:

o >0% revenues from involvement in the production of tobacco products.

o >5% revenues from the wholesale or retail distribution of tobacco products.

Thermal Coal Mining:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from thermal coal mining, including any exposure in production or services. The

performance of their respective parent index (DAX Index and MDAX Index) while using ESG exclusion filters to remove companies that fail to meet Norms Based Screening, Controversial Weapons Screening, Minimum ESG Ratings and a series of Product Involvement Screenings.

**Universe:** DAX (DAX ESG Screened), MDAX (MDAX ESG Screened)

**Weighting Scheme:** The indices are free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

**Base value and dates:** 1000 on December 16, 2016.

Dissemination calendar: Xetra calendar

#### 8.3.2 INDEX REVIEW

Component selection: The ESG Screened indices' composition is derived from its parent index' composition, DAX index and MDAX index, respectively. From the parent index companies are filtered for exclusion based on the following set of criteria. Companies with missing data are considered ineligible and are excluded. Due to the exclusion approach, the derived ESG screened indices can have less constituents then the parent index. Companies that are excluded are not replaced in the index.

- » ESG Ratings: Companies with ISS-ESG ESG Ratings of D- or below are excluded.
- » Norms Based Screening: Companies are assessed against their adherence to international norms on human rights, labour standards, environmental protection and anti-corruption established in the UN Global Compact and the OECD Guidelines. Companies identified as 'Red' are excluded. ISS-ESG identifies companies as 'Red', if they are failing to respect established norms and where the issue remains unaddressed.
- » Controversial Weapons: Not involved in Controversial Weapons activities, as identified by ISS-ESG. The following



maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information Thermal Coal Power Generation:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from thermal coal power generation. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information.

Oil Sands:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from the extraction and processing of oil sands for the most recent fiscal year period.

**Nuclear Power Service:** 

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from the provision of services to the nuclear power industry, including the supply of key components, technical support, maintenance, and the management of nuclear waste.

**Nuclear Power Production:** 

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from the generation of electric power from nuclear fission.

**Nuclear Power Uranium:** 

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from involvement in uranium exploration, extraction, and processing.

Civilian Firearms:

STOXX will exclude companies that ISS-ESG identifies to have:

o >0% revenues from involvement in the production of civilian firearms and/or the provision of related services.

o >5% revenues from involvement in the distribution of civilian firearms.

Military Equipment:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from involvement in the production of military equipment and/or the provision of related services.

The base date of the DAX ESG Screened and MDAX ESG Screened indices is 16 December 2016, with a base level of 1000.

weapons are considered controversial: anti-personnel mines, biological weapons, chemical weapons, cluster munitions, depleted uranium program, and nuclear weapons (including Non-NPT). ISS-ESG's Controversial Weapons Research is designed to identify all companies in a corporate structure that have control over the relevant business activities, i.e., all immediate parent companies up to the ultimate parent. Companies identified as 'Red' are excluded.

- » Product Involvement: Companies with Product Involvement in the following areas are excluded:
  - Tobacco: STOXX will exclude companies that ISS-ESG identifies to have:
    - >0% revenues from involvement in the production of tobacco products.
    - >5% revenues from the wholesale or retail distribution of tobacco products.
  - Thermal Coal Mining: STOXX will exclude companies that ISS-ESG identifies to have:
    - >5% revenues from thermal coal mining, including any exposure in production or services. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information
  - Thermal Coal Power Generation:
     STOXX will exclude companies that
     ISS-ESG identifies to have:
    - >5% revenues from thermal coal power generation. The maximum percentage of revenues



The DAX ESG Screened and MDAX ESG Screened indices are calculated as performance (net and gross return) and price index in real time every 1 seconds, between 9.00 a.m. and 5.55 p.m. CET in Euro.

The calculation is by default based on Xetra price data, ESG screened indices use the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index points, reflecting the index-specific currency. 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. ESG screened indices are available in the currencies set forth in the Vendor Code Sheet which is available under <a href="https://www.dax-indices.com/ressourcen">https://www.dax-indices.com/ressourcen</a>.

### **3.19 DAX ESG Screened and MDAX ESG Screened** 3.19.1 Weight Calculation

The index weighting is based on the free float market capitalization, whereby the maximum weighting per share is capped at 10 percent. This cap is designed to prevent individual shares from dominating the index.

3.19.2 Index Formula

The indices are each calculated as price and performance indices.

The DAX ESG Screened and MDAX ESG Screened indices use the Laspeyres index formula and are calculated as follows:

$$Index_{t} = K_{T} \cdot \frac{\sum p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum p_{i0} \cdot q_{i0}} \cdot Base$$

whereby:

cit = Adjustment factor of company i at time t

ffiT = Free float factor of share class i at time T

n = Number of shares in the index

pi0 = Closing price of share i on the trading day before

the first inclusion in the index

pit = Price of share i at time t

qi0 = Number of shares of company i on the trading

day before the first inclusion in the index

qiT = Number of shares of company i at time T

t = calculation time of the index

KT = 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:

values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information.

- Oil Sands: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from the extraction and processing of oil sands for the most recent fiscal year period.
- Nuclear Power Service: STOXX will exclude companies that ISS-ESG identifies to have:
  - >1% revenues from the provision of services to the nuclear power industry, including the supply of key components, technical support, maintenance, and the management of nuclear waste.
- Nuclear Power Production:

STOXX will exclude companies that ISS-ESG identifies to have:

- >1% revenues from the generation of electric power from nuclear fission.
- Nuclear Power Uranium: STOXX will exclude companies that ISS-ESG identifies to have:
  - >1% revenues from involvement in uranium exploration, extraction, and processing.
- Civilian Firearms: STOXX will exclude companies that ISS-ESG identifies to have:
  - >0% revenues from involvement in the production of civilian firearms and/or the provision of related services.



$$Index_{t} = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot (K_{T} \cdot \frac{ff_{iT} \cdot q_{iT}}{\displaystyle\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it})}{\displaystyle\sum_{i=1}^{n} p_{i0} \cdot \frac{q_{i0}}{\displaystyle\sum_{i=1}^{n} q_{i0}} \cdot 100} \cdot Basis = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot F_{i}}{A} \cdot Basis$$

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

and: 
$$F_{i} = K_{T} \cdot \frac{ff_{iT} \cdot q_{iT}}{\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it}$$

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

- Multiply the current price by the respective Fi weighting factor;
- 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.

### 3.19.3 Chaining

Chaining takes place on a quarterly basis, in line with the methodology applied to the DAX® (cf. Guide to the DAX Equity Indices). The cut-off date for ISS-ESG data is the last trading day of the month prior to the chaining. The base date of the DAX ESG Screened and MDAX ESG Screened indices is 16 December 2016, with a base level of 1000.

### 3.19.4 Replacements

Companies that are excluded from the parent index (DAX index resp., MDAX index) because of an extraordinary index review (as described in section 5 of the Guide to the DAX Equity Indices) that are constituents of the DAX ESG Screened index (resp., MDAX ESG Screened index) are removed from the respective ESG Screened index as well with the same notice period. A deleted company is not replaced.

### 1.23 DAX 50 ESG+ Index

The objective of the DAX 50 ESG+ Index is to reflect the performance of the 50 highest ESG ranking companies selected from the 75 largest companies in terms of free float Market Cap of the HDAX® Index after using ESG exclusion filters to remove companies that fail to meet Norms Based Screening, Controversial Weapons

- >5% revenues from involvement in the distribution of civilian firearms.
- Military Equipment: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from involvement in the production of military equipment and/or the provision of related services.

The cut-off date for ISS-ESG data is the last trading day of the month prior to the review month.

**Review frequency:** The index is reviewed on a quarterly basis.

#### 8.3.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

### 8.4. DAX 50 ESG+ Index

#### 8.4.1 OVERVIEW

The objective of the DAX 50 ESG+ Index is to reflect the performance of the 50 highest ESG ranking companies selected from the 75 largest companies in terms of free float Market Cap of the HDAX Index after using ESG exclusion filters to remove companies that fail to meet Norms Based



Screening, Minimum ESG Ratings and a series of Business Activity Screenings.

#### 2.20 DAX 50 ESG+ Index

The DAX 50 ESG+ index composition is derived from its parent index, the HDAX® index as follows: From the parent index HDAX®, the 75 largest companies in terms of free float Market Cap are selected and a set of exclusion criteria as stated below are applied. Companies with missing data are excluded.

- ESG Ratings: Companies with ISS-ESG ESG Ratings of D- or below are excluded.
- Norms Based Screening: companies are assessed against their adherence to international norms on human rights, labour standards, environmental protection and anti-corruption established in the UN Global Compact and the OECD Guidelines. Companies identified as 'Red' are excluded. ISS-ESG identifies companies are 'Red', if they are failing to respect established norms and where the issue remains unaddressed.
- Controversial Weapons: Not involved in Controversial Weapons activities, as identified by ISS-ESG. The following weapons are considered controversial: antipersonnel mines, white phosphorus weapons, biological weapons, chemical weapons, cluster munitions, depleted uranium programme, and nuclear weapons (including Non-NPT). ISS-ESG's Controversial Weapons Research is designed to identify all companies in a corporate structure that have control over the relevant business activities, i.e., all immediate parent companies up to the ultimate parent. Companies identified as 'Red' are excluded.
- Business Activities: Companies with Product Involvement in the following areas will be excluded: Tobacco:

STOXX will exclude companies that ISS-ESG identifies to have:

- o >0% revenues from involvement in the production of tobacco products.
- o >5% revenues from the wholesale or retail distribution of tobacco products.
- o >5% revenues from services related to tobacco products.

Thermal Coal Mining:

STOXX will exclude companies that ISS-ESG identifies to have:

Screening, Controversial Weapons Screening, Minimum ESG Ratings and a series of Business Activity Screenings.

**Universe:** HDAX

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 7% on a quarterly basis.

Base value and dates: 1000 on March 20, 2017.

**Dissemination calendar:** Xetra calendar

8.4.2 INDEX REVIEW

**Component selection:** The DAX 50 ESG+ index composition is derived from its parent index, the HDAX index as follows:

From the parent index HDAX, the 75 largest companies in terms of free float Market Cap are selected and a set of exclusion criteria as stated below are applied. Companies with missing data are excluded. The cut-off date for ISS-ESG data is the last trading day of the month prior to the review month.

- **ESG Ratings:** Companies with ISS-ESG ESG Ratings of D- or below are excluded.
- » Norms Based Screening: companies are assessed against their adherence to international norms on human rights, labour standards, environmental protection and anti-corruption established in the UN Global Compact and the OECD Guidelines. Companies identified as 'Red' are excluded. ISS-ESG identifies companies are 'Red', if they are failing to respect established norms and where the issue remains unaddressed.
- » Controversial Weapons: Not involved in Controversial Weapons activities, as identified by ISS-ESG. The following weapons are considered controversial: anti-personnel mines, white phosphorus weapons, biological weapons, chemical weapons, cluster munitions, depleted uranium programme, and nuclear weapons (including Non-NPT). ISS-ESG's



o >5% revenues from thermal coal mining, including any exposure in production or services. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information. Thermal Coal Mining Expansion:

Effective March 2022, STOXX will exclude companies that ISS-ESG identifies to have:

o Any involvement in thermal coal mine development operations or plans.

Thermal Coal Power Generation:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from generation of electric power using coal. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information.

Thermal Coal Power Generation Expansion: Effective March 2022, STOXX will exclude companies that ISS-ESG identifies to have:

o Any involvement in coal power expansion or plans. Oil Sands:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from the extraction and processing of oil sands for the most recent fiscal year period. Arctic Oil & Gas Exploration:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from the extraction of oil and gas extraction through arctic drilling for the most recent fiscal year period.

Hydraulic Fracturing:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from hydraulic fracturing for the most recent fiscal year period.

Nuclear Power Service:

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from the provision of services to the nuclear power industry, including the supply of key components, technical support, maintenance, and the management of nuclear waste.

**Nuclear Power Production:** 

Controversial Weapons Research is designed to identify all companies in a corporate structure that have control over the relevant business activities, i.e., all immediate parent companies up to the ultimate parent. Companies identified as 'Red' are excluded.

- » Product Involvement: Companies with Product Involvement in the following areas are excluded:
  - Tobacco: STOXX will exclude companies that ISS-ESG identifies to have:
    - >0% revenues from involvement in the production of tobacco products.
    - >5% revenues from the wholesale or retail distribution of tobacco products.
    - >5% revenues from services related to tobacco products.
  - Thermal Coal Mining: STOXX will exclude companies that ISS-ESG identifies to have:
    - >5% revenues from thermal coal mining, including any exposure in production or services. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information
  - Thermal Coal Mining Expansion:
     STOXX will exclude companies that
     ISS-ESG identifies to have:
    - Any involvement in thermal coal mine development operations or plans.



STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from the generation of electric power from nuclear fission.

**Nuclear Power Uranium:** 

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from involvement in uranium exploration, extraction, and processing.

Civilian Firearms:

STOXX will exclude companies that ISS-ESG identifies to have:

o >0% revenues from involvement in the production of civilian firearms and/or the provision of related services.

o >5% revenues from involvement in the distribution of civilian firearms.

Military Equipment:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from involvement in the production of military equipment and/or the provision of related services.

o >10% revenues from involvement in military equipment and services

From the remaining companies, the top 50 companies in terms of ESG score, sourced from ISS-ESG ESG Performance Score, are then selected into the index. In case less than 50 companies are eligible for inclusion, no additional company will be added and the index will be constituted by less than 50 companies, In case the ESG Score is identical for two companies, the larger company in terms of free float Market Cap is selected.

Chaining takes place on a quarterly basis, in line with the methodology applied to the DAX® (cf. Guide to the DAX Equity Indices). The cut-off date for ISS-ESG data is the last trading day of the month prior to the chaining.

The base date of the DAX 50 ESG+ index is 20 March 2017, with a base level of 1000.

The DAX 50 ESG+ index is calculated as performance (net and gross return) and price index in real time every 1 seconds, between 9.00 a.m. and 5.55 p.m. CET in Euro.

The calculation is by default based on Xetra price data, the index uses the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index

- Thermal Coal Power Generation: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from generation of electric power using coal. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information.
- Thermal Coal Power Generation Expansion: STOXX will exclude companies that ISS-ESG identifies to have:
  - Any involvement in coal power expansion or plans.
- Oil Sands: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from the extraction and processing of oil sands for the most recent fiscal year period.
- Arctic Oil & Gas Exploration:
   STOXX will exclude companies that
   ISS-ESG identifies to have:
  - >5% revenues from the extraction of oil and gas extraction through arctic drilling for the most recent fiscal year period.
- Hydraulic Fracturing: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from hydraulic fracturing for the most recent fiscal year period.
- Nuclear Power Service: STOXX will exclude companies that ISS-ESG identifies to have:
  - >1% revenues from the provision of services to the



points, reflecting the index-specific currency. 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. ESG screened indices are available in the currencies set forth in the Vendor Code Sheet which is available under https://www.dax-indices.com/ressourcen. Companies that are excluded from the parent index (the HDAX index) because of an extraordinary index review (as described in section 5 of the Guide to the DAX Equity Indices) that are constituents of the DAX 50 ESG+ index are removed from the DAX 50 ESG+ index as well with the same notice period. A deleted company is not replaced.

#### 3.21 DAX 50 ESG+ Index

### 3.21.1 Weight Calculation

The index weighting is based on the free float market capitalization, whereby the maximum weighting per share is capped at 7 percent. This cap is designed to prevent individual shares from dominating the index.

### 3.21.2 Index Formula

The DAX 50 ESG+ index is capital weighted. Only the shares in the free float are considered when calculating the capitalization. The index is calculated as price and performance indices.

The index uses the Laspeyres index formula and is calculated as follows:

$$Index_{t} = K_{T} \cdot \frac{\sum p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum p_{i0} \cdot q_{i0}} \cdot Base$$

whereby:

 $c_{it}$  = Adjustment factor of company i at time t

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

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<sub>10</sub> = 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

nuclear power industry, including the supply of key components, technical support, maintenance, and the management of nuclear waste.

#### Nuclear Power Production:

STOXX will exclude companies that ISS-ESG identifies to have:

- >1% revenues from the generation of electric power from nuclear fission.
- Nuclear Power Uranium: STOXX will exclude companies that ISS-ESG identifies to have:
  - >1% revenues from involvement in uranium exploration, extraction, and processing.
- Civilian Firearms: STOXX will exclude companies that ISS-ESG identifies to have:
  - >0% revenues from involvement in the production of civilian firearms and/or the provision of related services.
  - >5% revenues from involvement in the distribution of civilian firearms.
- Military Equipment: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from involvement in the production of military equipment and/or the provision of related services.
  - >10% revenues from involvement in military equipment and services

From the remaining companies, the top 50 companies in terms of ESG score, sourced from ISS-ESG ESG Performance Score, are then selected into the index. In case less than 50 companies are



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

$$Index_{_{t}} = \frac{\displaystyle\sum_{_{i=1}}^{n} p_{_{if}} \cdot (K_{_{T}} \cdot \frac{ff_{_{iT}} \cdot q_{_{iT}}}{\displaystyle\sum_{_{_{i=1}}}^{n} q_{_{i0}}} \cdot 100 \cdot c_{_{if}})}{\displaystyle\sum_{_{_{i=1}}}^{n} p_{_{i0}} \cdot \frac{q_{_{i0}}}{\displaystyle\sum_{_{_{i}}}^{n} q_{_{i0}}} \cdot 100} \cdot Basis = \frac{\displaystyle\sum_{_{_{i=1}}}^{n} p_{_{if}} \cdot F_{_{i}}}{A} \cdot Basis$$

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

and: 
$$F_{i} = K_{T} \cdot \frac{f f_{iT} \cdot q_{iT}}{\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it}$$

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

- Multiply the current price by the respective Fi weighting factor;
- 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.

eligible for inclusion, no additional company will be added and the index will be constituted by less than 50 companies, In case the ESG Score is identical for two companies, the larger company in terms of free float Market Cap is selected.

**Review frequency:** The index is reviewed on a quarterly basis.

#### 8.4.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

#### 1.22 MDAX ESG+ Index

The objective of the MDAX ESG+ Index is to reflect the performance of the MDAX® Index while using ESG exclusion filters to remove companies that fail to meet Norms Based Screening, Controversial Weapons Screening, Minimum ESG Ratings and a series of Business Activity Screenings. If less than 20% of the companies of the parent index are excluded an additional filter based on ESG Score is applied to exclude the lowest ranked companies in terms of ESG score.

#### 2.19 MDAX ESG+ Index

The MDAX ESG+ index composition is derived from its parent index, the MDAX® index. Companies that are excluded are not replaced in the index. From the parent index apply the following set of

exclusions, companies missing data are excluded:

- ESG Ratings: Companies with ISS-ESG ESG Ratings of D- or below are excluded.
- Norms Based Screening: companies are assessed against their adherence to international norms on

#### 8.5. MDAX ESG+ Index

#### 8.5.1 OVERVIEW

The objective of the MDAX ESG+ Index is to reflect the performance of the MDAX Index while using ESG exclusion filters to remove companies that fail to meet Norms Based Screening, Controversial Weapons Screening, Minimum ESG Ratings and a series of Business Activity Screenings. If less than 20% of the companies of the parent index are excluded an additional filter based on ESG Score is applied to exclude the lowest ranked companies in terms of ESG score.

