

# Guide to the Equity Indices of Deutsche Börse AG

Version 9.2.0

Valid from 31<sup>st</sup> August 2018

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### **Relevance of the Index Guide - Transition Rules**

The rules for the composition of ranking lists, as specified in section 4.1.1.2, are relevant as of 31<sup>st</sup> Aug. 2018. However, for index calculation, they will be applied for the first time in the context of the regular chaining in Sep. 2018.

If an extraordinary deletion of a company from one of the indices will occur until the regular chaining in September, the alternate candidate will be determined based on a ranking list that follows the rules defined in the Index Guide version [8.7].

The parameters defined in this Guide Book for the MDAX, SDAX, TecDAX as well as for indices derived thereof (e.g. HDAX) will be reflected in the indices for the first time after the application of the new selection rules in the context of the regular chaining in Sep. 2018.

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## General Information

In order to ensure the highest quality of each of its indices, Deutsche Börse AG exercises the greatest care when compiling and calculating equity indices on the basis of the rules set out in this Guide to the Equity Indices of Deutsche Börse AG ("Guide").

However, Deutsche Börse AG cannot guarantee that the various indices, or the various ratios that are required for index compilation and computation purposes, as set out in this Guide, are always calculated free of errors. Deutsche Börse AG accepts no liability for any direct or indirect losses arising from any incorrect calculation of such indices or ratios.

Deutsche Börse AG generally makes decisions regarding the method of calculating its equity indices after consulting the Working Committee to the best of its knowledge and belief. Deutsche Börse AG reviews the validity of its index concepts and the rules on index calculation each quarter. Deutsche Börse AG consults the Working Committee for Equity Indices for this purpose. Furthermore, Deutsche Börse AG may also decide to undertake a market consultation. Once a decision on a change to index methodology has been made, a notification will be issued for public comment with a reasonable notice period. Deutsche Börse AG shall not be liable for any losses incurred after such decisions are made.

The equity indices of Deutsche Börse AG in no way represent a recommendation for investment. In particular, the compilation and calculation of the various indices shall not be construed as a recommendation of Deutsche Börse AG to buy or sell individual securities, or the basket of securities underlying a given index.

Note further that only the German language version is binding.

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**History of Amendments to the Rules and Regulations**

effective 24/09/2018	- Termination of calculation and dissemination of Midcap Market Index
effective 31/08/2018	- Creation of version 9.2.0: - Addition of note about the relevance of the Index Guide / transition rules - Addition of chapter 4.1.1.4: Transition rules
effective 05/06/2018	- Creation of version 9.1.0: - Launch of DAX Net Return CHF Index - Chapter 9.6: Inclusion of DAX Currency Variants
effective for index calculation as of September rebalancing 2018	- Creation of Version 9.0.0 - Change of index methodology for MDAX, SDAX, TecDAX and derived indices (e.g. HDAX): Elimination of the separation between Tech and Classic in selection criteria for MDAX and SDAX, inclusion of specific DAX-companies in TecDAX - Increase in number of components from 50 to 60 for MDAX and from 50 to 70 for SDAX
effective 28/05/2018	- Creation of version 8.6.0: - Chapter 4.1.1.3 1): Adjustment of Fast Exit Rule
effective 16/05/2018	- Creation of version 8.5.0: - Launch of DAX <sup>®</sup> ex Financials 30 Net Return Index
effective 07/02/2018	- Creation of version 8.4.0: - Launch of Scale 30 Index
effective 29/12/2017	- Creation of version 8.3.0: - Adjustment of selection criteria for ex Financials indices 4.1.3 & 4.1.5
effective 08/05/2017	- Creation of version 8.2.1: - Adaption of contact details
effective 15/03/2017	- Creation of version 8.2.0: - Discontinuation of Entry All Share Index and Entry Standard Index - Change of index methodology for all indices that are based on the Entry Standard Segment: Scale All Share replaces Entry All Share Index
effective 01/03/2017	- Creation of version 8.1.0: - Chapter 4.1.1.2: Introduction sequential creation of the ranking list in order to make changes in DAX <sup>®</sup> transparent on MDAX <sup>®</sup> , SDAX <sup>®</sup> , TecDAX <sup>®</sup> ranking lists - Chapter 5.1.7: Adjustment: requirements for conversion into tendered shares
effective 30/11/2016	- Creation of version 8.0.2: - Chapter 4.1.1.1: Correction of wording in chapter 4.1.1.2 - Chapter 4.1.1.1: Shifting of the basic criteria „minimum reference since first listing“ in 4.1.1.2 - Chapter 6.3.3: Concretion of the DAX <sup>®</sup> -opening criteria,

	Introduction of net return versions for DAX <sup>®</sup> , MDAX <sup>®</sup> , SDAX <sup>®</sup> , TecDAX <sup>®</sup> - Chapter 3.5.1: Introduction of XDAXDAX <sup>®</sup> Index
effective 05/09/2016	- Creation of version 8.0.1: - Change only applicable to English version of the Guide to the Equity Indices of Deutsche Börse - 4.1.1.3: - Correction of wording within Regular Exit rule
effective 05/09/2016	- Creation of version 8.0: - Chapter 4.1.1: Introduction of entirely quantitative rules for index composition of MDAX <sup>®</sup> , SDAX <sup>®</sup> and TecDAX <sup>®</sup> after model of DAX <sup>®</sup>
effective 31/05/2016	- Creation of version 7.2: - Chapter 4.1.1.1: Correction of paragraph “Expanded basic criteria for foreign companies”
effective 26/04/2016	- Creation of version 7.1: - Chapter 3: Correction of typo in table ‘General Index Information’ falsely displaying the General Standard Index as FF-MCAP when it is actually MCAP weighted - Chapter 6.3.5: Edit of wording for the index-specific deviation threshold from one index tick to another
effective 18/01/2016	- Chapter 6.3: Shift of the DAX <sup>®</sup> opening criterion from 9:03 a.m. to 9:06 a.m.
effective 15/12/2015	- Version 7.0: Restructuring of Guidebook

CDAX<sup>®</sup>, Classic All Share<sup>®</sup>, DAX<sup>®</sup>, Eurex<sup>®</sup>, FDAX<sup>®</sup>, FWB<sup>®</sup> Frankfurter Wertpapierbörse, HDAX<sup>®</sup>, MDAX<sup>®</sup>, NEMAX50<sup>®</sup>, ODAX<sup>®</sup>, SDAX<sup>®</sup>, SMAX<sup>®</sup>, TecDAX<sup>®</sup>, Xetra<sup>®</sup>, X-DAX<sup>®</sup>, X-MDAX<sup>®</sup>, X-TecDAX<sup>®</sup> and XTF<sup>®</sup> Exchange Traded Funds are registered trademarks of Deutsche Börse AG.



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## 1 Introduction

### 1.1 Principles for Index Calculation

The equity indices of Deutsche Börse AG 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

### 1.2 Advisory Body

The Working Committee for Equity Indices (Arbeitskreis Aktienindizes) advises Deutsche Börse AG on all issues related to selection indices, recommending changes to the composition of its indices on the basis of the aforementioned principles and the regulations in this Guide (see section 3.1). The Working Committee acts as an advisory body based on the basic principles mentioned and the rules of these guidelines. In this capacity, it can recommend any necessary adjustments to the rulebook.

The Working Committee for Equity Indices consists of Deutsche Börse AG employees and representatives of leading national and international financial institutions. The Working Committee's meetings usually take place on the respective fifth trading day in March, June, September and December. Extraordinary meetings may also be convened.

Representatives of the following financial institutions currently belong to the Committee:

Allianz Global Investors

BlackRock Asset Management Deutschland AG

Commerzbank AG

Deka Investment GmbH

Deutsche Bank AG

HSBC Trinkaus & Burkhardt AG

MEAG Asset Management GmbH

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UBS Deutschland AG

UniCredit Group

Union Investment Privatfonds GmbH

### 1.3. Unforeseeable Cases, Extreme Economic Situations and Market Disruptions

#### A) Exceptional rule for handling unforeseeable cases:

In the case of an exceptional, unforeseeable event that is not considered in this Guide, Deutsche Börse AG may, in consultation with the Working Committee, and in consideration of the respective facts, apply procedures that differ from those in this Guide. This holds true especially in cases where i) there are no applicable rules, ii) the application of present rules does not lead to a clear result, iii) the rules contradict each other, and/or iv) the application of these rules leads to an inappropriate situation on the capital market. An example of an inappropriate situation is if the strict application of the rules in this Guide when adjusting indices influences liquidity or prices on the capital market. In the case that Deutsche Börse AG makes a decision that is outside the parameters of this Guide, the decision will be announced with an appropriate notice period.

#### B) Consideration of extreme economic situations and market disruptions:

In times of extreme economic situations and market disruptions, especially in cases where the price source is unavailable (e.g. market suspension or restriction), Deutsche Börse AG will generally use the last available price data, in accordance with section 6.3.3.

Additional exceptions from this rulebook can also be made in times of extreme economic cases, e.g. postponement of an ordinary review date. All such changes will be published within an appropriate notice period.

### 1.4. Index Termination Policy

For the termination of an index or an index family for which there are financial products issued on the market, to the knowledge of Deutsche Börse AG, a market consultation will be initiated by Deutsche Börse AG in advance of the termination. The length of the consultation period will be defined in advance based on the specific issues of each proposed termination. During the term of 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, Deutsche Börse AG may rethink its decision to terminate an index or an index family. At the end of the consultation period, Deutsche Börse AG will publicly announce its final decision about the termination. A transition period will be granted in the event of termination.

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For the termination of an index or index family for which there are no financial products issued on the market, no market consultation will be conducted.

## 2 Determination of Index Parameters

### 2.1 Ex Dividend Date

The ex dividend date is the date after which securities without a specific capital measure, e.g. spin-off, or without a specific right, e.g. dividend claim or subscription right, are traded.

### 2.2 Fixed Holdings

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

### 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 15a of the German Securities Trading Act (WpHG),
- 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

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

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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.

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, 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 WpHG and WpÜG.

The various criteria laid down in nos. 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 described above, each ISIN under which shares are traded is considered a separate share class.

If Deutsche Börse AG determines and publishes a 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 Deutsche Börse AG 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. Deutsche Börse AG shall, however, provide information on the correction to be made to the free float factor at the next scheduled chaining date on the website [www.dax-indices.com](http://www.dax-indices.com) immediately after becoming aware of such facts or circumstances.

## 2.4 Free Float Market Capitalisation

Free float market capitalisation is the product of market capitalisation and the free float factor.

## 2.5 Share Capital

The share capital is the number of all outstanding shares in a company.

## 2.6 Main Focus of Trade on Xetra

A company focuses its trading volume on Xetra® if at least 33% of its total turnover within the EU or the EFTA has been transacted via the FWB® Frankfurt Stock Exchange over the

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last 12 months. The total turnover includes the turnover of all stock listings belonging to a company that arise due to trading on regulated exchanges and multilateral trading facilities (MTF<sup>1</sup>).

## 2.7 Legal Headquarters

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

## 2.8 Market Capitalisation

The product of the number of outstanding shares in a company and the price of the respective share class is defined as the market capitalisation of a share class.

## 2.9 Operating Headquarters

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

## 2.10 Order Book Volume

The sum of the turnover determined on the FWB<sup>®</sup> Frankfurt Stock Exchange for the respective share classes of a company is defined as the order book volume.

Any given period, e.g. 12 calendar months, can be selected as a review period for reviewing the turnover. This is set individually for each index type.

## 2.11 Sector Affiliation

Sector assignment is dependent upon the respective company's sales focus. Where, in individual cases, this has changed, the company can be removed from the previous sector and can be included in another one on the next chaining date. For that matter the Working Committee can also be consulted as an advisory council.

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<sup>1</sup> according to classification by ESMA

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## 2.12 XLM – Xetra® Liquidity Measure

The Xetra® Liquidity Measure (XLM)<sup>2</sup> is given in basis points (100 basis points = 1 percent) and relates to the relevant market impact costs of the so-called “roundtrip” (simultaneous purchase and sale of a position) for a given order volume. Since July 2002, the measure has been calculated over the entire trading day for all shares in continuous trading on Xetra®. An XLM of 10 basis points and an order volume of €25,000, for example, mean that the market impact costs for the purchase and sale of this share totalled €25. The lower the XLM, the lower the market impact costs for the trading of a share and the higher the liquidity of a share and its trading efficiency.

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<sup>2</sup> <http://www.xetra.com/xetra-de/handel/marktqualitaet/xlm-xetra-liquiditaetsmass>

### 3 General Index Information

	Index	No. companies	Calc. Basis	Base date	Sector	Segment	Weighting	Cap limit <sup>3</sup>	Trading Form	Calc. <sup>4</sup> interval
Selection indices	DAX®	30	1000	30.12.1987	Tech & Classic	Prime	FF-MCap	10 %	Continuous	1 Sec.
	MDAX®	60	1000	30.12.1987	Tech & Classic	Prime	FF-MCap	10 %	Continuous	1 Sec.
	SDAX®	70	1000	30.12.1987	Tech & Classic	Prime	FF-MCap	10 %	Continuous	60 Sec.
	TecDAX®	30	1000	30.12.1997	Tech	Prime	FF-MCap	10 %	Continuous	1 Sec.
	HDAX®	Variable	500	30.12.1987	Tech & Classic	Prime	FF-MCap	10 %	Continuous	60 Sec.
	General Standard Index	200	1000	21.03.2003	-	General	MCap	-	Continuous & One-auction	60 Sec.
	Scale 30	30	1000	17.03.2017	-	Scale	MCap	10 %	Continuous	60 Sec.
	DAX® ex Financials	Variable	1000	02.12.2002	-	Prime	FF-MCap	-	Continuous	1 Sec.
	DAX® ex Financials 30	30	1000	30.12.2003	-	Prime	FF-MCap	10 %	Continuous	1 Sec.
International	DAX® International 100	100	1000	20.03.2008	Tech & Classic	Prime, General & Scale	MCap	15 %	Continuous	60 Sec.
	DAX® International Mid	100	1000	20.03.2008	Tech & Classic	Prime, General & Scale	MCap	15 %	Continuous & One-auction	60 Sec.
All Share-Indices	Prime AS	Variable	1000	21.03.2003	Tech & Classic	Prime	FF-MCap	-	Continuous & One-auction	60 Sec.
	CDAX®	Variable	100	30.12.1987	Tech & Classic	Prime & General	FF-MCap	-	Continuous & One-auction	60 Sec.
	Tech AS	Variable	1000	30.12.1997	Tech	Prime	FF-MCap	-	Continuous & One-auction	60 Sec.
	Classic AS	Variable	1000	21.03.2003	Classic	Prime	FF-MCap	-	Continuous & One-auction	60 Sec.

<sup>3</sup> As of the chaining day in September 2006 the cap limit was lowered to 10 percent.

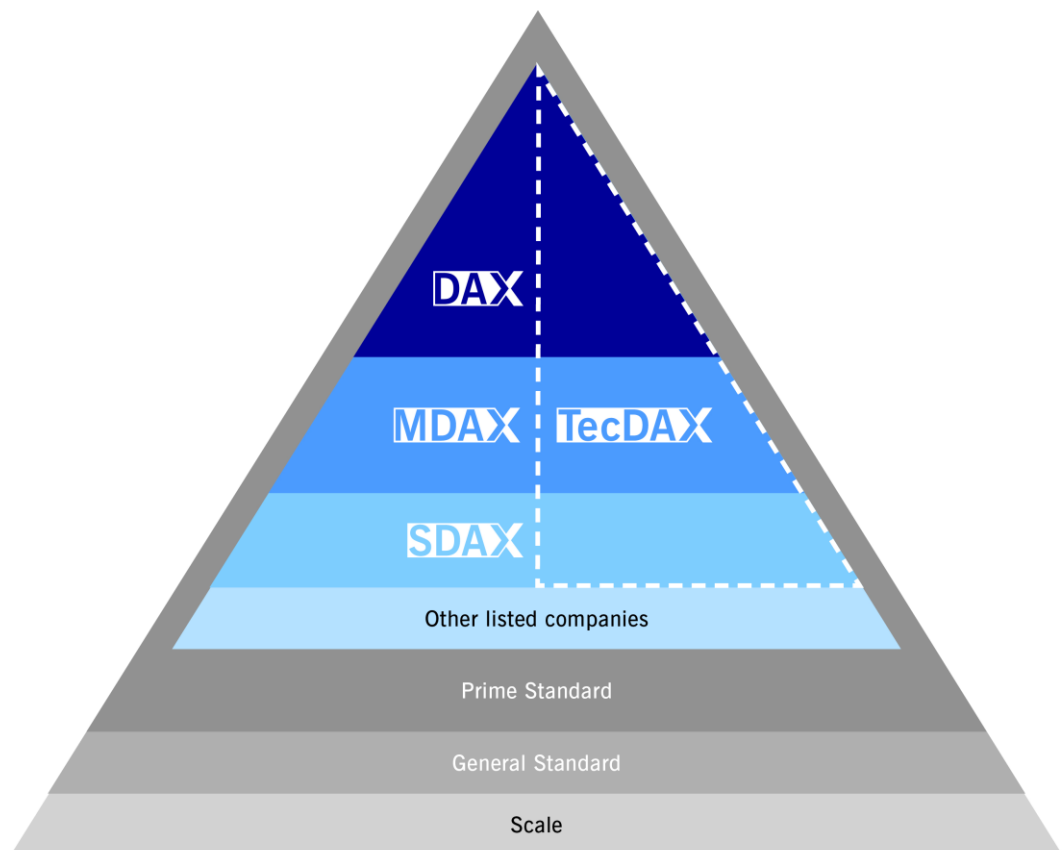
<sup>4</sup> DAX, MDAX and TecDAX are calculated once a second since 1 January 2006.

	Index	No. companies	Calc. Basis	Base date	Sector	Segment	Weighting	Cap limit <sup>3</sup>	Trading Form	Calc. <sup>4</sup> interval
	General AS	Variable	1000	21.03.2003	-	General	MCap	-	Continuous & One-auction	60 Sec.
	Scale AS	Variable	1000	28.02.2017	-	Scale	Equal-weighted	-	Continuous & One-auction	60 Sec.
Sektor-Indices	DAXsupersector	Variable	100	21.03.2003	Tech & Classic	Prime	FF-MCap/GG	10%	Continuous & One-auction	60 Sec.
	DAXsector	Variable	100	30.12.1987	Tech & Classic	Prime	FF-MCap	-	Continuous & One-auction	60 Sec.
	DAXsubsector	Variable	100	21.03.2003	Tech & Classic	Prime	FF-MCap	-	Continuous & One-auction	Once a day
	DAXsector All	Variable	100	20.03.2008	-	Prime, General & Scale	MCap	-	Continuous & One-auction	60 Sec.
	DAXsubsector All	Variable	100	20.03.2008	-	Prime, General & Scale	MCap	-	Continuous & One-auction	Once a day



### 3.1 Selection Indices

The diagram below provides an overview of the most important selection indices:



#### DAX®

The DAX® Index tracks the segment of blue chips permitted in Prime Standard. It includes the 30 largest companies with the highest turnover on the FWB® Frankfurt Stock Exchange. The detailed admission criteria are given in section 4.1.

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

### **MDAX<sup>®</sup>**

MDAX<sup>®</sup> includes the 60 companies which follow after DAX<sup>®</sup> companies in terms of market capitalisation and turnover. The detailed admission criteria are given in section 4.1.

### **SDAX<sup>®</sup>**

SDAX<sup>®</sup> includes the 70 companies which follow after MDAX<sup>®</sup> companies in terms of market capitalisation and turnover. The detailed admission criteria are given in section 4.1.