**Universe:** MDAX

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

Base value and dates: 1000 on March 17, 2017.

Dissemination calendar: Xetra calendar



human rights, labour standards, environmental protection and anti-corruption established in the UN

Global Compact and the OECD Guidelines. Companies identified as 'Red' are excluded. ISS-ESG identifies companies are 'Red', if they are failing to respect established norms and where the issue remains unaddressed.

- Controversial Weapons: Not involved in Controversial Weapons activities, as identified by ISS-ESG. The following weapons are considered controversial: antipersonnel mines, biological weapons, chemical weapons, cluster munitions, depleted uranium programme, white phosphorus weapons and nuclear weapons (including Non-NPT). ISS-ESG's Controversial Weapons Research is designed to identify all companies in a corporate structure that have control over the relevant business activities, i.e., all immediate parent companies up to the ultimate parent. Companies identified as 'Red' are excluded.
- Business Activities: Companies with Product Involvement in the following areas will be excluded:

#### Tobacco:

STOXX will exclude companies that ISS-ESG identifies to have:

- o >0% revenues from involvement in the production of tobacco products.
- o >5% revenues from the wholesale or retail distribution of tobacco products.
- o >5% revenues from services related to tobacco products.

### Thermal Coal Mining:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from thermal coal mining, including any exposure in production or services. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information

#### 8.5.2 INDEX REVIEW

**Component selection:** The MDAX ESG+ index composition is derived from its parent index, the MDAX index. Companies that are excluded are not replaced in the index.

From the parent index apply the following set of exclusions. Companies missing data are excluded. The cut-off date for ISS-ESG data is the last trading day of the month prior to the review month.

- » ESG Ratings: Companies with ISS-ESG ESG Ratings of D- or below are excluded.
- » Norms Based Screening: Companies are assessed against their adherence to international norms on human rights, labour standards, environmental protection and anti-corruption established in the UN Global Compact and the OECD Guidelines. Companies identified as 'Red' are excluded. ISS-ESG identifies companies are 'Red', if they are failing to respect established norms and where the issue remains unaddressed.
- Controversial Weapons: Not involved in Controversial Weapons activities, as identified by ISS-ESG. The following weapons are considered controversial: anti-personnel mines, biological weapons, chemical weapons, cluster munitions, depleted uranium programme, white phosphorus weapons and nuclear weapons (including Non-NPT). ISS-ESG's Controversial Weapons Research is designed to identify all companies in a corporate structure that have control over the relevant business activities, i.e., all immediate parent companies up to the ultimate parent. Companies identified as 'Red' are excluded.
- » Product Involvement: Companies with Product Involvement in the following areas are excluded:
  - Tobacco: STOXX will exclude companies that ISS-ESG identifies to have:
    - >0% revenues from involvement in the



Thermal Coal Mining Expansion:

STOXX will exclude companies that ISS-ESG identifies to have:

o Any involvement in thermal coal mine development operations or plans effective March 2022.

Thermal Coal Power Generation:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from generation of electric power using coal. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information.

Thermal Coal Power Generation Expansion:

STOXX will exclude companies that ISS-ESG identifies to have:

o Any involvement in coal power expansion or plans effective March 2022

Oil Sands:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from the extraction and processing of oil sands for the most recent fiscal year period.

Arctic Oil & Gas Exploration:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from the extraction of oil and gas extraction through arctic drilling for the most recent fiscal year period.

Hydraulic Fracturing:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from hydraulic fracturing for the most recent fiscal year period.

- production of tobacco products.
- >5% revenues from the wholesale or retail distribution of tobacco products.
- >5% revenues from services related to tobacco products.
- Thermal Coal Mining: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from thermal coal mining, including any exposure in production or services. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information
- Thermal Coal Mining Expansion: STOXX will exclude companies that ISS-ESG identifies to have:
  - Any involvement in thermal coal mine development operations or plans.
- Thermal Coal Power Generation:
   STOXX will exclude companies that
   ISS-ESG identifies to have:
  - >5% revenues from generation of electric power using coal. The maximum percentage of revenues values are based on the best available data, which may include reported revenues, reported percentage of revenues, or estimated revenues based on available information.
- Thermal Coal Power Generation Expansion: STOXX will exclude



Nuclear Power Service:

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from the provision of services to the nuclear power industry, including the supply of key components, technical support, maintenance, and the management of nuclear waste.

**Nuclear Power Production:** 

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from the generation of electric power from nuclear fission.

**Nuclear Power Uranium:** 

STOXX will exclude companies that ISS-ESG identifies to have:

o >1% revenues from involvement in uranium exploration, extraction, and processing.

Civilian Firearms:

STOXX will exclude companies that ISS-ESG identifies to have:

o >0% revenues from involvement in the production of civilian firearms and/or the provision of related services.

o >5% revenues from involvement in the distribution of civilian firearms.

Military Equipment:

STOXX will exclude companies that ISS-ESG identifies to have:

o >5% revenues from involvement in the production of military equipment and/or the provision of

related services.

o >10% revenues from involvement in military equipment and services

companies that ISS-ESG identifies to have:

- Any involvement in coal power expansion or plans.
- Oil Sands: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from the extraction and processing of oil sands for the most recent fiscal year period.
- Arctic Oil & Gas Exploration:
   STOXX will exclude companies that
   ISS-ESG identifies to have:
  - >5% revenues from the extraction of oil and gas extraction through arctic drilling for the most recent fiscal year period.
- Hydraulic Fracturing: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from hydraulic fracturing for the most recent fiscal year period.
- Nuclear Power Service: STOXX will exclude companies that ISS-ESG identifies to have:
  - >1% revenues from the provision of services to the nuclear power industry, including the supply of key components, technical support, maintenance, and the management of nuclear waste.
- Nuclear Power Production:

STOXX will exclude companies that ISS-ESG identifies to have:

- >1% revenues from the generation of electric power from nuclear fission.
- Nuclear Power Uranium: STOXX will exclude companies that ISS-ESG identifies to have:



If less than 20% of the companies of the parent index are excluded by the screens above, the worst companies in terms of ESG performance, as defined by ISS-ESG, are excluded until the target number of constituents is reached. Chaining takes place on a quarterly basis, in line with the methodology applied to the DAX® (cf. Guide to the DAX Equity Indices). The cut-off date for ISS-ESG data is the last trading day of the month prior to the chaining.

The base date of the MDAX ESG+ index is 17 March 2017, with a base level of 1000.

The MDAX ESG+ index is calculated as performance (net and gross return) and price index in real time every 1 seconds, between 9.00 a.m. and 5.55 p.m. CET in Euro.

The calculation is by default based on Xetra price data, the index uses the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index points, reflecting the index-specific currency. 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. ESG screened indices are available in the currencies set forth in the Vendor Code Sheet which is available under https://www.daxindices.com/ressourcen.

Companies that are excluded from the parent index (the MDAX index) because of an extraordinary index review (as described in section 5 of the Guide to the DAX Equity Indices) that are constituents of the MDAX ESG+ index are removed from the MDAX ESG+ index as well with the same notice period. A deleted company is not replaced.

#### 3.20 MDAX ESG+ Index

3.20.1 Weight Calculation

The index weighting is based on the free float market capitalization, whereby the maximum weighting per share is capped at 10 percent. This cap is designed to prevent individual shares from dominating.

3.20.2 Index Formula

- >1% revenues from involvement in uranium exploration, extraction, and processing.
- Civilian Firearms: STOXX will exclude companies that ISS-ESG identifies to have:
  - >0% revenues from involvement in the production of civilian firearms and/or the provision of related services.
  - >5% revenues from involvement in the distribution of civilian firearms.
- Military Equipment: STOXX will exclude companies that ISS-ESG identifies to have:
  - >5% revenues from involvement in the production of military equipment and/or the provision of related services.
  - >10% revenues from involvement in military equipment and services

If less than 20% of the companies of the parent index are excluded by the screens above, the worst companies in terms of ESG performance, as defined by ISS-ESG, are excluded until the target number of constituents is reached.

**Review frequency:** The index is reviewed on a quarterly basis.

#### 8.5.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.



The MDAX ESG+ index is capital weighted. Only the shares in the free float are considered when calculating the capitalization. The index is calculated as price and performance indices. The index uses the Laspeyres index formula and is calculated as follows:

$$Index_{_{t}} = K_{_{T}} \cdot \frac{\sum p_{_{it}} \cdot ff_{_{iT}} \cdot q_{_{iT}} \cdot c_{_{it}}}{\sum p_{_{i0}} \cdot q_{_{i0}}} \cdot Base$$

whereby:

 $c_{it}$  = Adjustment factor of company i at time t  $ff_{iT}$  = Free float factor of share class i at time T

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

pit = Price of share i at time t

qio = 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:

$$Index_{\tau} = \frac{\sum_{i=1}^{n} p_{ii} \cdot (K_{T} \cdot \frac{ff_{TT} \cdot q_{iT}}{\sum_{j=1}^{n} q_{j0}} \cdot 100 \cdot c_{it})}{\sum_{i=1}^{n} p_{i0} \cdot \frac{q_{i0}}{\sum_{j=1}^{n} q_{i0}} \cdot 100} \cdot Basis = \frac{\sum_{i=1}^{n} p_{it} \cdot F_{i}}{A} \cdot Basis$$

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

and: 
$$F_{_{i}} = K_{_{T}} \cdot \frac{ff_{_{iT}} \cdot q_{_{iT}}}{\sum\limits_{_{i=1}}^{n} q_{_{i0}}} \cdot 100 \cdot c_{_{it}}$$

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

- Multiply the current price by the respective Fi weighting factor;
- 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.

#### 2.1 DivDAX and DivMSDAX

9. DAX Dividend Indices



DivDAX comprises those 15 companies with the highest dividend yield within the DAX® index, DivMSDAX those within the combined universe of MDAX and SDAX index. Moreover, the shares are required to show an average daily traded volume of 250,000€ over the past three months. Historical dividend yields are calculated by dividing distributed dividends by the closing price of the respective share on the day preceding the ex-date.

The 15 DivDAX® and DivMSDAX component issues are re-determined each September. Hence, the index composition will generally change once a year. If an index member publicly announces that it will not pay dividends at the upcoming dividend date, it will be removed from the index at the next rebalancing date. It will be replaced by the next company on the ranking list, that has not ceased dividend payments itself. If no replacement exists, no action is taken. If there is no rebalancing date between the announcement and the previously planned payout date the change will be executed with two full trading days' notice following the announcement.

Companies that are excluded from the parent index (DAX for DivDAX, MDAX and SDAX for DivMSDAX) because of an extraordinary index review (as described in section 5 of the Guide to the DAX Equity Indices) that are constituents of the DivDAX or DivMSDAX index are removed from the respective index as well with the same notice period (usually 2 trading days) in case the extraordinary review was triggered by an insolvency of the company or a breach of the following basic criteria:

- minimum free float
- · listing on Regulated Market of FWB
- continuous trading

It will be replaced by the next company on the ranking list that has not ceased dividend payments. If no replacement exists, the company is removed without replacement.

The index weighting is based on the free float market capitalization1, whereby the maximum weighting per share is capped at 10 percent. This cap is designed to prevent individual shares from dominating the index. All index members are also included in a blue-chip index, thus ensuring high liquidity.

Rebalancing takes place on a quarterly basis, in line with the methodology applied to DAX.2

#### 9.1. DivDAX and DivMSDAX

#### 9.1.1. OVERVIEW

The DivDAX and DivMSDAX are constructed using dividend yield as a selection criterion. DivDAX contains the 15 companies with the highest dividend yield within the German blue chip index DAX, DivMSDAX is based on the companies included in MDAX and SDAX.

**Universe:** DivDAX: DAX, DivMSDAX: MDAX and SDAX

**Weighting Scheme:** The indices are free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

**Base value and dates:** 100 on September 17, 1999.

Dissemination calendar: Xetra calendar

#### 9.1.2 INDEX REVIEW

**Selection list:** The selection list is updated and published once per year on the 4<sup>th</sup> trading day of September. The cut-off date is the last trading day of the month for which the selection list is created.

Component selection: DivDAX comprises those 15 companies with the highest dividend yield within the DAX index, DivMSDAX those within the combined universe of MDAX and SDAX index. Moreover, the shares are required to show an average daily traded volume of 250,000€ over the past three months. Historical dividend yields are calculated by dividing distributed dividends by the closing price of the respective share on the day preceding the ex-date.

**Review frequency:** The indices are reviewed once per year in September. Rebalancing takes place on a quarterly basis.

#### 9.1.3 ONGOING MAINTENANCE

**Replacements:** A deleted component is replaced by the highest ranked non-component of the latest selection list that has not announced cancellation of upcoming dividend payments. If no



The base is 17 September 1999, with a base value of 100.

The indices are calculated both as a price and as a performance index. They are calculated every 15 seconds, using the last available Xetra® price data for companies quoted in the Prime Standard segment. DivDAX and DivMSDAX use the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in Index points, reflecting the index-specific currency. 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. DivDAX and DivMSDAX are available in the currencies set forth in the Vendor Code Sheet which is available under https://www.dax-indices.com/ressourcen.

### 3.1 DivDAX, DivMSDAX, DAXplus Seasonal Strategy and DAXplus Export Strategy

### 3.1.1 Index Formulas

The indices are conceived according to the Laspeyres formula set out below:

A. DivDAX® and DAXplus® Export Strategy

$$Index_{t} = K_{T} \cdot \frac{\sum_{i=1}^{n} p_{it} \cdot q_{iT} \cdot \ ff_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

B. DAXplus® Seasonal Strategy

replacement can be determined, the component is removed without replacement.

**Ad-hoc Exit:** If an index member publicly announces that it will not pay dividends at the upcoming dividend date, it will be removed from the index at the next rebalancing date. If no replacement can be determined, no action is taken. If there is no rebalancing date between the announcement and the previously planned payout date the change will be executed with two full trading days' notice following the announcement.

Companies that are excluded from the parent index are deleted from DivDAX/ DivMSDAX as well with the same notice period (usually 2 trading days) only in case the deletion was triggered by an insolvency of the company or a breach of the following basic criteria:

- » minimum free float
- » listing on Regulated Market of FWB
- » continuous trading

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.



$$Index_t = \begin{cases} K_T \cdot \sum_{i=1}^n p_{it} \cdot q_T \cdot ff_{iT} \cdot c_{it} \\ \sum_{i=1}^n p_{i0} \cdot q_{i0} \end{cases} \\ + Base \\ Index_j \\ ; August and Septemb \\ ;$$

whereby:

 $c_{lt} = {\small \begin{tabular}{ll} Adjustment factor of company i at time t \\ ff_{lT} = & {\small \begin{tabular}{ll} Free float factor of share class i at time T \end{tabular}}$ 

n = Number of shares in the inde

 $p_{i0}$  = Closing price of share i on the trading day before the first inclusion in

the index

p<sub>it</sub> = Price of share i at time t

q<sub>i0</sub> = Number of shares of company i on the trading day before the first

inclusion in the index

q<sub>iT</sub> = 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

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

$$Index_{\tau} = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot (K_{\tau} \cdot \frac{ff_{\tau\tau} \cdot q_{\tau\tau}}{\displaystyle\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it})}{\displaystyle\sum_{i=1}^{n} p_{i0} \cdot \frac{q_{i0}}{\displaystyle\sum_{i=1}^{n} q_{i0}} \cdot 100} \cdot Base \quad = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot F_{i}}{A} \cdot Base$$

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

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

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

- Multiply the current price by the respective Fi weighting factor;
- take the sum of these products; and
- divide this by the base value (A) which remains constant until a modification in the index composition occurs. The Fi factors provide information on the number of shares required from each company to track the underlying index portfolio.
- 3.1.2 Computational Accuracy



The KT chaining factors are used and published as figures rounded to seven decimal places. The cit adjustment factors are included in the index formula on the basis of six decimal places. In the event of several adjustment events coinciding, such as "exdividend" and "ex subscription right "markdowns on the same day, only one single adjustment factor (six decimal places) is computed using the total markdown. Where several adjustment events are required for a single share but at different times, the factors rounded that way are multiplied by each other, and the product is rounded to six decimal places again. When determining the cit adjustment factor for subscription rights, the rights value is used as a figure with two decimal places. Only in the case of a capital increase out of company reserves, such rights value is not rounded at all. If a dividend disadvantage has to be prorated (e.g. for three months), the value of such disadvantage used for index calculation is rounded to two decimal places. The free float-factors are used as figures rounded to four decimal places. The indices are rounded to two decimal places and published accordingly. The Fi factors are rounded to five decimal places and published accordingly, changing with each share-specific adjustment.

#### 3.1.3 Cap Limit

On the day of regular quarterly chaining, the weighting of any single company in DivDAX®, DAXplus® Export Strategy and in DAXplus®Seasonal Strategy is capped to 10 percent of the index capitalization, respectively. For this purpose, the index capitalization is computed using the total number of all freely available shares. If any single class of shares accounts for a share of more than i.e. 10 percent in the respective capitalization, the number of shares used as weight for that company is reduced to 10 percent of the index capitalization (which is being reduced accordingly). Should yet another company exceed the cap limit after that, the capitalization is to be determined with which both companies would account for exactly 10 percent of the revised index capitalization. This procedure is repeated for as long as there is no company exceeding the respective cap limit. Then the next smaller integer of shares resulting in the desired capitalization is used as the new weight for calculating the index.



Where the capped share of a company falls or rises below or above 10 percent during the quarter, it may only be raised or lowered to 10 percent again on the following chaining date as the above-described procedure is repeated for every single chaining process.

### 3.1.4 New Listings and Deletions

Regular modifications to the index composition only occur if the ordinary chaining coincides with the actualization of the index composition at the same time. This process is based on the criteria as set out in: "Guide to the DAX Equity Indices".

#### 3.1.5 Chaining

Dividend payments and capital changes are initially reflected through an adjustment of the respective citadjustment factors. Quarterly chaining is carried out on the maturity date of the various equity index futures of Eurex, implying that on this day (i.e. on the third Friday of the last month of a quarter), the index is calculated for the last time on the basis of weights valid up to that point. The new weights will apply from the next trading day. A change in the index composition also becomes necessary in the event of an index component issue being or becoming subject to extraordinary circumstances, such as deletion, composition proceedings, bankruptcy, new admission, etc.

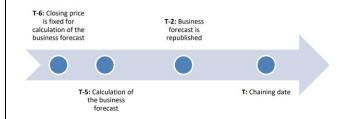
#### 3.1.6 Business Forecast

The business forecast is published at the quarterly underlying data announcement date, five trading days before the chaining date (i.e. at the second Friday in March, June, September, and December). It contains the composition, constituents weighting and cap factors for the new index compositions effective from the trading day following the third Friday of a review month.

The new number of shares, free float factors and closing prices used to determine the constituents weightings and cap factors are fixed at the trading day prior to the quarterly underlying data announcement date (T-6). For this purpose, the cit adjustment factors are set to 1.



The business forecast will be republished on the Wednesday before the chaining date (T-2), taking into account all corporate actions with ex-dates effective during the period between the quarterly underlying data announcement date and the chaining date (including delistings and IPOs) STOXX became aware of since the initial publication of the business forecast at the quarterly underlying data announcement date.