### **TecDAX<sup>®</sup>**

The TecDAX<sup>®</sup> Index includes the 30 largest and most liquid tech companies in terms of market capitalisation and turnover. Tech is hereby defined according to the sector classification in section 9.5. The detailed admission criteria are given in section 4.1. TecDAX<sup>®</sup> has continued NEMAX<sup>®</sup> 50's historical index data since the latter's discontinuation.

### **HDAX<sup>®</sup>**

Together, the 30 companies from DAX<sup>®</sup> Index, the 60 companies from MDAX<sup>®</sup> Index and the 30 companies from TecDAX<sup>®</sup> index form HDAX<sup>®</sup>'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 Prime Standard without any sector restriction.

### **General Standard Index**

The General Standard Index includes the 200 companies with the highest turnovers from the General Standard segment. To prevent the largest companies measured by market capitalisation from dominating the General Standard segment, only companies with a market capitalisation of less than €5 billion are considered.

### **Scale 30 Index**

The Scale 30 Index selects the most liquid companies from the Scale segment. It covers the 30 most liquid companies by 12M Turnover that are trading on Xetra. Similar to the methodology of the DAX family, trading value from Frankfurt as well as Xetra are taken into account. 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<sup>®</sup> ex Financials Index**

DAX<sup>®</sup> ex Financials Index corresponds to the composition of the DAX<sup>®</sup> Index excluding the FIRE supersector (banks, financial services and insurance). It therefore tracks the blue chips permitted in Prime Standard but which are not part of the FIRE supersector. It thus includes

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a variable number of companies which tends to be lower than 30. The detailed admission criteria are given in section 4.1.3.

### **DAX<sup>®</sup> ex Financials 30 Index**

The DAX<sup>®</sup> ex Financials 30 Index tracks the blue chips permitted in Prime Standard which do not belong to the FIRE supersector (banks, financial services and insurance). Unlike DAX<sup>®</sup> ex Financials, it always has 30 companies. These are selected according to market capitalisation and turnover. The detailed admission criteria are given in section 4.1.5.

## **3.2 All Share Indices**

### **Prime All Share**

Each of the companies listed on the FWB<sup>®</sup> Frankfurt Stock Exchange can decide whether to apply to be listed in General or Prime Standard. Inclusion in Prime Standard results in higher post-admission obligations regarding transparency. With Prime All Share, Deutsche Börse AG has introduced an index that measures the overall performance of all of the companies in this segment.

### **Technology All Share**

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

### **Classic All Share**

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

### **CDAX**

The CDAX<sup>®</sup> 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**

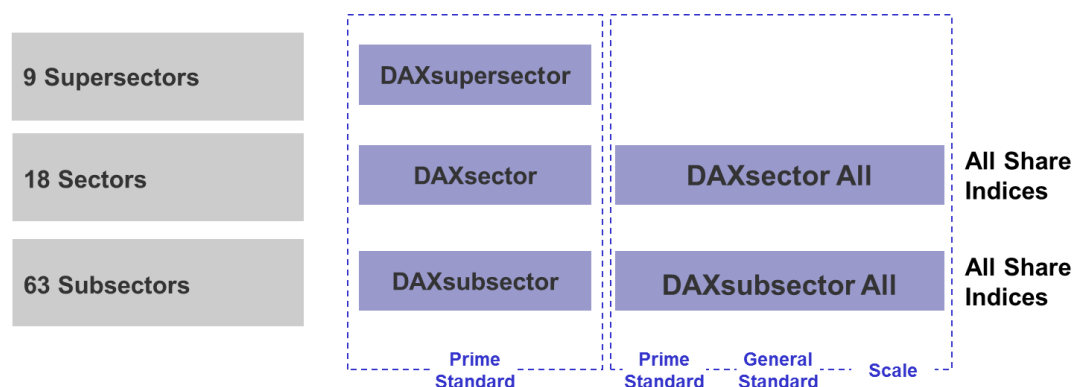
The Scale All Share Index includes all companies in the Scale segment. It therefore describes the overall performance of all companies in the Scale segment. The Scale All Share is geared

primarily towards qualified investors who are able to evaluate the opportunities and risks in a market segment with low transparency standards.

### 3.3 Sector Indices

Deutsche Börse 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.

For both the Prime segment as well as the larger portfolio, 18 sector indices and 63 subsector indices are provided. In addition nine supersector indices are calculated for the Prime segment. Sector and subsector indices are designed as All Share indices, whereas only companies with an ADTV<sup>5</sup> of at least €1 million qualify for the supersector indices. The various Prime sectors have been based on the historical index data of the CDAX<sup>®</sup> sector indices since April 1999. In the appendix a table shows the different supersectors, sectors and subsectors (cf. section 9.5). The classification of companies into the respective traditional or technology sectors is done on the basis of the subsectors (cf. section 9.5). The diagram below provides an overview of the sector indices:



### 3.4 International Indices

In order to provide a visibility platform for all German and foreign companies listed on the FWB<sup>®</sup> Frankfurt Stock Exchange, Deutsche Börse calculates international indices that each contain 100 German and 100 foreign companies. These 200 companies listed in either Prime Standard, General Standard or Scale segment are selected on the basis of their order book volumes on Xetra over the last three months. The DAX International 100 comprises the first 100 companies based on the previous three months' turnover and the subsequent 100 companies by the same criterion form the portfolio of DAX International Mid 100.

<sup>5</sup> ADTV = average daily trading volume

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## 3.5 Index-Based Calculation Products

### 3.5.1 X-Indices

The X-indices X-DAX<sup>®</sup>, X-MDAX<sup>®</sup> and X-TecDAX<sup>®</sup> are calculated on the basis of events and distributed from 8:00 am until 9:00 am (X-DAX<sup>®</sup>: until DAX-opening<sup>6</sup>) and from 5:30 pm until 10:15 pm. The calculation of the X-DAX Index is based on the daily comparison of the DAX<sup>®</sup> index values with the respective future. The calculation of the X-MDAX and the X-TecDAX is based on “cost of carry”-adjusted MDAX<sup>®</sup> and TecDAX<sup>®</sup> futures prices. The X-indices act as indicators for market development outside Xetra<sup>®</sup> trading hours.

The longer computation time of X-indices covers the entire trading time of US stock exchanges.

XDAXDAX<sup>®</sup> is calculated and distributed as a combination of X-DAX<sup>®</sup> and DAX<sup>®</sup>. This serves the need of market participants to monitor the price change of DAX<sup>®</sup> during the trading day including pre and post DAX<sup>®</sup> indicators in one time series. With XDAXDAX<sup>®</sup> DAX<sup>®</sup> and X-DAX<sup>®</sup> are merged and distributed using one ISIN.

### 3.5.2 Late/Early Indices

Outside Xetra<sup>®</sup> trading hours, Deutsche Börse calculates the indices L/E-DAX, L/E-MDAX, L/E-SDAX and L/E-TecDAX every 60 seconds using prices traded on Xetra Frankfurt (previously: FWB<sup>®</sup> floor trading). These indices correspond in composition to the respective DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup> and TecDAX<sup>®</sup> indices. They serve as an indicator of market development outside the regular Xetra<sup>®</sup> trading period for investors. All L/E indices are calculated as performance indices only.

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<sup>6</sup> Valid as of 8 February 2010.

## 4 Regular Index Review

Depending on the concept of composition, indices are either designed to be All Share indices (including Sector indices) or Selection indices.

### 4.1 Selection Indices

Deutsche Börse AG's selection indices represent the largest companies with the highest turnovers in your segment. These are selected according to market capitalisation and order book volume. The indices are DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup>, TecDAX<sup>®</sup>, HDAX<sup>®</sup>, General Standard Index, DAX<sup>®</sup> ex Financials Index and DAX<sup>®</sup> ex Financials 30 Index.

#### 4.1.1 DAX, MDAX, SDAX and TecDAX

##### 4.1.1.1 Basic Criteria

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

- An existing listing in the Prime Standard segment (i.e. there is no public information on the existence of an application for revocation pursuant to Section 46 of the Exchange Rules<sup>7</sup>)
- Continuous trading on Xetra<sup>®</sup>
- Minimum free float of 10%
- Legal headquarters or operating headquarters in Germany

Expanded basic criteria for foreign companies:

Foreign companies must

- have a registered office in Germany. Other than the registered office this can also be an operating headquarter
- or
- have their focus of trading volume on Xetra<sup>®</sup> (see section 2.6) and their Legal headquarters in an EU or EFTA country

##### 4.1.1.2 Equity Index Rankings

The selection of companies in the DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup> and TecDAX<sup>®</sup> indices is based on the quantitative criteria of order book volume and free float market capitalisation. 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 Deutsche Börse AG.

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<sup>7</sup> Confidential information available to the Listing Services Department of Deutsche Börse AG cannot be considered.

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### Creating the Ranking List

To create the ranking list, the parameters relevant for the allocation of a rank – order book volume and free float market capitalisation – are recorded and the basis criteria are checked on the recording date (last trading day of the month).

The following applies to free float market capitalisation:

A volume-weighted average price over 20-trading days (20-trading day VWAP) is used to calculate the free float market capitalisation. This is calculated as the average value of daily volume-weighted average prices based on Xetra® prices (VWAP) of the last 20 trading days in a class. 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 taken away, and the remainder of the relevant data is linearly projected for 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 projection purposes.
- If the transparency standard is changed (Scale segment, General and Prime Standard), the order book volumes from the original transparency standard are taken into account.
- In the case of a merger of two companies, the order book volumes of both companies are aggregated, provided that both companies were listed on the Frankfurt Stock Exchange prior to the merger. A requirement for aggregating order book volumes is that the company or companies that no longer exist are no longer listed separately on one of the transparency standards (Prime, General Standard or Scale segment or Basic Board) on the FWB® Frankfurt Stock Exchange. The order book volumes are aggregated retroactively at this point for the allocation of a rank.

### Inclusion in the Ranking List

There are two different Ranking Lists, one for DAX®, MDAX®, SDAX® and one for TecDAX®, where ranks start with 1 in each part.

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All of the share classes listed on Prime Standard on Xetra<sup>®</sup> are listed on the ranking list for DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup>. A ranking is given to the share classes that meet the basis criteria according to section 4.1.1.1. Companies that are first listed at Xetra<sup>®</sup> 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 ranking. 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 or most liquid share class is given a ranking.

If subscription rights issued as part of a capital increase are of value on the date of creating the ranking list, the market capitalisation 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 capitalisation will be adjusted accordingly.

The ranking list for TecDAX<sup>®</sup> exclusively contains companies that are defined within chapter 9.5 as "Tech". It is created in the same way as described above for DAX<sup>®</sup>, MDAX<sup>®</sup> and SDAX<sup>®</sup>.

#### **Exclusion from Ranking**

- 1) A company that is excluded from the selection indices due to a violation of the volatility criterion (see section 5.1.3) will only be considered for a ranking if its 30-day volatility (annualised volatility of the share price over the last 30 days) falls below 150 percent at the time of ranking and on any of the 14 trading days prior to this date. Re-inclusion in the ranking is also only possible for the company's class which was excluded from the index.
- 2) If a foreign company does not meet the trading criteria on Xetra<sup>®</sup> (see section 2.6) on the monthly ranking list, the company will not be ranked. A foreign company will only be ranked once it meets the trading criteria on Xetra<sup>®</sup> again.
- 3) To guarantee the position of the DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup> und TecDAX<sup>®</sup> indices as leading equity indices, Deutsche Börse AG reserves the right to exclude certain companies from being ranked on the ranking list after consultation with the Working Committee for Equity Indices. 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.

#### **4.1.1.3 DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup>, TecDAX<sup>®</sup>: Application of the selection criteria**

The index composition of DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup> and TecDAX<sup>®</sup> is reviewed quarterly based on the Fast Exit and Fast Entry rules. The index composition of DAX<sup>®</sup> is reviewed every



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September based on the Regular Exit and Regular Entry rules while, the index composition of MDAX<sup>®</sup>, SDAX<sup>®</sup> and TecDAX<sup>®</sup> is reviewed 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 capitalisation) or liquidity (order book volume), 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<sup>8</sup>

<u>DAX®</u>	Candidate rank FF MCap <sup>9</sup> /OB volume <sup>10</sup>	Alternate candidate rank FF MCap/OB volume	Mar	Jun	Sep	Dec
Fast Exit	45/45	35/35; 35/40; 35/45	X	X	X	X
Fast Entry	25/25	35/35	X	X	X	X
Regular Exit	40/40	35/35			X	
Regular Entry	30/30	35/35			X	
<u>MDAX®</u>	Candidate rank FF MCap/OB volume	Alternate candidate rank FF MCap/OB volume	Mar	Jun	Sep	Dec
Fast Exit	105/105	95/95; 95/100; 95/105	X	X	X	X
Fast Entry	85/85	95/95	X	X	X	X
Regular Exit	100/100	95/95	X		X	
Regular Entry	90/90	95/95	X		X	
<u>SDAX®</u>	Candidate rank FF MCap/OB volume	Alternate candidate rank FF MCap/OB volume	Mar	Jun	Sep	Dec
Fast Exit	175/175	165/165; 165/170; 165/175	X	X	X	X
Fast Entry	155/155	165/165	X	X	X	X
Regular Exit	170/170	165/165	X		X	
Regular Entry	160/160	165/165	X		X	
<u>TecDAX®</u>	Candidate rank FF MCap/OB volume	Alternate candidate rank FF MCap/OB volume	Mar	Jun	Sep	Dec
Fast Exit	45/45	35/35; 35/40; 35/45	X	X	X	X
Fast Entry	25/25	35/35	X	X	X	X
Regular Exit	40/40	35/35	X		X	
Regular Entry	30/30	35/35	X		X	

<sup>8</sup> The “Overview of rules” table provides a simplified overview of the application of selection criteria. The precise application of the rankings can be seen in rules 1-4.

<sup>9</sup> FF MCap: free float market capitalisation

<sup>10</sup> OB volume: Order book volume

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The selection of companies in the DAX<sup>®</sup>, MDAX<sup>®</sup>, SDAX<sup>®</sup> and TecDAX<sup>®</sup> indices is based on the quantitative criteria of free float market capitalisation and order book volume. The currently valid ranking list 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 worse rank than the 'candidate rank' in one of the two criteria of free float market capitalisation or order book volume (see the "Overview of rules" table; for example, greater than 45 in the free float market capitalisation criterion or greater than 45 in the order book volume criterion in the DAX<sup>®</sup> ranks). It is replaced by the company with the highest free float market capitalisation 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 35 in the DAX<sup>®</sup> ranks). If there are no companies that meet these conditions, the successor is determined by relaxing the order book volume criterion twice gradually, each time by five ranks (e.g. 35/40, then 35/45 in the DAX ranks). If there is still no company that meets the criteria, the company with a free-float market capitalization rank of equal to or less than the rank shown in the column 'alternate candidate rank' (e.g. less than or equal to 35 in DAX<sup>®</sup>) which has the highest turnover 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 both the free float market capitalisation and order book volume criteria (e.g. smaller than or equal to rank 25 for the free float market capitalisation criterion and smaller than or equal to rank 25 in the order book volume criterion in the DAX<sup>®</sup> ranks). The company with the lowest free float market capitalisation that is ranked worse than the 'alternate candidate rank' in one of the criteria is excluded (e.g. greater than 35 in one of the two criteria in the DAX<sup>®</sup> ranks). If there are no companies in the selection index that meet these criteria, the company with the lowest free float market capitalisation is removed from the selection index.
- 3) **Regular Exit:** A company in the selection index may be replaced if it has a worse rank than the 'candidate rank' in one of the two criteria of free float market capitalisation or order book volume (for example, greater than 40 in the free float market capitalisation criterion or greater than 40 in the order book volume criterion in the DAX<sup>®</sup> ranks). It may be replaced by the company with the highest free float market capitalisation 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 35 in the DAX<sup>®</sup> ranks). If no successor can be determined, no change takes place.

- 4) **Regular Entry:** A company may be included in the selection index if it has the same or better rank than the 'candidate rank' in both the free float market capitalisation and order book volume criteria (e.g. smaller than or equal to rank 30 for the free float market capitalisation criterion and smaller than or equal to rank 30 in the order book volume criterion in the DAX<sup>®</sup> ranks). The company with the lowest free float market capitalisation that is ranked worse than the 'alternate candidate rank' in one of the criteria may be excluded (e.g. greater than 35 in one of the two criteria in the DAX<sup>®</sup> ranks). If no alternate candidate can be determined, no exchange takes place.

In principle, the following applies to all four rules: If there are several companies that fulfil the criteria, the best/worst candidate in terms of free float market capitalisation is included/replaced.

In exceptional cases, for example, takeovers announced at short notice or significant changes in the free float, Deutsche Börse AG may deviate from rules 1–4 mentioned above. The Working Committee can be consulted as an advisory council. Furthermore, Deutsche Börse AG may also decide to undertake a market consultation.

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 <http://www.dax-indices.com>.

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

It may be the case that there is a shortfall 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 there is a shortfall during the regular review before the four rules of the selection indices are applied, a check is performed to see whether there is a relegation candidate from a superior index (e.g. a shortfall may occur in the SDAX<sup>®</sup> due to an exit from MDAX<sup>®</sup> and the simultaneous promotion of an SDAX<sup>®</sup> company). 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 meets 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 is not met, 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, could be accepted into the selection index with the shortfall is found using the Fast Exit rule.

There is still a possibility for a shortfall in the selection index. This may occur when a company that so far had not been included in a selection index as it failed to meet the base 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<sup>®</sup>, the replaced company could be included into the SDAX<sup>®</sup> 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<sup>®</sup> following the regular review. At first the composition of the MDAX<sup>®</sup> is finalised. As soon as the review of the MDAX<sup>®</sup> is complete, the review of the exchanged candidate for acceptance into the SDAX<sup>®</sup> 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 violate the Regular Exit rule, the relegation candidate is directly accepted into the subordinated selection index.
- b. If the Regular Exit rule is not met, the relegation candidate is not accepted directly into the subordinated selection index with the shortfall.
- c. If there are no other relegation candidates and there is still a shortfall 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 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.

#### 4.1.1.4 Transition rules MDAX<sup>®</sup>, SDAX<sup>®</sup> and TecDAX<sup>®</sup> for determination of initial index compositions at regular chaining in September 2018

The initial composition of the MDAX<sup>®</sup>, SDAX<sup>®</sup> and TecDAX<sup>®</sup> after the regular chaining in Sep. 2018 is determined according to the following procedure (based on the August 2018 ranking list in accordance with the basic criteria and regular and fast exit and fast entry rule parameters as stated above:

- From the perspective of each index, all companies with a “Regular Exit” ‘candidate rank’ in one of the two criteria of free float market capitalisation or order book volume (see Sec. 4.1.1.3 (3)), of greater than the rank described in the table “Overview of rules” do not qualify for inclusion into the index initially,
- All remaining companies on the ranking list may qualify for the inclusion into the respective index,
- In case the number of remaining candidates on the ranking list is below the number of index constituents needed for the respective index, all remaining slots are filled according to the entrance criterion of each index’ “Fast Exit” rule (Sec. 4.1.1.3 (1),
- In case the number of remaining candidates on the selection list is above the number of index constituents needed for the respective index, companies are removed by applying the exit criterion of each index’ “Fast Entry” rule (Sec. 4.1.1.3 (2)).

#### 4.1.2 General Standard Index

The companies that are included in the General Standard Index must be listed in the General Standard and on Xetra<sup>®</sup>. If this fundamental prerequisite is met, the 200 most liquid basic values by order book value on the FWB<sup>®</sup> Frankfurt Stock Exchange (in the preceding twelve months) with a market capitalisation of less than €5 billion are selected.

To ensure the continuity of the index, companies which have been taken off the index because they have a market capitalisation of more than €5 billion shall only be included in the list again when they have a market capitalisation of less than €5 billion. In the case of new inclusions on the index, the companies must have been listed in the General Standard segment for at least 30 days.