### 3.1.7 Ordinary Chaining

The ordinary chaining procedure takes place on a quarterly basis and encompasses the following measures:

- The number of shares and the respective free floatfactors are updated in accordance with the capital changes carried out.
- The accumulated income from distributions and capital changes is allocated to the index component issues according to the respective new weights. For this purpose, the individual cit adjustment factors are set to 1.
- The following applies for capital increases that are announced before the review effective date, but effective date for registration of new shares is after review implementation date: to account for the price adjustment, the change in share capital will be adjusted via the correction factor cit at ex-date of the capital increase; at Index review, cit is set to 1. The qit will be adjusted at the next following regular index review.
- A chaining factor is calculated to avoid a gap in the respective index.

If the ordinary chaining coincides with the update of the index composition at the same time, a change of the composition takes place additionally.



These measures help to prevent the weighting scheme from "ageing" due to capital changes and the accumulation of income.

Chaining is carried out in three steps:

a) Calculation of the index value on the chaining date according to the old weighting scheme

The following applies accordingly:

$$Index_{t} = K_{T} \cdot \frac{\sum_{i=1}^{n} p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

This value corresponds to the closing index published on the date of chaining, and is used with two decimal places (as published) for all subsequent calculations.

b) Computation of an interim value

The interim value is computed using the number of shares valid on the chaining date (qi,T+1) and the current free float factors (ffi,T+1). The cit adjustment factors are set to 1.

The following applies accordingly:

$$Interim \ value = \frac{\sum\limits_{i=1}^{n} p_{it} \cdot ff_{i,T+1} \cdot q_{i,T+1}}{\sum\limits_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

The interim value is used as an exact figure for subsequent calculations.

c) Calculation of the new chaining factor

The following applies accordingly:

$$K_{T+1} = \frac{Index_t}{Interim value}$$

After chaining, the index is computed on the basis of the new chaining factor (KT+1).

After calculation of the chaining factor, capital changes and dividend payments due on the date of chaining are taken into account via the cit factor.



The Fi weighting factors of the index formula based on relative weights are calculated as follows:

$$F_{i} = K_{T+1} \cdot \frac{ff_{i,T+1} \cdot q_{i,T+1} \cdot c_{it}}{\sum_{i=1}^{n} q_{io}} \cdot 100$$

### 3.1.8 Unscheduled Chaining

In the event of a change in the index composition, chaining is carried out in line with the procedure described in section 3.1.7 above, however, without adjustment to the number of shares and the various citfactors. Newly included issues are taken into account with their respective current number of shares.

Computation of the interim value is based on the component issues of the revised index portfolio.

$$Interim \ value = \frac{\sum_{i=1}^{n} p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

With the new chaining factor to result as

$$K_{T+1} = \frac{Index_t}{Interim \ value}$$

If a newly included company was not listed in the Frankfurt Stock Exchange's Prime Standard or General Standard segments on the base date, the number of shares (qi0) and the price (pi0) must be sourced from the Third Segment (Open Market – OTC market) as per that base date. If the company was not listed in Frankfurt at all, the corresponding figures from the respective domestic exchange are used for the index calculation instead. If the company was not listed at all on the base date of the index, the basis number of shares (qi0) corresponds to the number of shares at the time of admission to trading. The basis price (pi0) is the first price available at the time of such admission.

#### 1.9 DAXplus Maximum Dividend

With DAXplus® Maximum Dividend STOXX Ltd. calculates a strategy index that aims to maximize the dividend yield of the index portfolio. The index comprises 25 shares from the HDAX index which have the highest expected dividend yield.

### 2.9 DAXplus Maximum Dividend

9.2. DAXplus Maximum Dividend (applicable as of May 13th, 2024)

#### 9.2.1 OVERVIEW

With DAXplus Maximum Dividend STOXX Ltd. calculates a strategy index that aims to maximize the dividend yield of the index portfolio. The index



The index consists of the 25 companies in the HDAX Index which have the highest expected dividend yield and will pay a dividend within the forthcoming adjustment period. The expected dividend yield will be determined by the announced and the estimated dividend amount and the closing price of the stock at the time of selection.

The ordinary review of the index composition is conducted twice a year in May and November based on data from cut-off dates end of April and end of October. The review results are implemented at the 2ndFriday in May and November and become effective with start of trading on the following trading day. The HDAX® companies which will pay a dividend within the upcoming six months are eligible for inclusion. In addition companies must be among the 80% largest companies in terms of free float Market Cap and the 80% most liquid companies in terms of 3 month average-daily-trading-volume in HDAX®. This ensures a high liquidity of the index. Moreover, companies must rank in the top 80% in terms of price momentum in HDAX® universe excluding the companies with past price history of less than 12 months. Companies with past price history of less than 12 months (such as IPOs and spin-offs) are not eligible for inclusion.

The formula for calculating price momentum for share i is set out below:

$$PriceMomentum_i = \prod_{t=t_1}^{t=t_n} \left(\frac{P_{it}}{O_{it}}\right) - 1$$

where:

 $P_{it}$  = closing price of share i at trading day t

 $O_{it}$  = gross adjusted opening price of share i at trading day t

 $t_1$  = the first trading day of the 11<sup>th</sup> month preceding the month of the cut-off date

 $t_{\rm n}$  = the last trading day of the month preceding the month of the cut-off date

If less than 25 companies meet the above criteria, companies will be added from the current components of the Index that have (a) the highest dividend yield from the previous period, and (b) that meet the above criteria for largest companies, most liquid companies and highest price momentum. If 25 companies have not been selected, the companies will be added from the universe that have (a) the highest dividend yield from the previous period, and (b) that meet the above criteria for largest companies, most liquid companies and highest price momentum. By default, the additional companies added will inherit

comprises 25 shares from the HDAX index which have the highest expected dividend yield.

**Universe:** HDAX

**Weighting Scheme:** The index is price weighted with weighting factors derived from the expected dividend yield of the companies. The constituents of the index are weighted proportionally to their expected dividend yield: the higher the dividend yield, the higher the weight in the index.

Capping: The maximum weight of a company is subject to a double capping mechanism. In a first step, the maximum weight is capped to 10 percent. This procedure prevents that single issues dominate the index. Then, a liquidity test is conducted based on a reference portfolio with a notional amount of EUR 1bn. A component passes the test if the amount to be allocated does not exceed 2.5-times of the average-daily-trading volume of the company. A breach of this threshold leads to a weight capping equal to 2.5-times of the company's 3-month ADTV value.

Base value and dates: 100 on May 21, 1999.

Dissemination calendar: Xetra calendar

9.2.2 INDEX REVIEW

**Selection list:** The selection list is updated and published on the 4<sup>th</sup> trading day of May and November.

**Component selection:** The index consists of the 25 companies in the HDAX Index which have the highest expected dividend yield and will pay a dividend within the forthcoming adjustment period. The expected dividend yield will be determined by the announced and the estimated dividend amount and the closing price of the stock at the time of selection.

The HDAX companies which will pay a dividend within the upcoming six months are eligible for inclusion. In addition companies must be among the 80% largest companies in terms of free float Market Cap and the 80% most liquid companies in terms of 3 month average-daily-trading-volume in HDAX. This ensures a high liquidity of the index. Moreover, companies must rank in the top 80% in terms of price momentum in HDAX universe excluding the companies with past price history of



the smallest dividend yield value available within the composition of the current period.

If a member of the DAXplus Maximum Dividend index leaves the HDAX index or publicly announces that it will not pay a dividend on the following scheduled dividend date, it will be removed extraordinarily from the index. The replacement is determined as the best candidate on the most recent ranking list that has not cancelled its dividend distribution, will pay a dividend until the next regular rebalancing and meets the additional index criteria. If no replacement candidate exists in the case of removal from Index universe HDAX, the component is removed from DAXplus Maximum Dividend with no replacement. If no replacement candidate exists in case of a dividend cancelation, the component will remain in the index. The extraordinary review of the index composition will become effective on the trading day following the 2nd Friday of a month following the effective date of the removal from HDAX or announcement date of the dividend cancellation respectively, except the extraordinary review has been triggered by an insolvency of a company or the breach of one of the following basic criteria as described in section 5 of the Guide to the DAX Equity Indices:

- minimum free float
- · listing on Regulated Market of FWB
- · continuous trading

In those cases, the extraordinary review becomes effective with the same notice period as described in section 5 of the Guide to the DAX Equity Indices (usually 2 trading days).

The constituents of the index are weighted proportionally to their expected dividend yield: the higher the dividend yield, the higher the weight in the index. The maximum weight of a company is subject to a double capping mechanism. In a first step, the maximum weight is capped to 10 percent. This procedure prevents that single issues dominate the index. Then, a liquidity test is conducted based on a reference portfolio with a notional amount of EUR 1bn. A component passes the test if the amount to be allocated does not exceed 2.5-times of the average-daily-trading volume of the company. A breach of this threshold leads to a weight capping equal to 2.5-times of the company's 3-month ADTV value.

The base date of DAXplus® Maximum Dividend Index is 21 May 1999 with an index level of 100.

less than 12 months. Companies with past price history of less than 12 months (such as IPOs and spin-offs) are not eligible for inclusion.

The formula for calculating price momentum for share i is set out below:

$$PriceMomentum_i = \prod_{t=t_1}^{t=t_n} \left( \frac{P_{it}}{O_{it}} \right) - 1$$

where:

 $P_{it}$  = closing price of share i at trading day t  $O_{it}$  = gross adjusted opening price of share i at trading day t

 $t_1~$  = the first trading day of the 11<sup>th</sup> month preceding the month of the cut-off date  $t_n~$  = the last trading day of the month preceding the month of the cut-off date

If less than 25 companies meet the above criteria, companies will be added from the current components of the Index that have (a) the highest dividend yield from the previous period, and (b) that meet the above criteria for largest companies, most liquid companies and highest price momentum. If 25 companies have not been selected, the companies will be added from the universe that have (a) the highest dividend yield from the previous period, and (b) that meet the above criteria for largest companies, most liquid companies and highest price momentum. By default, the additional companies added will inherit the smallest dividend yield value available within the composition of the current period.

**Weights calculation:** The weighting factors are derived from the expected dividend yields by dividing the dividend yield  $DY_i$  by the current price pi and multiplying by the normalization factor of 1 billion. The expected dividend yield is calculated on the basis of announced or expected dividends and the closing price at the time of the ranking.

$$DY_i = \frac{\sum_t d_{i,t}}{p_i}$$

whereby:

 $d_{i,t}$  = announced or expected dividend payout for share i at time t

 $p_i$  = closing price of share i on the last trading day in April and October



DAXplus Maximum Dividend is calculated as price, performance and net return index. The calculation is performed every 15 seconds on the basis of the last available Xetra prices. DAXplus Maximum Dividend uses the values of the constituent elements (applying currency conversion, if necessary) in calculation of its index value and is expressed in Index points, reflecting the index-specific currency. 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. DAXplus Maximum Dividend is available in the currencies set forth in the Vendor Code Sheet which is available under https://www.daxindices.com/ressourcen.

### 3.5 DAXplus Maximum Dividend

3.5.1 Index formula

$$Index_{t} = K_{T} \cdot \frac{\sum_{i=1}^{n} p_{it} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Basis$$

 $c_{it}$  = Adjustment factor of company i at time t

n = Number of shares in the index

p<sub>it</sub> = Price of share of company i at time t

ρ<sub>iT</sub> = Closing price of share of company i at time t

q<sub>iT</sub> = weighting factor of company i at time T

t = calculation time of the index

K<sub>T</sub> = Index specific chaining factor valid as of chaining date T

T = Date of the last chaining

3.5.2 Determination of weighting factors

The weighting factors are derived from the expected dividend yields by dividing the dividend yield DYi by the current price pi and multiplying by the normalization factor of 1 billion. The expected dividend yield is calculated on the basis of announced or expected dividends and the closing price at the time of the ranking.

$$DY_i = \frac{\sum_t d_{i,t}}{p_i}$$

*t* = time within the upcoming sixmonth index calculation period

The index weights and weighting factors are calculated as follows:

$$w_i = \frac{\mathrm{DY}_i}{\sum \mathrm{DY}_i}$$

$$wf_{i,T} = \frac{w_i}{p_{i,T}} \cdot 1$$
 bn

whereby:

 $w_i$  = weight of share i

 $DY_i$  = expected dividend yield of share i  $p_{i,T}$  = closing price of share i at time of the rebalancing

**Review frequency:** The index is reviewed twice per year in May and November, based on data from cut-off dates end of April and end of October. The review results are implemented at the 2nd Friday in May and November and become Effective with start of trading on the following trading day.

#### 9.2.3 ONGOING MAINTENANCE

**Replacements:** If a component is deleted from DAXplus Maximum Dividend, the replacement is determined as the best candidate on the most recent selection list that has not cancelled its dividend distribution, will pay a dividend until the next regular rebalancing and meets the additional index criteria.

If no replacement candidate exists in the case of removal from index universe HDAX, the component is removed from DAXplus Maximum Dividend with no replacement. If no replacement candidate exists in case of a dividend cancelation, the component will remain in the index.

**Ad-hoc Exit:** If a member of the DAXplus Maximum Dividend index publicly announces that it will not pay a dividend on the following scheduled dividend date, it might be removed from the index Effective on the trading day following the 2<sup>nd</sup> Friday of a month following the Effective date of the dividend cancellation, if a suitable replacement candidate exists



whereby:

 $d_{i,t}$  = announced or expected dividend payout for share i at time t

pi = closing price of share i on the last trading day in April and October

t = time within the upcoming six-month index calculation period

The index weights and weighting factors are calculated as follows:

$$w_i = \frac{DY_i}{\sum DY_i}$$

$$q_{i,T} = \frac{w_i}{p_{i,T}} \cdot 1 \, bn$$

whereby

w<sub>i</sub> = weight of share i

DY<sub>i</sub> = expected dividend yield of share i

p<sub>i,T</sub> = closing price of share i at the trading day before the quarterly underlying data

The weighting factors qiT from each chaining remain stable for six month.

#### 3.5.3 Chaining

The chaining7 procedure for DAXplus® Maximum Dividend Index takes place as described in chapters 3.1.5, 3.1.7 and 3.1.8 with the deviation that the chaining is conducted biannually in May and November with chaining date being the 2nd Friday of the review month as described in chapter 2.9.

#### 1.7 DAXplus Minimum Variance Germany

The concept of DAXplus® Minimum Variance Germany is based on the modern portfolio theory. The weights are derived from an optimization that seeks to minimize variance of the portfolio of DAX constituents.

### 2.7 DAXplus Minimum Variance Germany

DAXplus Minimum Variance Index is based on the composition of the DAX Index.

The base date of DAXplus Minimum Variance Germany is the 21 September 2001, with a base level of 100. The chaining takes place on a quarterly basis (i.e. on the third Friday of the last month of a quarter). The optimal weights are calculated as described in chapter 3.4.1. In this context, it can occur that for some constituents, the optimization can result in weight of 0.00 percent. These constituents won't be considered in the index. For the portfolio variance calculation, the index uses daily stock returns over the last twelve months (cf. chapter 3.4.1).

The date, from which the daily returns are considered for the portfolio variance calculation, depends on the chaining date and is updated quarterly. Between two chaining dates the weighting factors qiT, that are derived out of the weights (cf. chapter 3.4.2) are kept constant. DAXplus Minimum Variance Germany is calculated as performance and price index in real time every 15 seconds, between 9.00 a.m. and 5.55 p.m.

If a company is deleted from HDAX, it is deleted from DAXplus Maximum Dividend as well on the trading day following the 2nd Friday of a month following the Effective date of the removal from HDAX, except the deletion is due to an insolvency of a company or the breach of one of the following basic criteria as described in chapter 5.4:

- » minimum free float
- » listing on Regulated Market of FWB
- » continuous trading

In those cases, the deletion becomes Effective with the same notice period as described in section 5.4.2.

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

#### 10. DAX Risk Based Indices

## **10.1. DAXplus Minimum Variance Germany 10.1.1 OVERVIEW**

The concept of DAXplus Minimum Variance Germany is based on the modern portfolio theory. The weights are derived from an optimization that seeks to minimize variance of the portfolio of DAX constituents.

**Universe: DAX** 

**Weighting Scheme:** The index is price weighted with weighting factors derived from an optimization that minimizes the variance of the index portfolio.

**Base value and dates:** 100 on September 21, 2001.

Dissemination calendar: Xetra calendar

10.1.2 INDEX REVIEW

**Weights calculation:** It can occur that for some constituents, the optimization can result in weight of 0.00 percent. These constituents won't be considered in the index. For the portfolio variance calculation, the index uses daily stock returns over the last twelve months.



CET in Euro, US-Dollar and British Pound. The calculation is based on the last available Xetra® price data. DAXplus Minimum Variance Germany uses the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index points, reflecting the index-specific 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.

## 3.4 DAXplus Minimum Variance and Maximum Sharpe Ratio Germany

3.4.1 Weight Calculation

The weight calculation of DAXplus® Minimum Variance Germany and DAXplus® Maximum Sharpe RatioGermany takes place in three steps.

Step 1)

The daily returns over the last twelve months are calculated as follows for each constituent:

$$\begin{array}{lll} \lambda_{ik} &= In(\frac{Share_{ik}}{Share_{ik-1}}) \\ & & \\ \text{whereby:} \\ \lambda_{ik} &= & \text{daily return of share i = 1, ..., 40 at the time k = 1, ..., HT} \\ & & \\ Share_{ik} &= & \text{closing price of share i = 1, ..., 40 at the time k = 2, ..., HT} \\ k &= & & \text{trading day index} \\ \text{HT} &= & & \text{number of trading days over the last twelve months} \end{array}$$

Based on the returns, calculated in step 1 for all DAX constituents, the variances and the covariances are

$$\sigma_{i} = \sqrt{HT \cdot \frac{1}{HT - 1} \sum_{k=1}^{HT} \left( \lambda_{ik} - \overline{\lambda}_{i} \right) \right)^{2}}$$

where:

 $\sigma_{\rm i}$  = standard deviation of share i =1, ..., 40

 $\overline{\lambda_i}$  = average yield of share i =1, ..., 40

$$Cov_{i,j} = HT \cdot \frac{1}{HT - 1} \sum_{k=1}^{HT} \left( \lambda_{ik} - \overline{\lambda_i} \right) \cdot \left( \lambda_{jk} - \overline{\lambda_j} \right)$$

whereby

 $CoV_{i,j}$  = covariance<sup>5</sup> of share i=1, ..., 40 to share j=1, ..., 40

Step 3)

Based on the variances and covariances calculated in step 2, the optimized portfolio weights can be calculated. For DAXplus Minimum Variance Germany the function to be optimized looks as follows:

$$\sigma^{2}_{Portfollo} = \sum_{i=1}^{40} \sum_{j=1}^{40} x_{i} \cdot x_{j} \cdot Cov_{i,j} = \sum_{i=1}^{40} \sum_{j=1}^{40} x_{i} \cdot x_{j} \cdot \sigma_{i} \cdot \sigma_{j} \cdot \rho_{i,j}$$

x<sub>i</sub> = weight of share i =1, ..., 40 in DAX portfolio

 $\rho_{i,j}$  = correlation coefficient of share i =1, ..., 40 to share j =1, ..., 40

 $\sigma^2_{\text{Portfolio}}$  = variance of DAX portfolio

The correlation coefficient describes the reaction of a share to the price change of another share in the

The date, from which the daily returns are considered for the portfolio variance calculation, depends on the review date and is updated quarterly.