#### 4.1.3 Scale 30 Index

The companies that are included in the Scale 30 Index must be listed in the Scale segment and trading on Xetra<sup>®</sup>. If this fundamental prerequisite is met, the 30 most liquid companies by order book value on the FWB<sup>®</sup> Frankfurt Stock Exchange (in the preceding twelve months).

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).

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#### 4.1.4 DAX ex Financials Index

DAX<sup>®</sup> ex Financials Index corresponds to the composition of the DAX<sup>®</sup> Index excluding the FIRE supersector (Finance, Insurance and Real Estate). It therefore contains the largest companies with the highest turnover from the Prime Standard segment of the FWB<sup>®</sup> Frankfurt Stock Exchange that do not belong to the FIRE supersector. The DAX<sup>®</sup> Index rules are crucial for inclusion in the index.

According to the specifications for the composition of the DAX<sup>®</sup> Index, companies in the FIRE supersector are excluded. In addition, also those companies that are classified under “section K” (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank 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<sup>®</sup> Index. In addition, changes to the sector affiliation of a company are considered in the index if it belongs to or no longer belongs to the FIRE supersector following reclassification. Similarly, possible changes of the sector affiliation within “section K” of the Customer Classification of Deutsche Bundesbank will also be considered in the index composition.

#### 4.1.5 DAX ex Financials 30 Index

The DAX<sup>®</sup> ex Financials 30 Index is based on the DAX<sup>®</sup> Index ranking list and shows the blue chips permitted in Prime Standard which do not belong to the FIRE supersector. It includes the 30 largest companies with the highest turnover on the FWB<sup>®</sup> Frankfurt Stock Exchange that do not belong to the FIRE supersector. The DAX<sup>®</sup> Index rules are crucial for inclusion in the index. The FIRE supersector includes the sectors Finance, Insurance and Real Estate.

The DAX<sup>®</sup> 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<sup>®</sup> ranking list, applying the basis criteria listed in section 4.1.1.1, but excluding companies that belong to the FIRE supersector. In addition, also those companies that are classified under “section K” (Financials and Insurance) according to the Customer Classification of Deutsche Bundesbank will be excluded from the provision of ranks. The 30 companies are selected based on the quantitative criteria of order book volume and free float market capitalisation. The criteria are applied analogously as described in section 4.1.1.3. In addition, changes to the sector affiliation of a company are considered if it belongs to or no longer belongs to the FIRE supersector following reclassification. Similarly, possible changes of the sector affiliation within “section K” of the Customer Classification of Deutsche Bundesbank will also be considered in the index composition.

<u>DAX ex</u> <u>Financials</u>	Candidate rank FF MCap/OB volume	Alternate candidate rank FF MCap/OB volume	Mar	Jun	Sep	Dec
Fast Exit	45/45	35/35; 35/40; 35/45	X	X	X	X
Fast Entry	25/25	35/35	X	X	X	X
Regular Exit	40/40	35/35			X	
Regular Entry	30/30	35/35			X	

## 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®.

### 4.2.1 Addition

A new share class included in the Prime Standard, General Standard or Scale segments of the 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 the 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.

A share class comes from another segment of the FWB® Frankfurt Stock Exchange or was already listed on another stock exchange. The share class is included in the index on the day of the first quotation in the new segment.

### 4.2.2 Deletion

Deletions from the All Share indices are performed after the close of the market on the day on which the company was last listed in the segment.

## 4.3 Sector Indices

Sector indices include all companies listed in the sector in question. There are 18 sector indices and 63 sub-sectors in the Prime segment and in the broader portfolio of all companies with Prime Standard, General Standard and Scale segment. In general, index adjustments take place in sector indices in the event of a sector change. This takes place in particular when allocating investment companies to a sector. The following rule shall apply here:

Given a sufficiently diversified investment focus, investment companies are initially allocated to the Financial Services/Private Equity & Venture Capital sector. Where it becomes apparent that a company is focusing its investments on one sector, it is reclassified as follows:



If the activities extend to several industrial areas, the company is allocated to the “Industrial/Industrial Diversified” sector. Investment companies with a clear focus on a certain sector are allocated to that sector.

#### 4.3.1 Addition

A new share class included in the Prime Standard, General Standard or Scale segments of the 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 the 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 the FWB® Frankfurt Stock Exchange or was already listed on another stock exchange. The share class is included in the index on the day of the first quotation in the new segment.

#### 4.3.2 Deletion

Deletions from the segment indices are performed after the close of the market on the day on which the company was last listed in the segment.

## 5 Extraordinary Index Review

### 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.

#### 5.1.1 Insolvency of Companies

- Companies for which insolvency proceedings are not initiated for lack of assets, or which are currently in liquidation, are immediately removed from the corresponding selection indices.
- In contrast, companies that have filed an application for the opening of insolvency proceedings are only removed from the selection indices in the course of the next quarterly review of the index composition. This also holds true once the insolvency proceedings begin.

### 5.1.2 Breach of the Basis Criteria

Companies no longer meeting the basis criteria necessary in order to remain in the index as described in 0, e.g. regarding the minimum free float, an Scale segment, General or Prime Standard listing or continuous trading are removed from the index insofar as Deutsche Börse AG becomes aware of this. For DAX, MDAX, SDAX and TecDAX this is done based on the Fast Exit rule. In all other selection indices the replacement is determined based on the criteria described in 4.1.1.1. Deutsche Börse communicates this decision and replaces the relevant company, usually two full trading days after the announcement. In justified cases (e.g. in the event of the inclusion of the successor company in the index), the replacement can be delayed by up to ten trading days. 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.

Companies that no longer meet the additional requirements for foreign companies described in 4.1.1 will not be immediately removed from the index, but will be reviewed during the next quarterly review.

### 5.1.3 Breach of the Volatility Criteria

In addition, a company can be removed immediately if its index weight based on its current free float market capitalisation exceeds 10 percent and its annualised 30-day volatility exceeds 250 percent. The relevant figures are published by Deutsche Börse AG on a daily basis.

### 5.1.4 Conversion of Preferred Shares into Ordinary Shares

a) Ordinary shares are already included in the index

No chaining is carried out. The number of shares remains unchanged until the next chaining date.

b) Preferred shares are already included in the index

The ordinary shares are included in the index, taking the place of the preferred shares. The number of ordinary shares and the free float factor are adopted from the class of the preferred shares, and are subject to adjustment only on the next regular chaining date. If the conversion occurs in the ratio 1:1, no further amendments will be carried out. In all other cases the mathematical price difference will be balanced by the ci factor.

### 5.1.5 Extraordinary Free Float Adjustments

If the free float factor of a company included in a selection index changes by more than 10 percentage points during the period between two regular chaining dates due to a corporate measure (e.g. subscription right or changes in share capital), the free float factor will be updated extraordinarily. Deutsche Börse will announce the new free float factor at least two trading days before the change becomes effective.

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

The extraordinary adjustment in each case will be carried out as described in section 7.1.1, with the only difference that the index composition will not be changed and only the free float factor of the affected company will be updated.

#### 5.1.6 Adjustments in the Case of Mergers and Acquisitions

Two possible scenarios must be distinguished in this context:

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

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

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

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

#### 5.1.7 Conversion into Tendered Shares

The conversion of tendered shares is subject to the following process during the period between the first offer and the closing of the transaction:

If the company being taken over is a component in one of the selection indices, the company's shares in the index will be replaced by the tendered shares without chaining if the acceptance rate is at least 50% (according to section 23 I WPÜG). The number of shares and the free float factor are assumed by the replaced shares and modified during the next regular chaining. Requirements for this replacement are

- that the tendered shares, as well as the shares that the tendered shares will be converted into, fulfil the criteria for the index ranking (according to 4.1.1.2) continuously
- the new or acquiring company is not included in a selection index

In the event that the transaction is reversed, the tendered shares will be removed from the index and reverted into the company's original shares in the index.

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## 5.2 All Share Indices

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

## 6 Calculation

### 6.1 Index Formulas

#### 6.1.1 Index Formula for free float marketcap-weighted indices

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

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

$$\text{Index}_t = K_T \cdot \frac{\sum p_{it} \cdot \text{ff}_{iT} \cdot q_{iT} \cdot c_{it}}{\sum p_{i0} \cdot q_{i0}} \cdot \text{Base}$$

whereby:

$c_{it}$	=	Adjustment factor of company i at time t
$\text{ff}_{iT}$	=	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 an index of Deutsche Börse
$p_{it}$	=	Price of share i at time t
$q_{i0}$	=	Number of shares of company i on the trading day before the first inclusion in an index of Deutsche Börse
$q_{iT}$	=	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:

$$\text{Index}_t = \frac{\sum_{i=1}^n p_{it} \cdot (K_T \cdot \frac{ff_{iT} \cdot q_{iT}}{\sum_{i=1}^n q_{i0}} \cdot 100 \cdot c_{it})}{\sum_{i=1}^n p_{i0} \cdot \frac{q_{i0}}{\sum_{i=1}^n q_{i0}} \cdot 100} \cdot \text{Basis} = \frac{\sum_{i=1}^n p_{it} \cdot F_i}{A} \cdot \text{Basis}$$

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  $F_i$ :

- Multiply the current price by the respective  $F_i$  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  $F_i$  factors provide information on the number of shares required from each company to track the underlying index portfolio.

### 6.1.2 Index Formula for Market Cap-Weighted Indices

The same index formula as described under 6.1.1 is used for indices that are not weighted by free float market capitalisation, but by full market capitalisation, with the difference that:

$$ff_{iT} = 1$$

### 6.1.3 Index Formula for Equally Weighted Indices

The same index formula as described under 6.1.1 is used for equally weighted indices, such as the Scale All Share, with the difference that:

$$ff_{iT} = 1$$

$$q_{i0} = \text{Weighting factor of company } i \text{ on the trading day before the first inclusion in the Scale All Share Index}$$

$$q_{iT} = \text{Weighting factor of company } i \text{ at time } T$$

### 6.1.4 Specifics of Derived Indices

Indices for which another index forms the base universe, e.g. Dax<sup>®</sup> ex Financials, are designated as derived indices. Companies are selected from this base universe using a certain selection algorithm. As the selection algorithm should represent the only difference from the main index, the index weighting and the capping are not newly defined, but are adopted from the parameters of the main index. For that reason, the capping factors of the main index are used unchanged for the derived index.