The weight calculation takes place in three steps.

Step 1)

The daily returns over the last twelve months are calculated as follows for each constituent:

$$\lambda_{ik} = ln(\frac{Share_{ik}}{Share_{ik-1}})$$

whereby:

 $\lambda_{ik}$  = daily return of share i = 1, ..., 40 at the time k =1, ..., HT

 $Share_{ik}$  = closing price of share i =1,

..., 40 at the time k=2, ..., HT

k =trading day index

HT = number of trading days over the
last twelve months

Step 2)

Based on the returns, calculated in step 1 for all DAX constituents, the variances and the covariances are calculated as follows:

$$\sigma_i = \sqrt{HT \cdot \frac{1}{HT - 1} \sum_{k=1}^{HT} (\lambda_{ik} - \overline{\lambda}_i))^2}$$

where:

 $\sigma_i$  = standard deviation of share i =1, ..., 40

 $\overline{\lambda}_i$  = average yield of share i =1, ..., 40

$$Cov_{i,j} = HT \cdot \frac{1}{HT - 1} \sum_{k=1}^{HT} (\lambda_{ik} - \overline{\lambda_i}) \cdot (\lambda_{jk} - \overline{\lambda_j})$$

whereby:

 $Cov_{i,j} = covariance^3$  of share  $i=1,\dots,40$  to share  $j=1,\dots,40$ 

In case i = j the covariance is the same as the variance of share i.



same portfolio and can be calculated as follows:

$$\rho_{i,j} = \frac{\mathsf{Cov}_{i,j}}{\sigma_i \cdot \sigma_j}$$

For DAXplus Maximum Sharpe Ratio Germany the function to be optimized applies as follows:

$$sr_p = \frac{r_p - r_f}{\sigma_{Portfolio}}$$

The Sharpe ratio reflects the difference between return of the portfolio and the risk-free return in relation to the portfolios standard deviation.

$$\mathbf{r}_{\mathbf{p}} = \pi_{1} \cdot \mathbf{X}_{1} + \dots + \pi_{n} \cdot \mathbf{X}_{n}$$

$$\pi_{\rm i} = \ln\!\!\left(\frac{\rm Share_{\rm lEndoftheyear}}{\rm Share_{\rm lBeginningoftheyear-1}}\right)$$

 $\pi_i$  = annual return of constituent i =1, ..., 40

r<sub>p</sub> = designated return for the entire portfolio

$$\sigma_{\mathsf{Portfolio}} = \sqrt{\sigma^2}_{\mathsf{Portfolio}}$$

 $\sigma_{\mathsf{Portfolio}}$  = standard deviation of the entire portfolio

rf = risk- free return on capital market Following the optimization models with objective function and constraints:

A) DAXplus Minimum Variance Germany:

$$min \quad \sigma^{2}_{Portfolio} = \sum_{i=1}^{40} \sum_{j=1}^{40} x_{i} \cdot x_{j} \cdot \sigma_{i} \cdot \sigma_{j} \cdot \rho_{i,j}$$

B) DAXplus Maximum Sharpe Ratio Germany:

$$\text{max } \text{sr}_{\text{p}} = \frac{-r_{\text{p}} - r_{\text{f}}}{\sigma_{\text{Portfolio}}}$$

The objective functions are optimized subject to the following constraints:

Constraint 1: 
$$\sum_{i=1}^{40} x_i = 1$$

The first constraint indicates that the sum of the weights in the portfolio must be equal to 100 percent. For some constituents, the optimization can result in weight of 0.00 percent. These constituents won't be considered in the index.

Constraint 2: 
$$xi \ge 0$$
 for (i=1, ..., 40)

The second constraint completes the mathematical model taking into account the non-negativity of the weight as well as exclusion of short sales.

*Constraint* 3: 
$$xi$$
 ≤ 0.1for (i=1, ..., 40)

The third constraint makes sure that the weight of each constituent is restricted to 10 percent.

In case of negative value for the objective function of DAXplus Maximum Sharpe Ratio Germany, the

Step 3)

Based on the variances and covariances calculated in step 2, the optimized portfolio weights can be calculated. The function to be optimized looks as follows:

$$\sigma^{2}_{Portfolio} = \sum_{i=1}^{40} \sum_{j=1}^{40} w_{i} \cdot w_{j} \cdot Cov_{i,j}$$

$$= \sum_{i=1}^{40} \sum_{j=1}^{40} w_{i} \cdot w_{j} \cdot \sigma_{i} \cdot \sigma_{j} \cdot \rho_{i,j}$$

 $w_i$  = weight of share i =1, ..., 40 in DAX portfolio

 $ho_{i,j}$  = correlation coefficient of share  $i=1,\dots,40$  to share  $j=1,\dots,40$   $\sigma^2_{Portfolio}$  = variance of DAX portfolio

The correlation coefficient describes the reaction of a share to the price change of another share in the same portfolio and can be calculated as follows:

$$\rho_{i,j} = \frac{Cov_{i,j}}{\sigma_i \cdot \sigma_i}$$

Following the optimization model with objective function and constraints:

$$min \ \sigma^{2}_{Portfolio} = \sum_{i=1}^{40} \sum_{j=1}^{40} w_{i} \cdot w_{j} \cdot \sigma_{i} \cdot \sigma_{j} \cdot \rho_{i,j}$$

The objective function is optimized subject to the following constraints:

Constraint 1: 
$$\sum_{i=1}^{40} w_i = 1$$

The first constraint indicates that the sum of the weights in the portfolio must be equal to 100 percent. For some constituents, the optimization can result in weight of 0.00 percent. These constituents won't be considered in the index.

Constraint 2: 
$$w_i \ge 0$$
 for (i=1, ..., 40)



constituents from the last index composition are considered and weighted equally.

### 3.4.2 Weighting Factors Calculation

The weighting factors qiT are derived using the weights which were determined in chapter 3.4.1. For each constituent the weight xi is multiplied by the scale factor 1 bn. and divided by the current price pit. Reference date for the calculation is the last trading day of the month preceding the chaining month. The calculation of the weighting factors (qiT) will be carried out using the closing prices of this date. The determined weighting factors become effective for the index calculation on the next chaining Friday.

$$q_{iT}^{} = \frac{x_i^{}}{p_{it}^{}} \cdot 1 \ bn.$$

The scale factor 1 bn. is defined as the sum of the product of the prices pit and weighting factors qiT. The weighting factors are kept constant for the following three months after the chaining procedure.

#### 3.4.3 Index Formula

The weighting factors qiT are kept constant between two chaining dates and DAXplus® Minimum Variance Germany and DAXplus® Maximum Sharpe Ratio Germany are calculated as follows:

$$Index_{t} = K_{T} \cdot \frac{\sum\limits_{i=1}^{n} p_{it} \cdot q_{iT} \cdot c_{it}}{\sum\limits_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

whereby:

cit = Adjustment factor of company i at time t n = Number of shares in the index

pi0 = Closing price of share of company i on the trading day before the first inclusion in the index

pit = Price of share of company i at time t

qi0 = weighting factor of company i on the trading day before the first inclusion in the index

qiT = weighting factor of company i at time T

t = calculation time of the index

KT = Index-specific chaining factor valid as of chaining date T

T = Date of the last chaining

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

The second constraint completes the mathematical model taking into account the non-negativity of the weight as well as exclusion of short sales.

*Constraint* 3: 
$$w_i \le 0.1$$
 for (i=1, ..., 40)

The third constraint makes sure that the weight of each constituent is restricted to 10 percent.

### **Weighting Factors Calculation**

The weighting factors  $wf_{iT}$  are derived using the weights which were determined in the section above. For each constituent the weight  $w_i$  is multiplied by the scale factor 1 bn. and divided by the current price  $p_{it}$ . Reference date for the calculation is the last trading day of the month preceding the review month. The calculation of the weighting factors ( $wf_{iT}$ ) will be carried out using the closing prices of this date. The determined weighting factors become Effective on the review Effective date.

$$wf_{iT} = \frac{w_i}{p_{it}} * 1bn.$$

The scale factor 1 bn. is defined as the sum of the product of the prices  $p_{it}$  and weighting factors  $wf_{iT}$ .

**Review frequency:** The index is reviewed on a quarterly basis.

### **10.1.3 ONGOING MAINTENANCE**

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.



$$Index_{t} = \frac{\sum_{i=1}^{n} p_{it} \cdot (K_{T} \cdot \frac{Q_{iT}}{\sum_{i=1}^{n} Q_{i0}} \cdot 100 \cdot c_{it})}{\sum_{i=1}^{n} p_{i0} \cdot \frac{Q_{i0}}{\sum_{i}^{n} Q_{i0}} \cdot 100} \cdot Base \quad = \frac{\sum_{i=1}^{n} p_{it} \cdot F_{i}}{A} \cdot Base$$

whereby:

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

and

$$F_i = K_T \cdot \frac{q_{iT}}{\sum\limits_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it}$$

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

- Multiply the current price by the respective Fi weighting factor;
- take the sum of these products; and
- divide this by the base value (A) which remains constant until a modification in the index composition occurs

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

#### 3.4.4 Computational Accuracy

DAXplus® Minimum Variance Germany and DAXplus® Maximum Sharpe Ratio Germany are published rounded to two decimal places. All factors which are required for the calculation are rounded to two decimal places as well. All DAX® adjustment factors are described in the "Guide to the DAX Equity Indices".

#### 3.4.5 Chaining

The chaining6 procedure for DAXplus® Minimum Variance Germany and DAXplus® Maximum Sharpe Ratio Germany takes place as described in chapters 3.1.5, 3.1.6, 3.1.7 and 3.1.8, with the special focus on actualization of the weights xi and weighting factors qiT as defined in chapter 3.4.1 in step 3 and in chapter 3.4.2.

### 1.8 DAXplus Maximum Sharpe Ratio Germany

The concept of DAXplus® Maximum Sharpe Ratio Germany is based on the modern portfolio theory. The weights are derived from an optimization that seeks to maximize the Sharpe ratio of the portfolio of DAX constituents.

#### 2.8 DAXplus Maximum Sharpe Ratio Germany

### **10.2 DAXplus Maximum Sharpe Ratio Germany 10.2.1 OVERVIEW**

The concept of DAXplus Maximum Sharpe Ratio Germany is based on the modern portfolio theory. The weights are derived from an optimization that seeks to maximize the Sharpe ratio of the portfolio of DAX constituents.

Universe: DAX



DAXplus® Maximum Sharpe Ratio Germany is based on the composition of the DAX®

-Index, where weights are derived from an optimization that seeks to maximize the portfolio Sharpe ratio.

The base date of DAXplus Maximum Sharpe Ratio Germany is the 21 September 2001, with a base level of 100.

The chaining takes place on a quarterly basis (i.e. on the third Friday of the last month of a quarter). The weightings are calculated in line with the methodology applied to DAXplus Minimum Variance Germany (cp. chapters 2.7 and 3.4.1). Between two chaining dates the weighting factors qiT which are derived out of the weight (cp. chapter 3.4.2) are kept constant. DAXplus Maximum Sharpe Ratio Germany is calculated as performance and price index in real time every 15 seconds, between 9.00 a.m. and 5.55 p.m. CET in Euro, US-Dollar and British Pound. The calculation is based on the last available Xetra® price data. DAXplus Maximum Sharpe Ratio Germany uses the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index points, reflecting the index-specific 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.

# **3.4 DAXplus Minimum Variance and Maximum Sharpe Ratio Germany**

3.4.1 Weight Calculation

The weight calculation of DAXplus® Minimum Variance Germany and DAXplus® Maximum Sharpe Ratio

Germany takes place in three steps.

Step 1)

The daily returns over the last twelve months are calculated as follows for each constituent:

$$\lambda_{ik} = ln(\frac{Share_k}{Share_{k-1}})$$

**Weighting Scheme:** The indices are price weighted with weighting factors derived from an optimization that maximizes the Sharpe ratio of the index portfolio.

**Base value and dates:** 100 on September 21, 2001.

Dissemination calendar: Xetra calendar

### 10.2.2 INDEX REVIEW

**Weights calculation:** It can occur that for some constituents, the optimization can result in a weight of 0.00 percent. These constituents won't be considered in the index. For the portfolio variance calculation, the index uses daily stock returns over the last twelve months.

The date, from which the daily returns are considered for the portfolio variance calculation, depends on the review date and is updated quarterly.

The weight calculation of DAXplus Maximum Sharpe Ratio Germany takes place in three steps.

Step 1)

The daily returns over the last twelve months are calculated as follows for each constituent:

$$\lambda_{ik} = ln(\frac{Share_{ik}}{Share_{ik-1}})$$

whereby:

 $\lambda_{ik} = \text{daily return of share } i = 1, ..., 40 \text{ at the time } k = 1, ..., HT$ 

 $Share_{ik}$  = closing price of share i = i

1, ..., 40 at the time k=2,...,HT

k = trading day index

HT = number of trading days over the
last twelve months

Step 2)

Based on the returns, calculated in step 1 for all DAX constituents, the variances and the covariances are calculated as follows:



whereby

 $\lambda_{ik}$  = daily return of share i = 1, ..., 40 at the time k =1, ..., HT

 $Share_{ik}$  = closing price of share i = 1, ..., 40 at the time k=2, ..., HT

k = trading day index

HT = number of trading days over the last twelve months

Step 2)

Based on the returns, calculated in step 1 for all DAX constituents, the variances and the covariances are calculated as follows:

$$\sigma_{i} = \sqrt{HT \cdot \frac{1}{HT - 1} \sum_{k=1}^{HT} \left( \lambda_{ik} - \overline{\lambda}_{i} \right)^{2}}$$

where:

 $\sigma_i$  = standard deviation of share i =1, ..., 40

 $\overline{\lambda_i}$  = average yield of share i =1, ..., 40

$$Cov_{i,j} = HT \cdot \frac{1}{HT-1} \sum_{k=1}^{HT} \left( \lambda_{ik} - \overline{\lambda_i} \right) \cdot \left( \lambda_{jk} - \overline{\lambda_j} \right)$$

whereby:

 $CoV_{i,j}$  = covariance<sup>5</sup> of share i=1, ..., 40 to share j=1, ..., 40

Step 3)

Based on the variances and covariances calculated in step 2, the optimized portfolio weights can be calculated. For DAXplus Minimum Variance Germany the function to be optimized looks as follows:

$$\sigma^2_{Portfolio} = \sum_{i=1}^{40} \sum_{j=1}^{40} x_i \cdot x_j \cdot Cov_{i,j} = \sum_{i=1}^{40} \sum_{j=1}^{40} x_i \cdot x_j \cdot \sigma_i \cdot \sigma_j \cdot \rho_{i,j}$$

X<sub>i</sub> = weight of share i =1, ..., 40 in DAX portfolio

 $\rho_{i,j}$  = correlation coefficient of share i =1, ..., 40 to share j =1, ..., 40

 $\sigma^2_{\text{Portfolio}}$  = variance of DAX portfolio

The correlation coefficient describes the reaction of a share to the price change of another share in the same portfolio and can be calculated as follows:

$$\rho_{i,j} = \frac{\mathsf{Cov}_{i,j}}{\sigma_i \cdot \sigma_i}$$

For DAXplus Maximum Sharpe Ratio Germany the function to be optimized applies as follows:

$$sr_{p} = \frac{r_{p} - r_{f}}{\sigma_{Portfolio}}$$

The Sharpe ratio reflects the difference between return of the portfolio and the risk-free return in relation

to the portfolios standard deviation.

$$\mathbf{r}_{\mathbf{p}} = \pi_{\mathbf{1}} \cdot \mathbf{X}_{\mathbf{1}} + \dots + \pi_{\mathbf{n}} \cdot \mathbf{X}_{\mathbf{n}}$$

$$\pi_{i} = In \left( \frac{Share_{Endoftheyear}}{Share_{Beginningoftheyear-1}} \right)$$

 $\pi_i$  = annual return of constituent i =1, ..., 40

r<sub>p</sub> = designated return for the entire portfolio

$$\sigma_{\mathsf{Portfolio}} = \sqrt{\sigma^2}_{\mathsf{Portfolio}}$$

 $\sigma_{\mathsf{Portfolio}}$  = standard deviation of the entire portfolio

rf = risk- free return on capital market

$$\sigma_i = \sqrt{HT \cdot \frac{1}{HT - 1} \sum_{k=1}^{HT} (\lambda_{ik} - \overline{\lambda}_i))^2}$$

where:

 $\sigma_i$  = standard deviation of share i =1, ...,

40

 $\overline{\lambda}_i$  = average yield of share i =1, ..., 40

$$Cov_{i,j} = HT \cdot \frac{1}{HT - 1} \sum_{k=1}^{HT} (\lambda_{ik} - \overline{\lambda_i}) \cdot (\lambda_{jk} - \overline{\lambda_j})$$

whereby:

 $Cov_{i,j}$  = covariance<sup>4</sup> of share i=1, ..., 40 to share j=1, ..., 40

Step 3)

Based on the variances and covariances calculated in step 2, the optimized portfolio weights can be calculated. The function to be optimized applies as follows:

$$sr_p = \frac{r_p - r_f}{\sigma_{Portfolio}}$$

The Sharpe ratio reflects the difference between return of the portfolio and the risk-free return in relation to the portfolios standard deviation.

$$r_p = \pi_1 \cdot x_1 + \dots + \pi_n \cdot x_n$$

$$\pi_{i} = ln \left( \frac{Share_{i_{Endoftheyear}}}{Share_{i_{Beginning of the vear-1}}} \right)$$

 $\pi_i$  = annual return of constituent i =1, ..., 40

 $r_p$  = designated return for the entire portfolio

$$\sigma_{Portfolio} = \sqrt{\sigma_{Portfolio}^2}$$

 $\sigma_{Portfolio}$  = standard deviation of the

entire portfolio

 $r_f$  = risk- free return on capital market

<sup>&</sup>lt;sup>4</sup> In case i=i the covariance is the same as the variance of share i.



Following the optimization models with objective function and constraints:

A) DAXplus Minimum Variance Germany:

$$min \quad \sigma^{2}_{Portfolio} = \sum_{i=1}^{40} \sum_{j=1}^{40} x_{i} \cdot x_{j} \cdot \sigma_{i} \cdot \sigma_{j} \cdot \rho_{i,j}$$

B) DAXplus Maximum Sharpe Ratio Germany:

$$\max \ \mathsf{sr}_{\mathsf{p}} = \frac{\mathsf{r}_{\mathsf{p}} - \mathsf{r}_{\mathsf{f}}}{\sigma_{\mathsf{Portfolio}}}$$

The objective functions are optimized subject to the following constraints:

Constraint 1:  $\sum_{i=1}^{40} x_i = 1$ 

The first constraint indicates that the sum of the weights in the portfolio must be equal to 100 percent. For some constituents, the optimization can result in weight of 0.00 percent. These constituents won't be considered in the index.

Constraint 2:  $xi \ge 0$  for (i=1, ..., 40)

The second constraint completes the mathematical model taking into account the non-negativity of the weight as well as exclusion of short sales.