## 6.2 Index Formula for X-Indices

### 6.2.1 Calculation of X-DAX

The factor applied to discount the DAX<sup>®</sup> future (FDAX) will be deducted from the daily deviation of the index future from its underlying index (DAX<sup>®</sup>).

The X-DAX<sup>®</sup> is calculated as follows:

$$\text{Index}_t = \frac{1}{D_t} \text{FDAX}_t$$

Where:

$$D_t = \frac{\sum_{i=1}^N \frac{\text{FDAX}_i}{\text{DAX}_i}}{N}$$

Here,  $\sum_{i=1}^N \frac{\text{FDAX}_i}{\text{DAX}_i}$  is the sum of all ratios  $i=1$  to  $N$  of the future and index values measured on a given index calculation date  $t$  between the start of the DAX<sup>®</sup> and 5:15 pm CET.

To prevent distortions due to outliers, the lower and upper deciles of the ratios  $\frac{\text{FDAX}_i}{\text{DAX}_i}$  are not considered in the following calculations and  $N$  is reduced accordingly.

$D_t$  is then used to calculate the X-DAX<sup>®</sup> between 5:30 pm CET and 10:15 pm CET on date  $t$ .

To calculate the X-DAX<sup>®</sup> between 8:00 am CET and the start of the DAX<sup>®</sup> on the next calculation date ( $t+1$ ), the discount factor ( $D_t$ ) is adjusted downwards to take account of the decrease in the time to maturity.

With  $T_t$  being the time to maturity on date  $t$  and  $r_t$  an implicit interest rate, the X-DAX<sup>®</sup> calculation between 8:00 am CET and the start of the DAX<sup>®</sup> on date  $t+1$  is carried out as follows:

$$D_{t+1} = 1 + r_t \frac{T_{t+1}}{360}, \text{ with } r_t = (D_t - 1) \frac{360}{T_t}$$

$$\text{Index}_t = \frac{1}{D_{t+1}} \text{FDAX}_t$$

### 6.2.2 Calculation of X-MDAX and X-TecDAX

X-MDAX<sup>®</sup> and X-TecDAX<sup>®</sup> are calculated based on F2MX and FTDX future prices as follows:

$$\text{Index}_t^j = \frac{1}{1 + r_t \cdot \frac{T_{F,t}}{360}} \cdot \text{Futures}_t^F$$

Where:

- $j$  = Index  $j$  stands for the respective index, X-MDAX® or X-TecDAX®
- $\text{Futures}_t^F$  = Last price of future  $F$  (F2MX or FTDX) on index  $j$  with the shortest time to maturity
- $T_{F,t}$  = Number of days to maturity of future  $F$  at time  $t$
- $r_t$  = Risk-free interest rate at time  $t$
- $t$  = Time of calculation

The risk-free interest rate is derived by interpolation from the rates for secured money market transactions (Euribor) as described below:

$$r_t = r_k \frac{T_{k+1} - T_{F,t}}{T_{k+1} - T_k} + r_{k+1} \frac{T_{F,t} - T_k}{T_{k+1} - T_k}, \text{ where } T_k \leq T_{F,t} \leq T_{k+1}$$

Where:

- $T_k, T_{k+1}$  = Number of days in the respective class
- $T_{F,t}$  = Number of days to maturity of future  $F$  at time  $t$
- $k$  = Euribor classes
- $t$  = Time of calculation

The number of days to the maturity of the respective future  $F$  ( $T_{F,t}$ ) is determined daily after close of calculation of the indices. It is calculated as the difference between the maturity date and the current date. It is constant for the entire trading day.

## 6.3 Calculation Details

### 6.3.1 Daily Settlement Indices

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

On chaining days a future settlement index is calculated analogously.



### 6.3.2 Currency Conversion

Selected indices (DAX<sup>®</sup> and HDAX<sup>®</sup>) are also calculated in non-EUR currencies. The intraday currency conversion is based on the spot rates provided by Thomson Reuters. The WM/Reuters currency fixing rates from 5:00 pm CET are used to calculate the indices' closing values.

### 6.3.3 Prices Used, Calculation Frequency and Start

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

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

The price index of the General Standard Index is calculated continuously every 60 seconds, while the performance index and subsector indices are calculated once at the close of trading.

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

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

	Minimum Number of Companies/ Start Time	Total Number of Companies	Calculation of Daily Settlement
DAX <sup>®11</sup>	30 / 9:06 am	30	Yes
MDAX <sup>®</sup>	45	60	Yes
SDAX <sup>®</sup>	55	70	No
TecDAX <sup>®</sup>	20	30	Yes
HDAX <sup>®</sup>	75	Variable	No
DAX <sup>®</sup> ex Financials <sup>11</sup>	- / 9:06 am	Variable	Yes
DAX <sup>®</sup> ex Financials <sup>30</sup>	30 / 9:06 am	30	Yes
General Standard	- / 9:00 am	Variable	No

<sup>11</sup> The actual number depends on the current number of companies in the index. Hence opening prices need to be available for all companies that are currently included in the index.

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

#### 6.3.4 Computational Accuracy

The  $K_T$  chaining factors are used and published as figures rounded to seven decimal places.

The  $c_{it}$  adjustment factors are included in the index formula, expressed in six decimal places. In the event of several adjustment events coinciding, such as “ex-dividend” 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 in such a way are multiplied by each other, and the product is rounded to six decimal places again.

When determining the  $c_{it}$  adjustment factor for subscription rights, the rights value is used rounded to two decimal places. Only in the case of a capital increase using company reserves will such a rights value not be rounded. If a dividend disadvantage has to be prorated (e.g. for three months), the value of such a 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  $F_i$  factors are rounded to five decimal places and published accordingly, changing with each share-specific adjustment.

If a dividend disadvantage has to be prorated, the value of such a disadvantage used for index calculation is rounded to two decimal places.

#### 6.3.5 Index Flags and Corrections

An index is published with the label “A” (“amtlich”) once the opening criteria are fulfilled. Where the opening criteria have not been met for an index on a certain trading day, an index value is derived from the last available prices at the end of the calculation period. Accordingly, this index is labelled “I” (indicative). If the number of corresponding securities is between the minimum number and the total number shown in the table, the indices are also labelled “R” (representative).

Subsequent index ticks are continuously checked for its deviation. Once an index specific threshold is breached, the corresponding index ticks are disseminated with an index supplement “U” (for unchecked, instead of “A” for amtlich) and an immediate operational check is triggered. If the deviation was justified (e.g. due to market conditions), the index will manually be switched back to “A”, i.e. labelled in line with its corresponding status.

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## 6.4 Index Correction Policies

### 6.4.1 Correction of Index Values

The correction of an index typically results from one of two scenarios:

- internal errors (e.g. calculation errors)
- external errors (e.g. incorrect input data)

Notifications about index calculation and production issues and errors are made publicly available.

#### 6.4.1.1 Internal Errors

If Deutsche Börse AG becomes aware of internal index calculation errors within a trading day, intraday values of the respective index are corrected for that specific day insofar as technically feasible and economically reasonable. Intraday values that are not detected within the same trading day are not corrected, but will retroactively be flagged as invalid.

If there are deviations that are considered significant by Deutsche Börse AG, index close values will also generally be corrected retroactively, insofar as technically feasible and economically reasonable.

#### 6.4.1.2 External Errors

Calculation errors that are based on incorrect input data are corrected as soon as possible, insofar as technically feasible and economically reasonable. If there are deviations that are considered significant by Deutsche Börse AG, index close values will also generally be corrected retroactively, insofar as technically feasible and economically reasonable. Intraday values that are not corrected will retroactively be flagged as invalid.

### 6.4.2 Correction of Index Parameter Values

All index parameters that are determined and published by Deutsche Börse AG for a company in the context of data collection are only corrected or adjusted at the subsequent chaining date as described in section 7.1.1, with the exception of the regulation in section 5.1.5. This rule applies regardless of when Deutsche Börse AG becomes aware of facts that would have changed the index parameter values had they been known at the time of the calculation.

## 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. Xetra® closing prices on the chaining date form the basis for the chaining.

### 7.1 Chaining for Free Float Market Cap-Weighted Indices

The portion of share capital attributable to each share class that is deemed free float (see section 2.3) is used for weighting free float market cap-weighted indices. The number of shares comprising the share capital and the free float factor are updated quarterly during the regular chaining process.

#### 7.1.1 Regular Chaining

The quarterly chaining procedure is carried out quarterly and encompasses (with the exception of the Scale All Share Index) the following measures:

- Regular changes to the composition of the various indices are implemented.
- The number of shares and the respective free float factors 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  $c_{it}$  adjustment factors are set to 1.
- A chaining factor is calculated to avoid a gap in the respective index.

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:

$$\text{Index}_t = K_T \cdot \frac{\sum_{i=1}^n p_{it} \cdot \text{ff}_{iT} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^n p_{i0} \cdot q_{i0}} \cdot \text{Base}$$

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 ( $q_{i,T+1}$ ) and the current free float factors ( $ff_{i,T+1}$ ). The  $c_{it}$  adjustment factors are set to 1.

The following applies accordingly:

$$\text{Interim value} = \frac{\sum_{i=1}^n p_{it} \cdot ff_{i,T+1} \cdot q_{i,T+1}}{\sum_{i=1}^n p_{i0} \cdot q_{i0}} \cdot \text{Base}$$

The interim value is used as an exact figure for subsequent calculations.

c) Calculation of the new chaining factor

The following applies accordingly:

$$K_{T+1} = \frac{\text{Index}_t}{\text{Interim value}}$$

After chaining, the index is computed on the basis of the new chaining factor ( $K_{T+1}$ ).