*Constraint* 3: xi ≤ 0.1for (i=1, ..., 40)

The third constraint makes sure that the weight of each constituent is restricted to 10 percent. In case of negative value for the objective function of DAXplus Maximum Sharpe Ratio Germany, the constituents from the last index composition are considered and weighted equally.

#### 3.4.2 Weighting Factors Calculation

The weighting factors qiT are derived using the weights which were determined in chapter 3.4.1. For each constituent the weight xi is multiplied by the scale factor 1 bn. and divided by the current price pit.Reference date for the calculation is the last trading day of the month preceding the chaining month. The calculation of the weighting factors (qiT) will be carried out using the closing prices of this date. The determined weighting factors become effective for the index calculation on the next chaining Friday.

$$q_{iT} = \frac{x_i}{p_{it}} \cdot 1 \text{ bn.}$$

The scale factor 1 bn. is defined as the sum of the product of the prices pit and weighting factors qiT. The weighting factors are kept constant for the following three months after the chaining procedure.

#### 3.4.3 Index Formula

The weighting factors qiT are kept constant between two chaining dates and DAXplus® Minimum Variance

Following the optimization model with objective function and constraints:

$$max \quad s r_p = \frac{r_p - r_f}{\sigma_{Portfolio}}$$

The objective function is optimized subject to the following constraints:

Constraint 1: 
$$\sum_{i=1}^{40} w_i = 1$$

The first constraint indicates that the sum of the weights in the portfolio must be equal to 100 percent. For some constituents, the optimization can result in weight of 0.00 percent. These constituents won't be considered in the index.

Constraint 2: 
$$w_i \ge 0$$
 for (i=1, ..., 40)

The second constraint completes the mathematical model taking into account the non-negativity of the weight as well as exclusion of short sales.

*Constraint* 3: 
$$w_i \le 0.1$$
 for (i=1, ..., 40)

The third constraint makes sure that the weight of each constituent is restricted to 10 percent.

In case of negative value for the objective function, the constituents from the last index composition are considered and weighted equally.

### **Weighting Factors Calculation**

The weighting factors  $wf_{iT}$  are derived using the weights which were determined in section above. For each constituent the weight  $w_i$  is multiplied by the scale factor 1 bn. and divided by the current price  $p_{it}$ . The calculation of the weighting factors  $(wf_{iT})$  will be carried out using the closing prices of the Thursday preceding the second Friday of the review month. The determined weighting factors become Effective on the review Effective date.

$$wf_{iT} = \frac{w_i}{p_{it}} * 1bn.$$

The scale factor 1 bn. is defined as the sum of the product of the prices  $p_{it}$  and weighting factors  $wf_{iT}$ .



Germany and DAXplus® Maximum Sharpe Ratio Germany are calculated as follows:

$$Index_{t} = K_{T} \cdot \frac{\sum\limits_{i=1}^{n} p_{it} \cdot q_{iT} \cdot c_{it}}{\sum\limits_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

whereby:

cit = Adjustment factor of company i at time t
n = Number of shares in the index
pi0 = Closing price of share of company i on the
trading day before the first inclusion in the index
pit = Price of share of company i at time t
qi0 = weighting factor of company i on the trading day
before the first inclusion in the index
qiT = weighting factor of company i at time T
t = calculation time of the index
KT = Index-specific chaining factor valid as of chaining

T = Date of the last chaining

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

$$Index_t = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot (K_T \cdot \frac{q_{iT}}{\displaystyle\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it})}{\displaystyle\sum_{i=1}^{n} p_{i0} \cdot \frac{q_{i0}}{\displaystyle\sum_{i=1}^{n} q_{i0}} \cdot 100} \cdot Base \quad = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot F_i}{A} \cdot Base$$

whereby:

date T

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

and

$$F_i = K_T \cdot \frac{q_{iT}}{\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_i$$

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

- Multiply the current price by the respective Fi weighting factor;
- take the sum of these products; and
- divide this by the base value (A) which remains constant until a modification in the index composition occurs.

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

3.4.4 Computational Accuracy
DAXplus® Minimum Variance Germany and
DAXplus®Maximum Sharpe Ratio Germany are
published rounded to two decimal places.

**Review frequency:** The index is reviewed on a quarterly basis.

#### 10.2.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off stock will be deleted at the close of the day it starts to trade.



All factors which are required for the calculation are rounded to two decimal places as well.

All DAX® adjustment factors are described in the "Guide to the DAX Equity Indices".

### 3.4.5 Chaining

The chaining6 procedure for DAXplus® Minimum Variance Germany and DAXplus® Maximum Sharpe Ratio Germany takes place as described in chapters 3.1.5, 3.1.6, 3.1.7 and 3.1.8, with the special focus on actualization of the weights xi and weighting factors qiT as defined in chapter 3.4.1 in step 3 and in chapter 3.4.2.

### 1.3 DAXplus Export Strategy

The DAXplus® Export Strategy index consists of strong exporting companies, who thus benefit from strong

growth outside the German economy. The index comprises the ten component issues from the DAX® and MDAX® indices with the highest proportion of exports in their revenues.

#### 2.3 DAXplus Export Strategy

The index composition is updated once a year, on the chaining date in September. Ten component issues of

the DAX® and MDAX® indices are chosen, selecting those companies that, within each index, have derived the

highest proportion of their revenues outside Germany (based on figures disclosed in their annual reports for

the preceding business year). The Banks and Financial Services sectors are not considered for this index.

The index is weighted according to free float market capitalization, where the maximum weight assigned

per component is capped at 10% at rebalancing. Since the index has a fixed number of components of 10,

the outcome of this is the equal weighting of all index constituents. The base date of DAXplus® Export Strategy is 18 March 2002, with a base level of 100.

DAXplus Export Strategy is calculated both as a price and as a performance index. The price index is

#### 11. DAX Theme Indices

### 11.1. DAXplus Export Strategy

#### 11.1.1 OVERVIEW

The DAXplus Export Strategy index consists of strong exporting companies, who thus benefit from strong growth outside the German economy. The index comprises the ten component issues from the DAX and MDAX indices with the highest proportion of exports in their revenues.

**Universe:** DAX and MDAX

**Weighting Scheme:** The index is equal weighted.

Base value and dates: 100 on March 18, 2002.

**Dissemination calendar:** Xetra calendar

#### 11.1.2 INDEX REVIEW

**Selection list:** The selection list is updated and published once per year on the 4<sup>th</sup> trading day of September. The cut-off date is the last trading day of August.

**Component selection:** Ten component issues of the DAX and MDAX indices are chosen, selecting those companies that, within each index, have derived the highest proportion of their revenues outside Germany (based on figures disclosed in their annual reports for the preceding business year). The Banks and Financial Services sectors are not considered for this index.

**Review frequency:** The index is reviewed once per year in September. Rebalancing takes place on a quarterly basis.



calculated every 15 seconds and the performance index end of day, using the last available Xetra® price data

for companies quoted in the Prime Standard segment. DAXplus Export Strategy index uses the values of the

constituent elements (applying currency conversion, if necessary) in calculation its index value and is

expressed in Index points, reflecting the index-specific currency. 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.

DAXplus Export Strategy index is available in the currencies set forth in the Vendor Code Sheet which is

available under https://www.dax-indices.com/ressourcen.

# 3.1 DivDAX, DivMSDAX, DAXplus Seasonal Strategy and DAXplus Export Strategy

#### 3.1.1 Index Formulas

The indices are conceived according to the Laspeyres formula set out below:

A. DivDAX® and DAXplus® Export Strategy

$$Index_{t} = K_{T} \cdot \frac{\sum_{i=1}^{n} p_{it} \cdot q_{iT} \cdot ff_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

B. DAXplus® Seasonal Strategy

**Weighting factors:** All components are equalweighted on a quarterly basis. The weightings are published on the second Friday of each quarter, one week prior to quarterly review implementation using Thursday's closing prices.

Weighting factor = (100,000,000,000 / closing price of the stock in EUR) and rounded to integers.

#### 11.1.3 ONGOING MAINTENANCE

Replacements: A company that is deleted from DAXplus Export Strategy replaced by the next highest ranking company that is still part of DAX or MDAX according to the most recent DAXplus Export Strategy selection list. The replacement will enter the index with the same weight the old component had, based on the closing price of four trading days prior to the Effective date of the replacement.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.



$$Index_t = \begin{cases} K_T \cdot \frac{\displaystyle \sum_{i=1}^n p_{it} \cdot q_{iT} \cdot ff_{iT} \cdot c_{it}}{\displaystyle \sum_{i=1}^n p_{i0} \cdot q_{i0}} \cdot Base & ; October until July \\ Index_t = \begin{cases} (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)^n & (1 - i)^n & (1 - i)^n \\ (1 - i)$$

whereby:

n = Number of shares in the index

p<sub>10</sub> = Closing price of share i on the trading day before the first inclusion in

the index

Dit = 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<sub>T</sub> = Index-specific chaining factor valid as of chaining date T

T = Date of the last chaining

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

$$Index_{\tau} = \frac{\sum_{i=1}^{n} p_{it} \cdot (K_{T} \cdot \frac{ff_{TT} \cdot q_{iT}}{\sum_{i=1}^{n} q_{i0}} \cdot 100 \cdot c_{it})}{\sum_{i=1}^{n} p_{i0} \cdot \frac{q_{i0}}{\sum_{i=1}^{n} q_{i0}} \cdot 100} \cdot Base = \frac{\sum_{i=1}^{n} p_{it} \cdot F_{i}}{A} \cdot Base$$

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

$$\text{and: } F_i = K_T \cdot \frac{f f_{iT} \cdot q_{iT}}{\sum\limits_{i=1}^n q_{i0}} \cdot 100 \cdot c_i$$

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

- Multiply the current price by the respective Fi weighting factor;
- take the sum of these products; and
- divide this by the base value (A) which remains constant until a modification in the index composition occurs. The Fi factors provide information on the number of shares required from each company to track the underlying index portfolio.

### 3.1.2 Computational Accuracy

The KT chaining factors are used and published as figures rounded to seven decimal places. The cit adjustment factors are included in the index formula



on the basis of six decimal places. In the event of several adjustment events coinciding, such as "exdividend" and "ex subscription right "markdowns on the same day, only one single adjustment factor (six decimal places) is computed using the total markdown. Where several adjustment events are required for a single share but at different times, the factors rounded that way are multiplied by each other, and the product is rounded to six decimal places again. When determining the cit adjustment factor for subscription rights, the rights value is used as a figure with two decimal places. Only in the case of a capital increase out of company reserves, such rights value is not rounded at all. If a dividend disadvantage has to be prorated (e.g. for three months), the value of such disadvantage used for index calculation is rounded to two decimal places. The free float-factors are used as figures rounded to four decimal places. The indices are rounded to two decimal places and published accordingly. The Fi factors are rounded to five decimal places and published accordingly, changing with each share-specific adjustment.

### 3.1.3 Cap Limit

On the day of regular quarterly chaining, the weighting of any single company in DivDAX®, DAXplus® Export Strategy and in DAXplus®Seasonal Strategy is capped to 10 percent of the index capitalization, respectively. For this purpose, the index capitalization is computed using the total number of all freely available shares. If any single class of shares accounts for a share of more than i.e. 10 percent in the respective capitalization, the number of shares used as weight for that company is reduced to 10 percent of the index capitalization (which is being reduced accordingly). Should yet another company exceed the cap limit after that, the capitalization is to be determined with which both companies would account for exactly 10 percent of the revised index capitalization. This procedure is repeated for as long as there is no company exceeding the respective cap limit. Then the next smaller integer of shares resulting in the desired capitalization is used as the new weight for calculating the index.

Where the capped share of a company falls or rises below or above 10 percent during the quarter, it may only be raised or lowered to 10 percent again on the following chaining date as the above-described



procedure is repeated for every single chaining process.

### 3.1.4 New Listings and Deletions

Regular modifications to the index composition only occur if the ordinary chaining coincides with the actualization of the index composition at the same time. This process is based on the criteria as set out in: "Guide to the DAX Equity Indices".

### 3.1.5 Chaining

Dividend payments and capital changes are initially reflected through an adjustment of the respective citadjustment factors. Quarterly chaining is carried out on the maturity date of the various equity index futures of Eurex, implying that on this day (i.e. on the third Friday of the last month of a quarter), the index is calculated for the last time on the basis of weights valid up to that point. The new weights will apply from the next trading day. A change in the index composition also becomes necessary in the event of an index component issue being or becoming subject to extraordinary circumstances, such as deletion, composition proceedings, bankruptcy, new admission, etc.

#### 3.1.6 Business Forecast

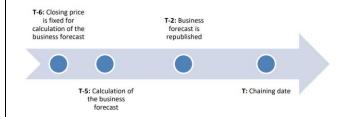
The business forecast is published at the quarterly underlying data announcement date, five trading days before the chaining date (i.e. at the second Friday in March, June, September, and December). It contains the composition, constituents weighting and cap factors for the new index compositions effective from the trading day following the third Friday of a review month.

The new number of shares, free float factors and closing prices used to determine the constituents weightings and cap factors are fixed at the trading day prior to the quarterly underlying data announcement date (T-6). For this purpose, the cit adjustment factors are set to 1.

The business forecast will be republished on the Wednesday before the chaining date (T-2), taking into account all corporate actions with ex-dates effective during the period between the quarterly underlying data announcement date and the chaining date



(including delistings and IPOs) STOXX became aware of since the initial publication of the business forecast at the quarterly underlying data announcement date.



### 3.1.7 Ordinary Chaining

The ordinary chaining procedure takes place on a quarterly basis and encompasses the following measures:

- The number of shares and the respective free floatfactors are updated in accordance with the capital changes carried out.
- The accumulated income from distributions and capital changes is allocated to the index component issues according to the respective new weights. For this purpose, the individual cit adjustment factors are set to 1.
- The following applies for capital increases that are announced before the review effective date, but effective date for registration of new shares is after review implementation date: to account for the price adjustment, the change in share capital will be adjusted via the correction factor cit at ex-date of the capital increase; at Index review, cit is set to 1. The qit will be adjusted at the next following regular index review.
- A chaining factor is calculated to avoid a gap in the respective index.

If the ordinary chaining coincides with the update of the index composition at the same time, a change of the composition takes place additionally.

These measures help to prevent the weighting scheme from "ageing" due to capital changes and the accumulation of income.

Chaining is carried out in three steps:



a) Calculation of the index value on the chaining date according to the old weighting scheme

The following applies accordingly:

$$Index_{t}^{} = K_{T}^{} \cdot \frac{\sum_{i=1}^{n} p_{it}^{} \cdot ff_{iT}^{} \cdot q_{iT}^{} \cdot c_{it}^{}}{\sum_{i=1}^{n} p_{i0}^{} \cdot q_{i0}^{}} \cdot Base$$

This value corresponds to the closing index published on the date of chaining, and is used with two decimal places (as published) for all subsequent calculations.

b) Computation of an interim value

The interim value is computed using the number of shares valid on the chaining date (qi,T+1) and the current free float factors (ffi,T+1). The cit adjustment factors are set to 1.

The following applies accordingly:

$$Interim \ value = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot ff_{i,T+1} \cdot q_{i,T+1}}{\displaystyle\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

The interim value is used as an exact figure for subsequent calculations.

c) Calculation of the new chaining factor

The following applies accordingly:

$$K_{T+1} = \frac{Index_t}{Interim value}$$

After chaining, the index is computed on the basis of the new chaining factor (KT+1).

After calculation of the chaining factor, capital changes and dividend payments due on the date of chaining are taken into account via the cit factor.

The Fi weighting factors of the index formula based on relative weights are calculated as follows:

$$F_{i} = K_{T+1} \cdot \frac{ff_{i,T+1} \cdot q_{i,T+1} \cdot c_{it}}{\sum_{i=1}^{n} q_{io}} \cdot 100$$



### 3.1.8 Unscheduled Chaining

In the event of a change in the index composition, chaining is carried out in line with the procedure described in section 3.1.7 above, however, without adjustment to the number of shares and the various citfactors. Newly included issues are taken into account with their respective current number of shares.

Computation of the interim value is based on the component issues of the revised index portfolio.

$$Interim \ value = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\displaystyle\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

With the new chaining factor to result as

$$K_{T+1} = \frac{Index_t}{Interim \ value}$$

If a newly included company was not listed in the Frankfurt Stock Exchange's Prime Standard or General Standard segments on the base date, the number of shares (qi0) and the price (pi0) must be sourced from the Third Segment (Open Market – OTC market) as per that base date. If the company was not listed in Frankfurt at all, the corresponding figures from the respective domestic exchange are used for the index calculation instead. If the company was not listed at all on the base date of the index, the basis number of shares (qi0) corresponds to the number of shares at the time of admission to trading. The basis price (pi0) is the first price available at the time of such admission.

#### 1.2 DAXplus Seasonal Strategy

The DAXplus® Seasonal Strategy index is a German equity index calculated by STOXX Ltd. This special index concept allows for seasonal investment strategies by locking in the index level achieved during August and September – traditionally, lower index levels prevail during these months. The index comprises the 40 component issues of the blue chip DAX® index, and is calculated accordingly.

#### 2.2 DAXplus Seasonal Strategy

### 11.2. DAXplus Seasonal Strategy

### **11.2.1 OVERVIEW**

The DAXplus Seasonal Strategy index is a German equity index calculated by STOXX Ltd. This special index concept allows for seasonal investment strategies by locking in the index level achieved during August and September – traditionally, lower index levels prevail during these months. The index comprises the 40 component issues of the blue chip DAX index, and is calculated accordingly.

**Universe: DAX** 



The index comprises the 40 component issues of the German blue-chip DAX® index.

Similar to DivDAX®, the index weighting is based on the free float market capitalization, but with the maximum weighting per share capped at 10 percent3.

The base date of DAXplus® Seasonal Strategy is 30 December 1987, with a base level of 1000.

Chaining takes place on a quarterly basis, in line with the methodology applied to the DAX.

The special feature of DAXplus Seasonal Strategy index is that the index value is frozen on the last trading day in July, and is not changed until the last trading day in September. The period between is referred to as the 'de-investment phase'. Starting with the first trading day in October, the index will again be calculated on the basis of the then current DAX composition.

Outside the de-investment phase during August and September, the index is calculated every 15 seconds, using the last available Xetra® price data for companies quoted in the Prime Standard segment. DAXplus Seasonal Strategy index uses the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in Index points, reflecting the indexspecific currency. 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 index's closing values. DAXplus Seasonal Strategy index is available in the currencies set forth in the Vendor Code Sheet which is available under

https://www.daxindices.com/ressourcen. DAXplus Seasonal Strategy is calculated both as a price and as a performance index.

# 3.1 DivDAX, DivMSDAX, DAXplus Seasonal Strategy and DAXplus Export Strategy

#### 3.1.1 Index Formulas

The indices are conceived according to the Laspeyres formula set out below:

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

**Base value and dates:** 1000 on December 30, 1987.

**Dissemination calendar:** Xetra calendar

#### 11.2.2 INDEX REVIEW

**Component selection:** The index composition outside of the de-investment phase is equal to the composition of DAX.

**Review frequency:** The index is reviewed on a quarterly basis, in line with the methodology applied to the DAX.

#### 11.2.3 ONGOING MAINTENANCE

**Calculation:** The index value is frozen on the last trading day in July, and is not changed until the last trading day in September. The period between is referred to as the 'de-investment phase'. Starting with the first trading day in October, the index will again be calculated on the basis of the then current DAX composition.