After calculation of the chaining factor, capital changes and dividend payments due on the date of chaining are taken into account via the  $c_{it}$  factor.

The  $F_i$  weighting factors of the index formula based on relative weights are calculated as follows:

$$F_i = K_{T+1} \cdot \frac{ff_{i,T+1} \cdot q_{i,T+1} \cdot c_{it}}{\sum_{i=1}^n q_{i0}} \cdot 100$$

### 7.1.2 Unscheduled Chaining

If the composition of the index is extraordinarily adjusted as described in section 5, an unscheduled chaining takes place. The chaining takes place as described in section 7.1.1, but without an adjustment of the parameters: Number of shares, free float and correction factors ( $c_{it}$ ). Newly included companies are considered using the current parameters from Prime All Share. The factors from CDAX<sup>®</sup> are adopted in the case of an unscheduled segment change from General Standard to Prime Standard. The interim value is calculated on the basis of the companies included in the new index portfolio.

$$\text{Interim value} = \frac{\sum_{i=1}^n p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^n p_{i0} \cdot q_{i0}} \cdot \text{Base}$$

With the new chaining factor to result as:

$$K_{T+1} = \frac{\text{Index}_t}{\text{Interim value}}$$

### 7.1.3 Adjustment during Unscheduled Chaining

Distributions will be adjusted by unscheduled chaining as described in section 8.1.3. Calculation of the interim value is based on the adjusted price and correction factors:

$$\text{Interim value} = \frac{\sum_{i=1}^n p_{it} \cdot ff_{iT} \cdot q_{iT} \cdot c_{it}}{\sum_{i=1}^n p_{i0} \cdot q_{i0}} \cdot \text{Base}$$

In this case, the price following the full, expected markdown and the newly calculated  $c_{it}$  correction factor are applied for the distributing company  $i$ .

With the new chaining factor to result as:

$$K_{T+1} = \frac{\text{Index}_t}{\text{Interim value}}$$

## 7.2 Chaining for Market Cap-Weighted Indices

For indices that are not weighted according to free float market capitalisation but rather on the basis of pure market capitalisation, the chaining takes place as outlined in section 7.1.1, but with the following difference:

$$ff_{iT} = 1$$

## 7.3 Chaining for Equally Weighted Indices

For chaining in equally weighted indices, such as the Scale All Share Index, the weighting factor  $q_{i,T+1}$  of every company will be adjusted during each scheduled and unscheduled chaining in order to ensure that every company has the same weighting in the index.

The following applies accordingly:

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

Where:

t	=	Time of last trading on the day of scheduled or unscheduled chaining
n	=	Number of shares in index
p <sub>it</sub>	=	Price of company i at time t
q <sub>it+1</sub>	=	Weighting factor of company i at time t+1

## 7.4 Capping

For some indices, the maximum index weighting that a company can adopt is limited. This maximum index weighting is known as the capping limit and is defined for each specific index, see section 3. That means that in these cases, the total free float market capitalisation of a company is used to calculate the index weight. The following formula is used to calculate the free float market capitalisation based on sections 2.4 and 6.1.1:

$$FF - MCap = p_{it} \cdot ff_{iT} \cdot q_{iT}$$

Where:

t	=	Last trading time on the day of the scheduled or unscheduled chaining
T	=	Two trading days before the chaining day, e.g. T = Wednesday if the chaining day falls on a Friday

A reduction of this parameter may therefore be made by reducing the number of shares (q<sub>iT</sub>) of a company.

The procedure described below is called capping and is performed again on each chaining day.

Initially, the index weightings are calculated with the entire free float market capitalisation. In a second step, it is checked whether the capping limit has been exceeded. In this case, the number of shares in the affected company is reduced until the weighting is below the capping limit. The implied reduction of the overall index capitalisation (sum of the free float market capitalisation of all companies in the index) may mean that another company exceeds the capping limit. Capping is an iterative process and is now performed again for this company until no companies exceed the capping limit.

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If the capped portion of a company rises above 10 percent or falls below 10 percent in the course of a quarter, it is raised or lowered back to the capping limit only on the following chaining date, where applicable.



## 8 Adjustments – Corporate Actions

The performance indices of Deutsche Börse AG are adjusted for exogenous influences (e.g. price-relevant capital changes) by means of certain correction factors, assuming a reinvestment according to the “opération blanche”.

All continuously calculated indices are simultaneously adjusted for systematic price changes using ex-ante calculations of the correction factor. The prerequisite for this is to calculate the correction factor on an ex-ante basis. Consequently, the first “ex” price can be adequately included for index calculation purposes. The ex-ante incorporation of adjustments presupposes a general acceptance of the computation formula as well as a general availability of the parameters used.

The calculated adjustment factor and a synthetic price accordingly adjusted for this factor are used in the index from the ex-date of a share as long as no “ex” price is available.

### 8.1 Distributions

#### 8.1.1 Cash Dividends and Other Distributions

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

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

Where:

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

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

$\tau$  = withholding tax, only for net return indices, otherwise  $\tau = 0$

The withholding tax used to calculate the net return indices can be found on [www.stoxx.com](http://www.stoxx.com) under the section Resources\Methodology\Withholding tax.

Within the framework of index calculation, the share price is thus modified by the amount of the respective cash distribution.

Cash dividends and bonus distributions are only corrected in performance and net return indices. Special distributions are taken account of in all performance, net return and price indices.

### 8.1.2 Stock Dividends

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

### 8.1.3 Distributions > 10 Percent of Market Capitalisation

If the absolute amount of the accumulated distributions (dividends, bonus and special distributions, spin-offs or subscription rights on other share classes) between two regular chaining dates accounts for more than 10 percent of the market capitalisation of the distributing company on the day before the first distribution, the part of the distribution exceeding the 10 percent will not be reinvested in a single stock but in the overall index portfolio by means of unscheduled chaining.

In such a case, the ci adjustment factor for the expected markdown on 10 percent of the distribution will be calculated according to the formulas described in sections 8.1.1 and 8.1.2. The remaining expected markdown will be carried out at the same time as the adjustment of the chaining factor as described in section 7.1.

#### Example 1 – Dividend distribution of 25 percent

Company A, which is included in the index with a current share price of €100 and current adjustment factor of 1, pays a special dividend of €25 to shareholders on the ex dividend date t. An adjustment factor of 1.11111 will be calculated according to section 8.1.1 for the part of the distribution which accounts for 10 percent of the overall capital (€10). The remaining markdown of €15 will be adjusted on the chaining date as described in section 7.1.3.

#### Example 2 – Dividend distribution of 5 percent on day t, spin-off of 10 percent on the next day

Company B, which is included in the index with a current share price of €10 and current adjustment factor of 2, pays a special dividend of €0.50 on the ex dividend date t. The special dividend will be adjusted by the adjustment factor as described in section 8.1.1. The new adjustment factor is correspondingly calculated as 2.105263. On the next day company C will be spun-off from company B. Firstly, company C will be included in the index and removed on the next day with a closing price of €1 as described in section 8.4, resulting in a markdown of €1 or 10 percent based on the capitalisation before the first distribution. The accumulated markdown is 15 percent of the market value. Up to and including 10 percent of the markdown - in this case €0.5 - will be adjusted by the ci factor in accordance with section 8.1.1. The remaining markdown of €0.5 will be adjusted on the chaining date as described in section 7.1.3.

## 8.2 Changes in Share Capital

### 8.2.1 Capital Increases

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

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

Where:

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

and:

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

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

$p_B$  = Subscription price

$BV$  = Subscription ratio

$DN$  = Dividend disadvantage

For capital increases using company reserves:  $p_B = 0$

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

### 8.2.2 Capital Reductions

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

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

Where:

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

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

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

### 8.3 Nominal Value Changes and Share Splits

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

$$C_{it} = \frac{N_{i,t-1}}{N_{i,t}} \cdot C_{it-1}$$

Where:

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

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

### 8.4 Spin-offs

Where a company ("class A") spins off one of its divisions into a new, independent company ("class B"), the adjustment is carried out as described below.

A theoretical markdown cannot be calculated on an ex-ante basis since there is no closing price for the shares of the new company B. "B" shares are additionally included in the index at a price of 0 on the ex dividend date so as to avoid any index tracking errors. For a spin-off affecting the DAX®, for instance, this implies that the index is calculated on the basis of 31 issues for at least one day. On their first trading day, following the Xetra® closing auction, "B" shares are once again removed from the index. At the same time, the  $c_i$  factor of company A is adjusted as follows:

$$C_{i,t}^A = \left( 1 + \frac{C_{i,t-1}^B \cdot p_{i,t-1}^B}{C_{i,t-1}^A \cdot p_{i,t-1}^A \cdot BV} \right) \cdot C_{i,t-1}^A$$

Where:

$p_{i,t-1}^A$  = Closing price of "A" shares on the first trading day of "B" shares

$p_{i,t-1}^B$  = Closing price of "B" shares on their first trading day

BV = Subscription ratio

t = Ex dividend date

## 8.5 Subscription Rights on Equity

### 8.5.1 Subscription Rights on Other Share Classes

Where shareholders of a company (class A) are granted subscription rights to shares of another class (class B) of the same company, two different scenarios must be distinguished:

#### A The shares to which a subscription right exists are already listed

The  $c_{it}$  adjustment factor is computed analogously to a capital increase of class A shares:

$$C_{it} = \frac{p_{it-1}^A}{p_{it-1}^A - BR_{it-1}}$$

Where:

$$BR_{it-1} = \frac{p_{it-1}^B - p_B - DN}{BV + 1}$$

And:

$BR_{it-1}$  = Theoretical value of subscription rights

$p_{it-1}^A$  = Closing price of class A shares on the day before the ex dividend date

$p_{it-1}^B$  = Closing price of class B shares on the day before the ex dividend date

$p_B$  = Subscription price

$BV$  = Subscription ratio

$DN$  = Dividend disadvantage of class B

#### B New issue of shares to which a subscription right exists

In this case, the exact theoretical value of subscription rights cannot be calculated on an ex-ante basis since there is no closing price for the new class. Therefore, the index is corrected as follows:

The expected price for the new shares is determined on the basis of the price difference between ordinary and preference shares of comparable companies. This price is used in line with the procedure described above to compute the respective subscription right.