**Replacements:** All changes affecting the DAX also apply for the DAXplus Seasonal Strategy index.

Ad-hoc Exit: not applicable

**Ad-hoc Entry:** not applicable

**Spin-offs:** All changes affecting the DAX also apply for the DAXplus Seasonal Strategy index.



### A. DivDAX® and DAXplus® Export Strategy

$$Index_{t} = K_{T} \cdot \frac{\sum_{i=1}^{n} p_{it} \cdot q_{iT} \cdot \ ff_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

### B. DAXplus® Seasonal Strategy

$$Index_{t} = \begin{cases} K_{T} \cdot \frac{\displaystyle \sum_{i=1}^{n} p_{it} \cdot q_{T} \cdot ff_{T} \cdot c_{it}}{\displaystyle \sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base & ; \text{October until July} \\ \\ Index_{j} & ; \text{August and September} \end{cases}$$

whereby:

 $c_{it}$  = Adjustment factor of company i at time t  $ff_{iT}$  = Free float factor of share class i at time T

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

pit = Price of share i at time t

q<sub>i0</sub> = 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

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

$$Index_{\tau} = \frac{\displaystyle\sum_{i=1}^{n} p_{\pi} \cdot (K_{T} \cdot \frac{ff_{\tau T} \cdot q_{\tau T}}{\displaystyle\sum_{i=1}^{n} q_{\tau 0}} \cdot 100 \cdot c_{\pi})}{\displaystyle\sum_{i=1}^{n} p_{\tau 0} \cdot \frac{q_{\tau 0}}{\displaystyle\sum_{i=1}^{n} q_{\tau 0}} \cdot 100} \cdot Base \quad = \frac{\displaystyle\sum_{i=1}^{n} p_{\pi} \cdot F_{i}}{A} \cdot Base$$

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

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

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

- Multiply the current price by the respective Fi weighting factor;
- take the sum of these products; and
- divide this by the base value (A) which remains constant until a modification in the index composition



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

### 3.1.2 Computational Accuracy

The KT chaining factors are used and published as figures rounded to seven decimal places. The cit adjustment factors are included in the index formula on the basis of six decimal places. In the event of several adjustment events coinciding, such as "exdividend" and "ex subscription right "markdowns on the same day, only one single adjustment factor (six decimal places) is computed using the total markdown. Where several adjustment events are required for a single share but at different times, the factors rounded that way are multiplied by each other, and the product is rounded to six decimal places again. When determining the cit adjustment factor for subscription rights, the rights value is used as a figure with two decimal places. Only in the case of a capital increase out of company reserves, such rights value is not rounded at all. If a dividend disadvantage has to be prorated (e.g. for three months), the value of such disadvantage used for index calculation is rounded to two decimal places. The free float-factors are used as figures rounded to four decimal places. The indices are rounded to two decimal places and published accordingly. The Fi factors are rounded to five decimal places and published accordingly, changing with each share-specific adjustment.

#### 3.1.3 Cap Limit

On the day of regular quarterly chaining, the weighting of any single company in DivDAX®, DAXplus® Export Strategy and in DAXplus®Seasonal Strategy is capped to 10 percent of the index capitalization, respectively. For this purpose, the index capitalization is computed using the total number of all freely available shares. If any single class of shares accounts for a share of more than i.e. 10 percent in the respective capitalization, the number of shares used as weight for that company is reduced to 10 percent of the index capitalization (which is being reduced accordingly). Should yet another company exceed the cap limit after that, the capitalization is to be determined with which both companies would account for exactly 10 percent of the revised index capitalization. This procedure is repeated for as long



as there is no company exceeding the respective cap limit. Then the next smaller integer of shares resulting in the desired capitalization is used as the new weight for calculating the index.

Where the capped share of a company falls or rises below or above 10 percent during the quarter, it may only be raised or lowered to 10 percent again on the following chaining date as the above-described procedure is repeated for every single chaining process.

### 3.1.4 New Listings and Deletions

Regular modifications to the index composition only occur if the ordinary chaining coincides with the actualization of the index composition at the same time. This process is based on the criteria as set out in: "Guide to the DAX Equity Indices".

#### 3.1.5 Chaining

Dividend payments and capital changes are initially reflected through an adjustment of the respective citadjustment factors. Quarterly chaining is carried out on the maturity date of the various equity index futures of Eurex, implying that on this day (i.e. on the third Friday of the last month of a quarter), the index is calculated for the last time on the basis of weights valid up to that point. The new weights will apply from the next trading day. A change in the index composition also becomes necessary in the event of an index component issue being or becoming subject to extraordinary circumstances, such as deletion, composition proceedings, bankruptcy, new admission, etc.

#### 3.1.6 Business Forecast

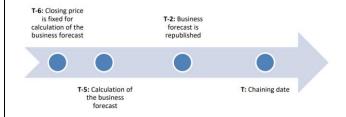
The business forecast is published at the quarterly underlying data announcement date, five trading days before the chaining date (i.e. at the second Friday in March, June, September, and December). It contains the composition, constituents weighting and cap factors for the new index compositions effective from the trading day following the third Friday of a review month.

The new number of shares, free float factors and closing prices used to determine the constituents weightings and cap factors are fixed at the trading day



prior to the quarterly underlying data announcement date (T-6). For this purpose, the cit adjustment factors are set to 1.

The business forecast will be republished on the Wednesday before the chaining date (T-2), taking into account all corporate actions with ex-dates effective during the period between the quarterly underlying data announcement date and the chaining date (including delistings and IPOs) STOXX became aware of since the initial publication of the business forecast at the quarterly underlying data announcement date.



### 3.1.7 Ordinary Chaining

The ordinary chaining procedure takes place on a quarterly basis and encompasses the following measures:

- The number of shares and the respective free floatfactors are updated in accordance with the capital changes carried out.
- The accumulated income from distributions and capital changes is allocated to the index component issues according to the respective new weights. For this purpose, the individual cit adjustment factors are set to 1.
- The following applies for capital increases that are announced before the review effective date, but effective date for registration of new shares is after review implementation date: to account for the price adjustment, the change in share capital will be adjusted via the correction factor cit at ex-date of the capital increase; at Index review, cit is set to 1. The qit will be adjusted at the next following regular index review.
- A chaining factor is calculated to avoid a gap in the respective index.



If the ordinary chaining coincides with the update of the index composition at the same time, a change of the composition takes place additionally.

These measures help to prevent the weighting scheme from "ageing" due to capital changes and the accumulation of income.

Chaining is carried out in three steps:

a) Calculation of the index value on the chaining date according to the old weighting scheme

The following applies accordingly:

$$Index_{t} = K_{T} \cdot \frac{\sum_{i=1}^{n} p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

This value corresponds to the closing index published on the date of chaining, and is used with two decimal places (as published) for all subsequent calculations.

b) Computation of an interim value

The interim value is computed using the number of shares valid on the chaining date (qi,T+1) and the current free float factors (ffi,T+1). The cit adjustment factors are set to 1.

The following applies accordingly:

$$Interim \ value = \frac{\displaystyle\sum_{i=1}^{n} p_{it} \cdot ff_{i,T+1} \cdot q_{i,T+1}}{\displaystyle\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

The interim value is used as an exact figure for subsequent calculations.

c) Calculation of the new chaining factor

The following applies accordingly:

$$K_{T+1} = \frac{Index_t}{Interim value}$$

After chaining, the index is computed on the basis of the new chaining factor (KT+1).



After calculation of the chaining factor, capital changes and dividend payments due on the date of chaining are taken into account via the cit factor.

The Fi weighting factors of the index formula based on relative weights are calculated as follows:

$$F_{i} = K_{T+1} \cdot \frac{ff_{i,T+1} \cdot q_{i,T+1} \cdot c_{it}}{\sum_{i=1}^{n} q_{io}} \cdot 100$$

### 3.1.8 Unscheduled Chaining

In the event of a change in the index composition, chaining is carried out in line with the procedure described in section 3.1.7 above, however, without adjustment to the number of shares and the various citfactors. Newly included issues are taken into account with their respective current number of shares.

Computation of the interim value is based on the component issues of the revised index portfolio.

$$\begin{aligned} \text{Interim value} &= \frac{\sum_{i=1}^{n} p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot \text{Base} \end{aligned}$$

With the new chaining factor to result as

$$K_{T+1} = \frac{Index_t}{Interim value}$$

If a newly included company was not listed in the Frankfurt Stock Exchange's Prime Standard or General Standard segments on the base date, the number of shares (qi0) and the price (pi0) must be sourced from the Third Segment (Open Market – OTC market) as per that base date. If the company was not listed in Frankfurt at all, the corresponding figures from the respective domestic exchange are used for the index calculation instead. If the company was not listed at all on the base date of the index, the basis number of shares (qi0) corresponds to the number of shares at the time of admission to trading. The basis price (pi0) is the first price available at the time of such admission.

### 1.12 DAXplus Family

The DAXplus Family index measures the performance of founder-dominated companies ("family

11.3. DAXplus Family and DAXplus Family 30



enterprises") that are listed at the Frankfurt Stock Exchange (FWB®). The DAXplus Family Index was developed in cooperation with the Centre for Entrepreneurial and Financial Studies (CEFS) at Technische

Universität München (TUM). The review of the index composition is performed annually in March by STOXX Ltd. based on shareholder structure information provided by Marketline.

### 2.12 DAXplus Family

The DAXplus Family index is an all-share index that comprises all companies listed in the Prime Standard segment at the Frankfurt Stock Exchange and meet the specific selection criteria for family enterprises. For this concept, Family enterprises are characterized by the following two attributes:

Family Ownership

The group of index relevant people is a major shareholder of the company, i.e. it holds at least 25 percent of

all ordinary shares

and/or

Family Management

The group of index relevant people holds at least 5 percent of the ordinary shares and is member of the company management (management or supervisory board).

The group of index relevant people consists of founders (both single founders and teams of founders) of the

company and their families.

In a broader sense the group of index relevant people is also assigned such shares that are being held indirectly by an asset management, investment or holding company, in case these are owned or controlled by the group of index relevant people. In addition, with the DAXplus Family 30 index a liquid selection index is being calculated that comprises the 30 largest family enterprises (according to free float market capitalization) which have an average daily trading volume of at least €500,000 over the preceding three months at the time of index review.

The base date of the DAXplus Family indices is 21 June 2002 with a base value of 1000.

The composition of the index is reviewed on an annual basis in March. The index weighting is based on the free float market capitalization of the shares. The weight of an underlying is limited to a maximum of 10

### **11.3.1 OVERVIEW**

The DAXplus Family index measures the performance of founder-dominated companies ("family enterprises") that are listed at the Frankfurt Stock Exchange (FWB). The DAXplus Family Index was developed in cooperation with the Centre for Entrepreneurial and Financial Studies (CEFS) at Technische Universität München (TUM). The review of the index composition is performed annually in March by STOXX Ltd. based on shareholder structure information provided by GlobalData.

**Universe:** All securities that are included in Prime All Share and listed on Xetra.

**Weighting Scheme:** The indices are free-float market capitalization weighted.

**Capping:** Components are capped at a maximum weight of 10% on a quarterly basis.

Base value and dates: 1000 on June 21, 2002.

**Dissemination calendar:** Xetra calendar

11.3.2 INDEX REVIEW

**Selection list:** The selection list for DAXplus Family 30 is updated and published on the 4<sup>th</sup> trading day in March. The cut-off date is the last trading day in February.

**Component selection:** The DAXplus Family index is an all-share index that comprises all stocks listed in the Prime Standard segment at the Frankfurt Stock Exchange and meet the specific selection criteria for family enterprises. For this concept, Family enterprises are characterized by the following two attributes:

Family Ownership
 The group of index relevant people is a major shareholder of the company, i.e. it holds at least 25 percent of all ordinary shares

and/or

Family Management
 The group of index relevant people holds at least 5 percent of the ordinary shares and is member of the company



percent.

The DAXplus Family indices are calculated continuously every 60 seconds from 9 a.m. to 5:45 p.m. as total return index, the price indices are computed once a day at market close. The calculation is based on the last available Xetra® prices. DAXplus Family indices use the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index points, reflecting the indexspecific currency. 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. DAXplus Family indices are available in the

currencies set forth in the Vendor Code Sheet which is available under

https://www.daxindices.com/ressourcen.

### 3.8 DAXplus Family-Index

3.8.1 Index Formula

The indices are based on the index formula of Laspeyres und are calculated as follows:

$$Index_{_{t}} = K_{_{T}} \cdot \frac{\sum p_{_{it}} \cdot ff_{_{iT}} \cdot q_{_{iT}} \cdot c_{_{it}}}{\sum p_{_{i0}} \cdot q_{_{i0}}} \cdot Base$$

whereby:

cit = Adjustment factor of share i at time t

ffiT = Free float factor of share i at time T

n = Number of shares in the index

pi0 = Closing price of share i on the trading day before the first inclusion in the index

pit = Price of share i at time t

qi0 = Number of shares of company i on the trading day before the first inclusion in the index

giT = Number of shares of company i at time T

t = calculation time of the index

KT = Index specific chaining factor valid as of chaining date T

T = Date of the last chaining

3.8.2 Calculation Accuracy

The DAXplus®

Family index will be published rounded at two decimal places

All adjustment factors refer to the "Guide to the DAX Equity Indices".

management (management or supervisory board).

The group of index relevant people consists of founders (both single founders and teams of founders) of the company and their families.

In a broader sense the group of index relevant people is also assigned such shares that are being held indirectly by an asset management, investment or holding company, in case these are owned or controlled by the group of index relevant people.

In addition, with the DAXplus Family 30 index a liquid selection index is being calculated that comprises the 30 largest family enterprises (according to free float market capitalization) which have an average daily trading volume of at least €500,000 over the preceding three months at the time of index review.

The shareholder structure data used for the selection is provided by GlobalData. Cut-off date for the shareholder structure data collection is usually the last trading day in January. In case of a new addition to Prime All Share after the shareholder structure data cut-off date and before the review cut-off date (i.e., last trading day in February), the shareholder structure data on the day of the admission to Prime All Share is used for the admitted stock instead.

**Review frequency:** The indices are reviewed once per year in March. Rebalancing takes place on a quarterly basis.

#### 11.3.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are replaced by the highest ranked stock on the most recent selection list that is not included in the index.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.



3.8.3 Chaining
The chaining8 procedure for DAXplus®
Family-Index takes place as described in chapters
3.1.5, 3.1.6, 3.1.7

and 3.1.8.

#### 11.4. GEX

#### **11.4.1 OVERVIEW**

The GEX (German Entrepreneurial Index) - introduced on 3 January 2005 - reflects the segment of German so-called Entrepreneurial Firms that are listed at the Frankfurt Stock Exchange (FWB). The GEX was developed in cooperation with the Center for Entrepreneurial and Financial Studies (CEFS) at Technische Universität München (TUM).

**Universe:** Prime All Share

Weighting Scheme: The index is free-float market

capitalization weighted.

**Capping:** Components are capped at a maximum

weight of 10% on a quarterly basis.

Base value and dates: 1000 on July 30, 2004.

Dissemination calendar: Xetra calendar

11.4.2 INDEX REVIEW

**Component selection:** To be included or to remain in the GEX, companies have to satisfy certain prerequisites. Since the GEX measures the performance of Entrepreneurial Firms, GEX-constituents have to comply with the following five selection criteria. Criteria 1 to 3 distinguish Entrepreneurial Firms from the universe of all listed companies. Criteria 4 and 5 further constrain the GEX-constituents to German Prime Standard listed companies.

Companies' ordinary shares are included in the GEX if

- the group of so-called GEX-relevant persons cumulatively holds a stake of at least 25 percent of the companies' ordinary shares. The group of GEX-relevant persons consists of
  - a. active members of the management board and their families,



- b. active members of the supervisory board and their families,
- former members of the management board and supervisory board and their families.

In the broader sense stakes will be attributed to the group of GEX-relevant persons if

- d. asset management-, investmentsor holding-companies indirectly hold ownership stakes for the aforementioned group of GEXrelevant persons, i.e. the asset management-, investments- or holding-companies themselves are owned by GEX-relevant persons or
- e. companies holding at least 30 percent of the considered company (threshold for mandatory offers) themselves are by at least 25 percent owned by "their" respective group of GEX-relevant persons. In this case an adjusted ownership stake is considered which is calculated as the product of both relative ownership stakes (criterion 1). Example: In Company A the management board of Company A holds 20% and Company B 50%. The remaining 30% are free float. The chairman of the supervisory board of Company B owns 60% of Company B. Does Company A comply with criterion 1? Yes. The GEX-relevant stake is 50% and, therefore, higher than the mandatory 25% (criterion 1). Calculation:  $20\% + (50\% \times 60\%) =$
- 2) the group of GEX-relevant persons cumulatively holds a stake of not more than 75 percent of the companies' ordinary shares. Looking at GEX-relevant stakes according to criterion 1.E it must be considered that neither the direct ownership stake of the owner dominated holding company nor the calculated

20% + 30% = 50%



adjusted ownership stake may exceed the 75 percent threshold (criterion 2).

3) the Post-IPO-age does not exceed ten years. The Post-IPO-age is determined by the period between cut-off date for the review of the selection criteria and the Initial Public Offering (IPO) or the listing of the ordinary shares respectively (criterion 3).

Furthermore, GEX component issues must be

- 4) companies based in Germany (criterion 4) and must be
- 5) listed in the Prime Standard segment of FWB and is continuously traded on Xetra (criterion 5).

The shareholder structure data used for the selection is provided by GlobalData. Cut-off date for the shareholder structure data collection is usually the last trading day in January. In case of a new addition to Prime All Share after the shareholder structure data cut-off date and before the review cut-off date (i.e., last trading day in February), the shareholder structure data on the day of the admission to Prime All Share is used for the admitted stock instead.

**Review frequency:** The index is reviewed once per year in March. Rebalancing takes place on a quarterly basis.

### 11.4.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** See chapter 7.4. of DAX Equity

Calculation Guide.

### 2.1 Region-oriented Indices

The DAXglobal® Equity Indices are calculated according the Xetra® trading calendar. Eligible exchanges are listed in Section 8.2 unless otherwise specified in the index description. For details on

### 12. International Region-oriented Indices

#### 12.1. DBIX Deutsche Börse India



selection criteria and weighting methodology please see Section 3.2 and 3.3.

#### 2.1.1 DBIX Deutsche Börse India Index

DBIX Deutsche Börse India Index® represents the performance of the most liquid and largest American Depository Receipts (ADRs) and Global Depository Receipts (GDRs) of Indian companies, which are traded on New York Stock Exchange or on Nasdaq and on London Stock Exchange, respectively. The number of constituents is limited to a maximum of 25. In case the number of securities fulfilling the selection criteria is not sufficient to reach the targeted number of constituents, the index will have a lower number of constituents than maximum targeted.

#### **12.1.1 OVERVIEW**

DBIX Deutsche Börse India Index represents the performance of the most liquid and largest American Depository Receipts<sup>5</sup> (ADRs) and Global Depository Receipts (GDRs)<sup>6</sup> of Indian companies, which are traded on New York Stock Exchange or on Nasdaq and on London Stock Exchange, respectively.

**Universe:** The parent index is the STOXX World DR Index.

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** The weight of individual index components is capped at 15%. In case of a shortfall of index constituents below 7, the index switches to an equal weight capping scheme.

Base value and dates: 100 on March 15, 2002.

Dissemination calendar: STOXX Global Calendar

12.1.2 INDEX REVIEW

#### **Component selection:**

The parent index is filtered for companies with an Indian country assignment, as per the STOXX country assignment methodology (see chapter 5.7. of STOXX Index Methodology Guide).

Companies from the parent index with such a country assignment are admitted to the index selection list if they show an average daily trading volume (ADTV) of at least 1.2 Mio. USD over the previous six months. The ADTV threshold for companies, which are already index constituents, is only 2/3 of the threshold value compared to entry candidates, i.e. 0.8 Mio. USD.

Companies on the index selection list are ranked according to their market capitalization. The 25 companies with the highest market capitalization are included in the index. The number of index constituents is limited to a maximum of 25. In case of an insufficient number of companies on the selection list, the index may have a lower number of index constituents than 25.

<sup>&</sup>lt;sup>5</sup> American Depository Receipts (ADRs) are receipts for the shares of a remotely based corporation held in the vault of a US bank, entitling the shareholder to all dividends and capital gains. ADRs are traded on various stock exchanges worldwide and are denominated in US\$. <sup>6</sup> Global depository receipts (GDRs), which were developed on the basis of American depositary receipts (ADRs), securitize the ownership in shares. A GDR can relate to one or several shares, or a mere proportion of a share. GDRs are traded instead of the original shares on exchanges worldwide.



The ADTV and market capitalization are calculated ending on the last trading day the month prior to the month in which the index review takes place. The market capitalization used for the ranking is calculated as average over the previous 20 trading days ending on the last trading day before the review month.

To assure index continuity and representativeness, the liquidity and market capitalization thresholds defined above may be adjusted downwards in case of a general decrease in the respective measure across the given region / sector.

**Review frequency:** The index is reviewed on a quarterly basis.

#### 12.1.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

For Indices that cover ex ante defined countries applies the following: If an extraordinary modification becomes necessary a replacing company of the same country as the leaving company is taken into the index (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). If this is not possible (e.g. by virtue of limitations affecting the entire country - changes in economic policies, extraordinary regulatory limitations), the affected companies are taken out of the index without determination of a replacing company (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). In this case, the weight of the leaving company is automatically distributed among all countries.

**Ad-hoc Exit:** not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

### 2.1.2 DAXglobal BRIC Index

DAXglobal® BRIC Index includes companies from Brazil, India and China. Companies are represented by ADRs and GDRs, traded on New York Stock Exchange or Nasdaq and on London Stock Exchange,

### 12.2. DAXglobal BRIC

### **12.2.1 OVERVIEW**

DAXglobal BRIC Index includes companies from Brazil, India and China. Companies are represented by ADRs and GDRs, traded on New



respectively. For China, H-Shares and Red-Chips are eligible for the index. From each country 10 companies are selected for the index. The number of index constituents therefore equals 30.

York Stock Exchange or Nasdaq and on London Stock Exchange, respectively. For China, H-Shares and Red-Chips are eligible for the index. From each country 10 companies are selected for the index. The number of index constituents therefore equals max. 30.

**Universe:** The parent indices are STOXX World DR Index, STOXX China Red Chips TMI and STOXX China H TMI.

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** A double capping is applied, where the maximum weight for each country is set to 35 percent and the weight for each component is limited to 10 percent of the entire index capitalization.

**Base value and dates:** 100 on September 21, 2001.

Dissemination calendar: STOXX Global Calendar

12.2.2 INDEX REVIEW

**Selection List:** The selection list is updated and published on the 2<sup>nd</sup> Friday of the review month. The cut-off date is the last trading day of the month for which the selection list is created.

### **Component selection:**

The parent index is filtered for companies with a Brazilian, Indian and Chinese country assignment, as per the STOXX country assignment methodology (see chapter 5.7. of STOXX Index Methodology Guide).

Companies from the parent indices with such a country assignment are admitted to the index selection list if they show an average daily trading volume (ADTV) of at least 1 Mio. USD over the previous six months.

Companies on the index selection list are ranked according to their market capitalization. The 10 companies from each country with the highest market capitalization on the selection list are included in the index. The number of index constituents is max. 30.

The ADTV and market capitalization are calculated ending on the last trading day the month prior to



the month in which the index review takes place. The market capitalization used for the ranking is calculated as average over the previous 20 trading days ending on the last trading day before the review month.

To assure index continuity and representativeness, the liquidity and market capitalization thresholds defined above may be adjusted downwards in case of a general decrease in the respective measure across the given region / sector.

**Review frequency:** The index is reviewed once per year in September. Rebalancing takes place on a quarterly basis.

#### 12.2.3 ONGOING MAINTENANCE

**Replacements:** A deleted component is replaced with the highest ranked non-component from the selection list and added with the weight based on its free-float market capitalization.

For Indices that cover ex ante defined countries applies the following: If an extraordinary modification becomes necessary a replacing company of the same country as the leaving company is taken into the index (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). If this is not possible (e.g. by virtue of limitations affecting the entire country - changes in economic policies, extraordinary regulatory limitations), the affected companies are taken out of the index without determination of a replacing company (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). In this case, the weight of the leaving company is automatically distributed among all countries.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

#### 2.1.3 DAXglobal China

The portfolio of DAXglobal® China tracks the performance of the 40 largest and most liquid Chinese companies. The constituents are represented by Red-

#### 12.3. DAXglobal China

#### **12.3.1 OVERVIEW**

The portfolio of DAXglobal China tracks the performance of the 40 largest and most liquid Chinese companies. The constituents are



Chips and H-Shares from Hong Kong Stock Exchange as well as by ADRs or shares from Singapore Stock Exchange, London Stock Exchange, Nasdaq and New York Stock Exchange. represented by Red-Chips and H-Shares from Hong Kong Stock Exchange as well as by ADRs from London Stock Exchange, Nasdaq and New York Stock Exchange.

**Universe:** The parent indices are STOXX World DR Index, STOXX China Red Chips TMI and STOXX China H TMI.

Weighting Scheme: A liquidity weighting applies.

**Capping:** The weight of individual index components is capped at 10%. In case of a shortfall of index constituents below 10, the index switches to an equal weight capping scheme.

**Base value and dates:** 100 on September 21, 2001.

Dissemination calendar: STOXX Global Calendar

12.3.2 INDEX REVIEW

**Selection List:** The selection list is updated and published on the 2<sup>nd</sup> Friday of the review month. The cut-off date is the last trading day of the month for which the selection list is created.

## **Component selection:**

The parent index is filtered for companies with a Chinese country assignment, as per the STOXX country assignment methodology (see chapter 5.7. of STOXX Index Methodology Guide).

Companies from the parent indices with such a country assignment are admitted to the index selection list if they show an average daily trading volume (ADTV) of at least 1 Mio. USD over the previous six months.

Companies on the index selection list are ranked according to their market capitalization. The 40 companies with the highest market capitalization on the selection list are included in the index.

The ADTV and market capitalization are calculated ending on the last trading day the month prior to the month in which the index review takes place. The market capitalization used for the ranking is calculated as average over the previous 20 trading days ending on the last trading day before the review month.



To assure index continuity and representativeness, the liquidity and market capitalization thresholds defined above may be adjusted downwards in case of a general decrease in the respective measure across the given region / sector.

**Weights calculation:**. The target weight of component i at time t is calculated as follows:

$$w_{it} = \frac{6M \text{ ADTV } EUR_i}{\sum_{j=1}^{40} 6M \text{ ADTV } EUR_j}$$

where the denominator is the sum of 6 months ADTV in EUR of all 40 companies within the index.

The weighting factor of component i at time t is calculated as follows:

$$wf_{it} = 1bn * \frac{w_{it}}{p_{it}}$$

with  $p_{it}$  being the closing price of component i at time t.

**Review frequency:** The index is reviewed once per year in September. Rebalancing takes place on a quarterly basis.

# 12.3.3 ONGOING MAINTENANCE

**Replacements:** The replacement will enter the index with the same weight the old component had, based on the closing price of four trading days prior to the Effective date of the replacement.

For Indices that cover ex ante defined countries applies the following: If an extraordinary modification becomes necessary a replacing company of the same country as the leaving company is taken into the index (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). If this is not possible (e.g. by virtue of limitations affecting the entire country - changes in economic policies, extraordinary regulatory limitations), the affected companies are taken out of the index without determination of a replacing company (Discretionary Rule, see section 2.3 Discretion in the DAX Equity Index Calculation Guide). In this case, the weight of the leaving company is automatically distributed among all countries.

Ad-hoc Exit: not applicable



# 2.2 Industry and Trend Indices 2.2.1 DAXglobal® Agribusiness

DAXglobal® Agribusiness represents the performance of companies belonging to the agricultural economy. A company is considered as an agricultural company, if it generates more than 50% of its revenues from one of the following sectors: Agriproduct, Agricultural Equipment, Agriproduct Operations,

Ethanol/Biodiesel, Livestock Operations, Plantations, Agricultural Chemicals, Biotechnology, Fertilizers, Agriculture, Animal feed, Seeds, Agricultural chemicals, Sugar, Agricultural Equipment, Fertilizer and Minerals.

The local exchanges of the following countries are excluded from the selection: Brazil, China (Shanghai, Shenzhen), India, Mexico, Russia, Saudi Arabia, Thailand.

# Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

# 13. International Trend- and Industry-Indices

# 13.1 DAXglobal Agribusiness

### **13.1.1 OVERVIEW**

Agribusiness DAXglobal represents the performance of companies belonging to the agricultural economy. A company is considered as an agricultural company, if it generates more than 50% of its revenues from one of the following sectors: Agriproduct, Agricultural Equipment, Agriproduct Operations, Ethanol/Biodiesel, Livestock Operations, Plantations, Agricultural Chemicals, Biotechnology, Fertilizers, Agriculture, Animal feed, Seeds, Agricultural chemicals, Sugar, Agricultural Equipment, Fertilizer and Minerals.

**Universe:** The parent indices are STOXX World DR Index, STOXX TMI, STOXX GCC TMI, STOXX China A TMI and STOXX China P-Chip TMI

**Weighting Scheme:** The index is free-float market capitalization weighted.

**Capping:** A 40/8/4.5-Capping Method applies. The procedure is carried out as follows: Step A). All companies will be capped at a maximum of 8 percent by the single cap limit method.

Step B). The components will then be ranked from largest to smallest (in case more than one component has the weight of 8 percent after step A) the original weight is taken to determine the order among these components).

Step C). Maximal weights are determined for the largest 6 components according to step B). For the largest 6 components, the maximum weights allowed are 8%, 7.5%, 7%, 6.5%, 6% and 5%. All further components will be capped down to a maximum weight of 4.5%. E.g. if the weight of the second largest component exceeds 7.5%, it will be capped down accordingly.

Step D). Step C) is repeated until all components fulfil the restrictions listed under C).



**Base value and dates:** 100 on December 28, 2001.

Dissemination calendar: STOXX Global Calendar

13.1.2 INDEX REVIEW

## **Component selection:**

GlobalData conducts the selection of global securities of companies generating more than 50% of their revenues from one of the following sectors: Agriproduct, Agricultural Equipment, Agriproduct Operations, Ethanol/Biodiesel, Livestock Operations, Plantations, Agricultural Chemicals, Biotechnology, Fertilizers, Agriculture, Animal feed, Seeds, Agricultural chemicals, Sugar, Agricultural Equipment, Fertilizer and Minerals.

STOXX applies the pre-selection provided by GlobalData to filter for companies from countries listed in the International Equities investable Universe as per section 3.2. This filtered list of companies is replicated by STOXX via the parent indices provided in section 13.1.1.

Companies from the parent indices with an eligible country assignment are admitted to the index selection list if they show an average daily trading volume (ADTV) of at least 1.2 Mio. USD over the previous six months as well as in each of the previous two months, a market capitalization of at least 1.2 \* 150 Mio. USD and an aggregated trading volume of at least 1.2 \* 250.000 shares (for each one of the previous 6 months).

Companies which are already index constituents must show an ADTV of at least 0.8 Mio. USD over the previous six months as well as in each of the previous two months, a market capitalization of at least 0.8 \* 150 Mio. USD and an aggregated trading volume of at least 0.8 \* 250.000 shares (for each one of the previous 6 months).

All companies on the index selection list are admitted as index constituents.

Companies from countries not included in the International Equities investable Universe as per chapter 3.2 are not eligible for inclusion in the index selection list. The local exchanges of the following countries are also excluded from the selection: Brazil, China (Shanghai, Shenzhen), India, Mexico, Russia, Saudi Arabia, Thailand.



The ADTV, the market-capitalization and the aggregated volume are calculated ending on the last trading day the month prior to the month in which the index review takes place.

To assure index continuity and representativeness, the liquidity and market capitalization thresholds defined above may be adjusted downwards in case of a general decrease in the respective measure across the given region / sector.

**Review frequency:** The components are reviewed semi-annually in March and September. Rebalancing takes place on a quarterly basis.

#### 13.1.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

## 2.2.2 DAXglobal® Gold Miners

The DAXglobal® Gold Miners index represents companies of the gold mining industry that generate at least 50 percent of their revenues with gold mining.

A list of eligible stock exchanges that qualify for inclusion in the index may be found in Appendix 1 of chapter 8.2. Shares that are listed in countries which do not qualify for the index are to be considered for inclusion via ADRs/GDRs, that are listed in the US and UK (see Appendix 2 in chapter 8.2). Stocks that are listed at one of the exchanges described in Appendix 3 of chapter 8.2 will be substituted by ADRs/GDRs, provided that these account for at least 75 percent of the liquidity of shares represented.

# 13.2. DAXglobal Gold Miners

## **13.2.1 OVERVIEW**

The DAXglobal Gold Miners index represents companies of the gold mining industry that generate at least 50 percent of their revenues with gold mining. The number of index constituents is allowed to vary between 20 to 35.

**Universe:** The parent indices are STOXX World DR Index, STOXX TMI, STOXX GCC TMI, STOXX China A TMI and STOXX China P-Chip TMI.

**Weighting Scheme:** A liquidity weighting applies.

**Capping:** The weight of individual index components is capped at 15%. In case of a shortfall of index constituents below 7, the index switches to an equal weight capping scheme.

**Base value and dates:** 100 on September 21,

2001.

Dissemination calendar: STOXX Global Calendar



# 13.2.2 INDEX REVIEW

# **Component selection:**

GlobalData conducts the selection of global securities of companies generating more than 50% of their revenues with gold mining.

STOXX applies the pre-selection provided by GlobalData to filter for companies from the following countries:

Americas			
NYSE (US)	Class 1	Mexican Stock	Class
		Exchange (MX)	2
NASDAQ (US)	Class 1	B3 S.A Brasil, Bolsa, Balcao (BR)	Class 3
Toronto Stock Exchange (CA)	Class 1		

All Europe			
Athens Stock	Class	EURONEXT	Class
Exchange (GR)	1	Milan (IT)	1
Bolsa De	Class	Oslo Stock	Class
Madrid (ES)	1	Exchange (NO)	1
Deutsche	Class	Istanbul Stock	Class
Boerse (DE)	1	Exchange (TR)	2
London Stock	Class	NASDAQ	Class
Exchange (GB)	1	Copenhagen (DK)	1
SIX Swiss	Class	NASDAQ	Class
Exchange (CH)	1	Helsinki (F)	1
Vienna Stock	Class	NASDAQ	Class
Exchange (AT)	1	Iceland (IS)	1
EURONEXT	Class	NASDAQ	Class
Paris (FR)	1	Stockholm AB (SE)	1
EURONEXT	Class	NASDAQ Riga	Class
Amsterdam	1	(LV)	1
(NL)			
EURONEXT	Class	NASDAQ	Class
Brussels (BE)	1	Tallinn AS (EE)	1
EURONEXT	Class	NASDAQ	Class
Lisbon (PT)	1	Vilnius (LT)	1
EURONEXT	Class		
Dublin (IE)	1		

Asia/Pacific			
Tokyo Stock	Class	Taiwan Stock	Class
Exchange (JP)	1	Exchange (TW)	2



Stock Exchange of Hong Kong (HK)	Class 3	Bursa Malaysia (MY)	Class 2
Shanghai Stock Exchange (CN)	Class 2	Singapore Exchange (SG)	Class 3
Shenzhen Stock Exchange (CN)	Class 2	Stock Exchange of Thailand (TH)	Class 2
Australian Securities Exchange (AU)	Class 1	Indonesia Stock Exchange (ID)	Class 2
Korea Exchange (KR)	Class 2	Bombay Stock Exchange (IN)	Class 2
Philippine Stock Exchange (PH)	Class 2	Pakistan Stock Exchange (PK)	Class 2

Middle East and Africa			
Riyadh SE	Class 2	Johannesburg	Class
(SA)		Stock Exchange	3
		(ZA)	

This filtered list of companies is replicated by STOXX via the parent indices provided in section 13.2.1according to the following rules:

- Class 1 countries: Shares that are listed in class 1 countries qualify for the inclusion in the index. ADRs/GDRs from shares listed in class 1 countries do not qualify for the inclusion in the index.
- Class 2 countries: Shares that are listed in class 2 countries do not qualify for the inclusion in the index but are to be considered for inclusion via ADRs/GDRs, that are listed in the US and UK.
- Class 3 countries: Shares that are listed in class 3 countries will be substituted by ADRs/GDRs, provided that these account for at least 75 percent of the liquidity of shares represented.

If shares of companies are listed on more than one exchange, the primary listing is chosen in the selection for DAXglobal Gold Miners.



Companies from the parent indices with an eligible country assignment are admitted to the index selection list if they show an average daily trading volume (ADTV) of at least 2 Mio. USD over the previous three months and a full market capitalization of at least 500 Mio. USD. The ranking is based on free float market capitalization. The 35 companies with the highest free float market capitalization on the selection list are included in the index.

If less than 20 companies qualify for inclusion in the index according to the component selection criteria, the criterion of market-capitalization  $\geq$  500 Mio. USD is lowered accordingly.

To assure index continuity and representativeness, the liquidity and market capitalization thresholds defined above may be adjusted downwards in case of a general decrease in the respective measure across the given region / sector.

**Weights calculation:** The target weight of component i at time t is calculated as follows:

$$w_{it} = \frac{3\text{M ADTV } EUR_i}{\sum_{j=1}^{a} 3M \text{ ADTV } EUR_j}$$

where the denominator is the sum of 3 months ADTV in EUR of all companies a= [20,35] within the index.

The weighting factor of component i at time t is calculated as follows:

$$wf_{it} = 1bn * \frac{w_{it}}{p_{it}}$$

with  $p_{it}$  being the closing price of component i at time  ${\bf t}$ .

**Review frequency:** The components are reviewed semi-annually in March and September. Rebalancing takes place on a quarterly basis.

## 13.2.3 ONGOING MAINTENANCE

**Replacements:** Deleted companies are not replaced.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable



<b>Spin-offs:</b> Spin-off companies are not eligible to stay in the index.
13.3. World Luxury Index
13.3.1 OVERVIEW World Luxury Index comprises the 20 largest and most liquid issues of the luxury goods industry worldwide. A company is considered as belonging to the industry of luxury goods if more than 50 percent of the overall turnover is generated from luxury articles.
<b>Universe:</b> The parent indices are STOXX World DR Index, STOXX TMI, STOXX GCC TMI, STOXX China A TMI and STOXX China P-Chip TMI.
<b>Weighting Scheme:</b> The index is free-float market capitalization weighted.
<b>Capping:</b> The weight of individual index components is capped at 10%. In case of a shortfall of index constituents below 10, the index switches to an equal weight capping scheme.
The luxury goods sector and sub-sector classification is performed by GlobalData. The data on percentage revenues per luxury goods subsector are provided by GlobalData.
Base value and dates: 100 on February 02, 2007.
13.3.2 INDEX REVIEW
<b>Selection List:</b> The selection list is updated and published on the 2 <sup>nd</sup> Friday of the review month. The cut-off date is the last trading day of the month for which the selection list is created.
<b>Component selection:</b> GlobalData conducts the selection global securities of companies generating more than 50% of their overall turnover from luxury articles.
STOXX applies the pre-selection provided by GlobalData to filter for companies from countries listed in the International Equities Investable Universe as per section 3.2. This filtered list of companies is replicated by STOXX via the parent indices provided in section 13.3.1.
Companies from the parent indices with an eligible country assignment are admitted to the index selection list if they show an average daily trading



volume (ADTV) of at least 5 Mio. USD over the previous six months.

Companies on the index selection list are ranked according to their revenue percentage per luxury goods sub-sector. The higher the revenue percentage per luxury goods sub-sector is, the higher the company ranks. For companies with the same revenue percentage per luxury goods sub-sector, the company with the higher full market capitalization will receive the higher index rank. The number of companies per luxury goods sub-sector in the World Luxury Index is restricted to 5. The 20 companies with the highest revenue percentage are included in the index.

**Review frequency:** The index is reviewed once per year in September. Rebalancing takes place on a quarterly basis.

**Dissemination calendar:** STOXX Global Calendar

### 13.3.3 ONGOING MAINTENANCE

**Replacements:** A deleted component is replaced with the highest ranked non-component from the selection list and added with the weight based on its free-float market capitalization.

Ad-hoc Exit: not applicable

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.

## 1.16 idDAX 50 Equal Weight Index

The idDAX® 50 Equal Weight Index tracks the performance of the 50 largest and most liquid companies from the German stock market. It includes all stocks from the DAX®index (40) completed with the 10 most liquid companies from the Regulated Market at FWB – Frankfurt®Stock Exchange.

## 2.15 idDAX 50 Equal Weight Index

The idDAX 50 Equal Weight Index uses the compositions of the DAX index and completes it with the 10 companies with highest turnover from the Regulated Market on FWB Frankfurt Stock Exchange that fulfil the basic criteria for DAX selection indices as outlined in section 4.1.1.1 in the Guide to the DAX

### 14. IdDAX Indices

### 14.1. IdDAX 50 Equal Weight Index

### **14.1.1 OVERVIEW**

The idDAX 50 Equal Weight Index tracks the performance of the 50 largest and most liquid companies from the German stock market. It includes all stocks from the DAX index (40) completed with the 10 most liquid companies from the Regulated Market at FWB – Frankfurt Stock Exchange.

**Universe:** Prime All Share + General All Share

**Weighting Scheme:** The index is equal weighted.

Base value and dates: 100 on March 21, 2005.



Equity Indices as reported in the DAX Selection Indices ranking list.

The sum of the turnover determined on the FWB Frankfurt Stock Exchange for the respective share classes of a company is defined as the order book volume. The reporting date for collecting data is the last trading day of the month for which the ranking list is created. The ranking list is created and published monthly by STOXX Ltd. For more information about the DAX Selection indices, please consult Section 4 of the Guide to the DAX Equity Indices.

All components are equally weighted. Between two chaining dates the weighting factors qiT which are derived out of the weight (cp. Chapter 3.4.2) are kept constant.

The base date of idDAX 50 Equal Weight is the 21 March 2005, with a base level of 100.

Chaining takes place on a quarterly basis, in line with the methodology applied to the DAX (cf. Guide to the DAX Equity Indices).

The idDAX 50 Equal Weight index is calculated as performance (net and gross return) and price index in real time every 1 seconds, between 9.00 a.m. and 5.55 p.m. CET in Euro. The calculation is by default based on Xetra price data. idDAX 50 Equal Weight index uses the values of the constituent elements (applying currency conversion, if necessary) in calculation its index value and is expressed in index points, reflecting the index-specific currency. 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. idDAX 50 Equal Weight index is available in the currencies set forth in the Vendor Code Sheet which is available under https://www.daxindices.com/ressourcen.

The idDAX 50 Equal Weight index is subject to Extraordinary Index Review as any other Selection Index as described in section 5 of the Guide to the DAX Equity Indices. A deleted company is replaced by the highest turnover company from the last ranking list.

# 3.12 idDAX 50 Equal Weight

Dissemination calendar: Xetra Calendar

### 14.1.2 INDEX REVIEW

**Selection list:** The selection list is updated and published on a monthly basis on the 4<sup>th</sup> trading day of the month. The cut-off date is the last trading day of the month for which the selection list is created.

Component selection: The idDAX 50 Equal Weight Index uses the compositions of the DAX index and completes it with the 10 companies with highest turnover from the Regulated Market on FWB Frankfurt Stock Exchange that fulfil the basic criteria (see section 5.4) as reported in the DAX, MDAX and SDAX selection list. The sum of the turnover determined on the FWB Frankfurt Stock Exchange for the respective share classes of a company is defined as the order book volume.

**Review frequency:** The index is reviewed on a quarterly basis, in line with the methodology applied to the DAX.

**Weighting factors:** All components are equalweighted on a quarterly basis. The weightings are published on the second Friday of each quarter, one week prior to quarterly review implementation using Thursday's closing prices.

Weighting factor = (100,000,000,000 / closing price of the stock in EUR) and rounded to integers.

## 14.1.3 ONGOING MAINTENANCE

**Replacements:** A deleted component is replaced by the highest turnover stock from the last selection list. The replacement will enter the index with the same weight the old component had, based on the closing price of four trading days prior to the Effective date of the replacement.

**Ad-hoc Exit:** A component that is in breach with the basic criteria as described in chapter 5.4.2 is removed from the index with two trading days' notice.

Ad-hoc Entry: not applicable

**Spin-offs:** Spin-off companies are not eligible to stay in the index.



### 3.12.1 Index Formula

The idDAX 50 Equal Weight Index uses the Laspeyres index formula and are calculated as follows:

$$Index_{t} = K_{T} \cdot \frac{\sum_{i=1}^{n} p_{it} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^{n} p_{i0} \cdot q_{i0}} \cdot Base$$

whereby:

cit = Adjustment factor of company i at time t

n = Number of shares in the index

pi0 = Closing price of share i on the trading day before the first inclusion in the index

pit = Price of share i at time t

qi0 = Weighting factor of company i on the trading day

before the first inclusion in the idDAX

50 Equal Weight Index

qiT = Weighting factor of company i at time T

t = calculation time of the index

KT = Index-specific chaining factor valid as of chaining

T = Date of the last chaining

The calculation is based on the input data used for calculating the DAX index (cf. DAX Equity Indices).

## 3.12.2 Chaining

The chaining9 procedure for idDAX 50 Equal Weight Index takes place as described in chapters 3.1.5, 3.1.6, 3.1.7 and 3.1.8.

# **Annex III -** New sections of the DAX Equity Index Methodology Guide previously not being part of any guide

# **New Rule - DAX Equity Index Methodology Guide**

# 3. Coverage

### 3.1. DAX Investable Universe

The DAX investable universe is all common stocks and equities with similar characteristics listed on FWB Frankfurt Stock Exchange that provide real-time and historical component and currency pricing.

This universe and the following framework described in sections 3, 4 and 5 is used for the index methodologies referenced in this guide and calculated by STOXX.

## 3.2. International Equities Investable Universe



The International Equities investable universe is all common stocks and equities with similar characteristics from financial markets listed below that provide real-time and historical component and currency pricing.

This universe and the following framework described in sections 3 and 4 is used for the index methodologies referenced in this guide and calculated by STOXX.

Americas			
NYSE (US)	Mexican Stock Exchange (MX)	B3 S.A. – Brasil, Bolsa, Balcao (BR)	
Nasdaq (US)	Lima Stock Exchange (PE)	Buenos Aires Stock Exchange (AR)	
Toronto Stock Exchange (CA)	Bolsa de Valores de Colombia (CO)	Santiago Stock Exchange (CL)	

	All Europe	
Athens Stock Exchange (GR)	EURONEXT Paris (FR)	NASDAQ Helsinki (FI)
Bolsa De Madrid (ES)	EURONEXT Amsterdam (NL)	NASDAQ Iceland (IS)
Deutsche Boerse (DE)	EURONEXT Brussels (BE)	NASDAQ Stockholm AB (SE)
London Stock Exchange (GB)	EURONEXT Lisbon (PT)	NASDAQ Riga (LV)
SIX Swiss Exchange (CH)	EURONEXT Dublin (IE)	NASDAQ Tallinn AS (EE)
Vienna Stock Exchange (AT)	EURONEXT Milan (IT)	NASDAQ Vilnius (LT)
Bucharest Stock Exchange (RO)	Oslo Stock Exchange (NO)	Ljubljana Stock Exchange (SI)
Budapest Stock Exchange (HU)	Malta Stock Exchange (MT)	Macedonian Stock Exchange (MK)
Bulgarian Stock Exchange (BG)	Cyprus Stock Exchange (CY)	Zagreb Stock Exchange (HR)
Warsaw Stock Exchange (PL)	Istanbul Stock Exchange (TR)	Belgrade Stock Exchange (RS)
Prague Stock Exchange (CZ)	NASDAQ Copenhagen (DK)	

	Asia/Pacific	
Tokyo Stock Exchange (JP)	Taiwan Stock Exchange (TW)	Philippine Stock Exchange (PH)
Stock Exchange of Hong Kong (HK)	Bursa Malaysia (MY)	Hanoi Stock Exchange (VN)
Shanghai Stock Exchange (CN)	Singapore Exchange (SG)	Ho Chi Minh Stock Exchange (VN)
Shenzhen Stock Exchange (CN)	Stock Exchange of Thailand (TH)	Bombay Stock Exchange (IN)
Australian Securities Exchange (AU)	Indonesia Stock Exchange (ID)	Pakistan Stock Exchange (PK)
Korea Exchange (KR)	New Zealand Exchange (NZ)	

Middle East and Africa			
Tel Aviv Stock Exchange (IL)	Riyadh SE (SA)	Tunis Stock Exchange (TN)	
Abu Dhabi Exchange (AE)	Kuwait Exchange (KW)	Casablanca Stock Exchange (MA)	
Bahrain SE (BH)	Muscat SE (OM)	Egyptian Exchange (EG)	
Doha Securities Mkt (QA)	Johannesburg Stock Exchange (ZA)	Nigerian Stock Exchange (NG)	
Dubai Financial Markets (AE)	NASDAQ Dubai (AE)		



### 4. Index Characteristics

# 4.1. Market Capitalization-Weighted Indices and Price-Weighted Indices

The Free-Float Market Capitalization determines the weights of each constituent in Free-Float Market Capitalization weighted indices. Price-weighted indices are weighted by the price and another appropriate weighting factor. For details on the calculation formula please consult the DAX Equity Index Calculation Guide and the weighting factor definition in this document.

### 4.2. Selection Lists

The Selection Lists are produced for indices with a fixed number of constituents in order to determine replacements for any component deleted from the indices intra-quarter. The Selection Lists are calculated based on the most recent data as known to STOXX at the cut-off date, which corresponds to the last trading day of the previous month.

Selection Lists can also indicate possible changes in the composition of the index at the next review.

### 4.2.1. Selection Lists Publication

Unless specified otherwise in the respective index methodology, Selection Lists are published on the 3<sup>rd</sup> trading day of a month after 10 p.m. CET.

The cut-off date for the creation of the Selection Lists is, unless specified otherwise, the last trading day of the month (at 5:30 p.m. CET) preceding the month in which the Selection List will be created, e.g., May 31<sup>st</sup> for the June selection list.

## 4.3.1. Components Announcement

Component changes are announced:

- » On the 3rd trading day of the review month after 10 p.m. CET for DAX Bblue-Cchip indices and major benchmark indices.
- » On the 4th trading day after 10 p.m. CET of the review month for DAX ESG indices and Scale 30

## 4.4. Deletions from a parent index

An index that is referred to as investable universe in the "Overview" section of the methodology for another index is defined as the parent of that index. If a component is deleted from a parent index, it is deleted from all child indices as well with the same notice period, unless stated otherwise. This does not apply to cases where the deletion in the parent index is due to an ordinary index review.

### 5.12.3. Average Daily Traded Value (ADTV)

For liquidity weighted indices, ADTVs are applied on stock level. For each stock i belonging to the observed country c, all prices and traded quantities available during the selected calendar period are taken: this may lead to a different number  $N_i$  of total records per each stock i.

To simplify the identification of non-trading days, for each stock the number  $NrNull_i$  of null records is counted; then an adjustment factor for non-trading days is calculated for each country c as:

$$NTD\_adj_c = \min_{i \in c} \{NrNull_i\}$$



Consequently, the ADTV for stock i belonging to country c is calculated as:

$$ADTV_{i \in c, \left[t_{1}, t_{N_{i}}\right]} = \frac{\sum_{t=t_{1}}^{t_{N_{i}}} p_{i, t} * ts_{i, t} * x_{i, t}}{N_{i} - NTD\_adj_{c \in i}}$$

where

 $p_{i,t}$  = close price of stock (i) at time (t)

 $ts_{i,t}$  = number of shares of company (i) traded at time (t)

 $x_{i,t}$  = exchange rate from currency of company (i) to base currency of the index at time (t)

### 5. Stock Characteristics

Index values are calculated within the DAX framework based on, but not limited to, one or more of the following characteristics. These characteristics are screened during the quarterly review process (ordinary adjustment) and extraordinarily outside of the review period in case of corporate actions. Please refer to the DAX Equity Index Calculation Guide for further details about extraordinary adjustments and corporate actions treatment. To access the latest information about extraordinary adjustments subscribe to the STOXX E-Mail distribution list and download regularly the Corporate Action forecast.<sup>7</sup>

## **5.1. Country Assignment**

### 5.1.1. German Market

All securities listed on the Regulated Market segments (Prime Standard and General Standard) and the Regulated unofficial markets, i.e. Open Market segments, (Scale, Quotation Board) of the Frankfurter Wertpapierbörse (FWB, the Frankfurt Stock Exchange) constitute the German Market.<sup>8</sup>

### 5.1.2. International Markets

For the international indices described in sections 12 and 13, the STOXX country and regional classifications pursuant to the STOXX index methodology guide apply.

## 5.2. Currency

Each stock is uniquely assigned a specific currency depending on the selected listing. In case of currency change for a given stock or for a country, the new currency is applied on the Effective date of the currency change for the given stock or for the concerned country.

## 5.5. Corporate Actions

All index components are adjusted for corporate actions. Any event is treated in the same way in all indices. Please consult the DAX Equity Index Calculation Guide for the detailed treatments.

# 5.11 Volume-Weighted Average Price

<sup>&</sup>lt;sup>7</sup> Registration - STOXX (stoxx.com)

<sup>&</sup>lt;sup>8</sup> The admission criteria to each market segment can be found in the Exchange Rules for the Frankfurter Wertpapierbörse



The VWAP is defined as the sum of the product of execution price and volume of each trade for a stock during the calculation period, divided by the total trading volume of that stock during the calculation period.

# 5.9. Weighting Factor

Weighting factors are applied in price-weighted indices instead of the factor "shares times free float". Weighting factors are calculated on the basis of other criteria like for example dividend data. Weighting factors are adjusted for corporate actions. The weighting factor multiplied by the price of the share determines the weight of a company within a price-weighted index. Please consult the DAX Equity Index Calculation Guide for further details.

## 5.10. Weighting Cap Factors

The factor limits the maximum weighting for a stock at the time of the review. Weighting cap factors are updated during the regular quarterly index reviews and not adjusted for corporate actions. The weighting cap factors are used to achieve a diversification and avoid a dominance of a single component in an index. Depending on the objective of the index different maximum weights are sets.

Further details can be found in the individual index methodologies of this guide.

# 5.11 Volume-Weighted Average Price

The VWAP is defined as the sum of the product of execution price and volume of each trade for a stock during the calculation period, divided by the total trading volume of that stock during the calculation period.

## 5.11.1 Adjusted VWAP

The VWAP is adjusted for corporate actions that happened during the calculation period. The adjusted VWAP is calculated as follows:

$$VWAP_{it}^{adj} = VWAP_{it} \bullet af_{it}$$

With

$$af_{it} = rac{c_{it}}{c_{i,t=c}}$$

And

$$c_{it} = c_{i,t-1} \bullet rac{p_{i,t-1}}{p_{i,t-1}^{adj}}$$

### where

 $af_{it}$  = adjustment factor of stock (j) at time (t)  $c_{it}$  = correction factor of stock (j) at time (t)

 $c_{i,t-1}$  = previous day (t-1) correction factor of stock (i). Set to 1 at the start of the calculation

period (usually 20 trading days before review cut-off).

 $c_{i,t=c}$  = correction factor of stock (i) at selection list cut off (t=c)

 $p_{i,t-1}$  = previous day (t-1) close price of stock (j)

 $p_{i,t-1}^{adj}$  = previous day (t-1) adjusted close price of stock (j)

## 5.11.2 VWAP Adjustments in Case of Mergers and Takeovers

In case of a merger or takeover during the calculation period, the share class that is included in the index on a given date is used for the adjusted VWAP calculation for that date. On the day prior to the Effective date of the replacement, the adjustment factor is calculated using the close price of the share class leaving the index and the adjusted close price of the share class entering the index. The new share class inherits the adjustment factors of the old share class prior to the replacement.



# 5.13. Regulatory Trading Prohibitions

# 5.13.1 U.S. Securities and Exchange Holding Foreign Companies Accountable Act (HFCAA)

Companies which are on the "Conclusive list of issuers identified under the HFCAA" published by the U.S. Securities and Exchange Commission (SEC) are screened for eligibility in the respective International Region-Oriented Indices (section 12) and International Trend and Industry Indices (section 13) universe on the last trading day of January, April, July, and October, as follows:

- » if a company being part of the conclusive list reaches the trading prohibition term within the next 6 months, the stock is deleted from the respective universe of International Region-Oriented Indices and International Trend and Industry Indices Effective the next trading day following the 3rd Friday of March, June, September and December.
- » if a company being part of the conclusive list reaches the trading prohibition term within the next 6 months, the stock is ineligible to the respective universe of International Region-Oriented Indices and International Trend and Industry Indices.

If an alternative listing is available for companies which are on the "Conclusive list of issuers identified under the HFCAA", and subject to the International Region-Oriented Indices and International Trend and Industry Indices universe coverage, the alternative listing might be added to the respective universe of International Region-Oriented Indices and International Trend and Industry Indices only at the review cutoff.

STOXX will communicate on the first trading day of March, June, September, and December the list of identified securities that are excluded from the respective universe of International Region-Oriented Indices and International Trend and Industry Indices.