## 8.6 Subscription Rights On Fixed-Income Instruments and Instruments with Embedded Options

A valuation of the respective fixed-income instrument on the basis of the net present value method is necessary to determine the value of subscription rights. Future revenues are

estimated without deducting capital gains tax, and are first discounted on the date on which payment of the subscription price becomes due.

No adjustment is required if subscription rights are not traded (in the event that terms are issued in line with prevailing market conditions).

### 8.6.1 Subscription Rights on Profit-Participation Certificates

The  $c_{it}$  adjustment factor for subscription rights related to profit-participation certificates is calculated in the following way:

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

Where:

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

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

Discounting is carried out using the actual/actual method.

With the purchase price being taken into account, the capital value at the time of payment is obtained according to the following equation:

$$KW_{t-1} = -P + K_1 \cdot q^{\left(\frac{-t}{365}\right)} + K_2 \cdot q^{\left(\frac{-t}{365}\right)} \cdot q^{-1} + \dots + (T + K_n) \cdot q^{\left(\frac{-t}{365}\right)} \cdot q^{-n+1}$$

Where:

$KW_{t-1}$  = Capital value of the participation certificate on the day before the ex dividend date

$q$  =  $1 + r$

$r$  = Discount rate

$t$  = Period from the date of issue to the first interest due date (in days)

$P$  = Purchase price of the profit-participation certificate

$K_i$  = Coupon payment in year  $i$

$T$  = Redemption

$n$  = Term of the participation certificate (in years)

The discount rate applied here is equivalent to the yield of a zero bond with the same maturity, plus a risk add-on determined on the basis of comparable instruments. The capital value is rounded to two decimal places.

Assuming that profit-participation certificates are offered at a ratio of z:1, the value of subscription rights ( $BR_{i,t-1}$ ) per share is thus

$$BR_{i,t-1} = \frac{KW_{t-1}}{z}$$

### 8.6.2 Subscription Rights on Bonds

The procedure is in line with that described in section 8.6.1, with the respective bond being valued by means of the net present value method<sup>12</sup>. The subscription ratio is subsequently taken into account and the correction factor established.

### 8.6.3 Subscription Rights on Instruments with Embedded Options

The procedure for subscription rights that involve instruments vesting an option right also facilitates the computation of the various correction factors on an ex-ante basis.

### 8.6.4 Subscription Rights on Profit-Participation Certificates with Warrants

The  $c_{it}$  adjustment factor for subscription rights on profit-participation certificates with warrants is determined according to the following:

- 1) Valuation of the fixed-interest component of the profit-participation certificates with warrants
- 2) Valuation of warrants
- 3) Calculation of the value of subscription rights
- 4) Computation of the adjustment factor

on 1) Valuation of the fixed-interest component of profit-participation certificates with warrants

The valuation of the fixed-interest component of profit-participation certificates with warrants ( $KW_{t-1}$ ) corresponds to the valuation of profit-participation certificates set out above.

on 2) Valuation of warrants

Warrants are valued using the binomial options pricing model<sup>13</sup>, which permits dividend payments to be taken into account in the computation. The dividend used is the average of

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<sup>12</sup> "Capital budgeting technique used to determine the benefits offered by investment projects. The net present value is calculated by discounting all inflows and outflows at the reference date." [Gabler Wirtschaftslexikon; as at May 2015]

<sup>13</sup> "The binomial options pricing model or Cox-Ross-Rubinstein model ("CRR model") is a discrete model used to model the developments of securities and share prices." [Wikipedia; as at May 2015]

the last three dividends paid. Where a dividend has already been announced, then the aggregate of this value and the two preceding dividend payments is taken for averaging purposes. The volatility used is the annualised 250-day volatility of the underlying instrument. The interest rate applied here is equivalent to the yield of a zero bond with a maturity corresponding to the option's lifetime. The option is valued at the time of issue of the respective profit-participation certificates with warrants, irrespective of its exercise period. The option value is rounded to two decimal places.

The dilution effect is taken into account as follows:

$$O = \frac{O_B \cdot N}{N + n}$$

Where:

O = Option value

O<sub>B</sub> = Value of the option right without the dilution effect

N = Number of shares prior to the exercise of option rights

n = Potential number of shares ensuing from the exercise of option rights

on 3) Calculation of the value of subscription rights

The capital value of the profit-participation certificate and the option value are aggregated to form the total value of a profit-participation certificate with warrants.

Assuming that profit-participation certificates with warrants are offered at a ratio of z:1, the value of subscription rights (BR<sub>i,t-1</sub>) per share is

$$BR_{it} = \frac{KW_{t-1} + O}{z}$$

on 4) Computation of the adjustment factor

The adjustment factor is computed as follows:

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

### 8.6.5 Subscription Rights on Bonds with Warrants or Convertible Bonds

Computation is in line with the procedure described in section 8.6.4 above. The fixed-interest and option components are valued separately and then aggregated. The dilution



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effect and subscription ratio are subsequently taken into account, and the adjustment factor is determined.

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## 9 Appendix

### 9.1 Historical Data

Index histories exist for all indices at least from the respective baseline date (see section 3).

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

For the CDAX<sup>®</sup> price index there is a timeline which extends back to 1970. However, the history of the CDAX<sup>®</sup> 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<sup>®</sup> Frankfurt Stock Exchange. Xetra<sup>®</sup> prices have been used to calculate the index since 21 June 1999.

Historical index values can be requested from STOXX Ltd. – Customer Support (see section 9.8).

### 9.2 Derivative Instruments

All continuously calculated indices published by Deutsche Börse meet the requirements of an underlying instrument for derivative financial instruments. The transparency of index calculations permits a reproduction of the respective index portfolio.

A variety of derivative instruments has been created to facilitate efficient hedging of index-based portfolios. In addition to the great variety of index warrants, certificates available on the cash market, the following instruments are traded on Eurex:

- DAX<sup>®</sup> futures (FDAX<sup>®</sup>), TecDAX<sup>®</sup> futures (FTDX), MDAX<sup>®</sup> futures (F2MX), DivDAX<sup>®</sup> futures (FDIA)
- Options on the DAX Index (ODAX<sup>®</sup>), options on the TecDAX Index (OTDX), options on the MDAX Index (O2MX), options on the DivDAX Index

### 9.3 Usage of Index Data

Deutsche Börse AG enables its customers, e.g. stock exchanges, banks and investment companies, to use the index data (index composition and weighting) to issue financial instruments. The designations of Deutsche Börse AG indices, which are registered trademarks of Deutsche Börse AG, are as such protected against improper use in Germany and abroad. The standardised index data contract grants the user of the data the right to use

the indices and index data for various purposes. The usage fee depends on the actual use. Questions on obtaining index data and the use of trade marks should be sent to STOXX Ltd. (see section 9.8).

## 9.4 Calendar of Publications

Event	Point in Time
Publication Equity Index Rankings	3 <sup>rd</sup> trading day of the month before 9 a.m. CET (except in March, June, September, December)
Publication Equity Index Rankings (March, June, September, December)	3 <sup>rd</sup> trading day of the month after 10 p.m. CET
Publication additions/ deletions	3 <sup>rd</sup> trading day in March, June, September, December after 10 p.m. CET
Publication Business Forecast	One trading day (before 9 a.m. CET) before chaining date in March, June, September, December
Chaining date	3 <sup>rd</sup> Friday in March, June, September, December
Cut-off date for creation of ranking list	Last trading day of the month for which the ranking list will be created, e.g. May 31 <sup>st</sup> for May ranking list
Meeting Working Committee for Equity Indices	5 <sup>th</sup> trading day in March, June, September, December

## 9.5 Sector classification

Super sector	Sector	Subsector	Classic / Tech <sup>14</sup>	Description
Consumer Goods	Automobile	Auto Parts & Equipment	Classic	Producers of parts and accessories for motor vehicles and motorcycles (including tyres and batteries)
	Automobile	Automobile Manufacturers	Classic	Companies primarily active in the production of passenger vehicles, small lorries and motorcycles
	Consumer	Clothing & Footwear	Classic	Companies producing mainly textile goods and shoes, including related cleaning services
	Consumer	Consumer Electronics	Classic	Companies producing mainly consumer electronics goods (such as TV sets, VCRs/camcorders HiFi equipment, etc.) (This excludes producers focusing on computers and telecommunications equipment.)
	Consumer	Home Construction & Furnishings	Classic	Producers of prefabricated homes, DIY products and furnishings (such as furniture or lighting)
	Consumer	Household Appliances & Housewares	Classic	Producers of household and garden products (such as cutlery, dishes or cleaning products), or of household appliances ("white goods")
	Consumer	Leisure Goods & Services	Classic	Producers of leisure goods (such as sports equipment, toys, bicycles), as well as restaurant, hotel or casino operators
	Consumer	Personal Products	Classic	Producers of cosmetics and personal care products

<sup>14</sup> The classification of Subsectors into Classic and Tech indicates whether a company is listed additionally to the TecDAX ranking list or only to the DAX/MDAX/ SDAX ranking list.

Super sector	Sector	Subsector	Classic / Tech <sup>14</sup>	Description
	Food & Beverages	Beverages	Classic	Producers of beverages of all kinds
	Food & Beverages	Food	Classic	Producers of food and tobacco products of all kinds
FIRE <sup>15</sup>	Banks	Credit Banks	Classic	Commercial and universal banks which do not fall into the categories of Mortgage Banks or Financial Services Providers
	Banks	Mortgage Banks	Classic	Specialist banks exclusively (or predominantly) extending long-term loans against liens on real property, or communal loans
	Financial Services	Diversified Financial	Classic	Financial services providers that do not have universal bank status, but who distribute a range of financial services
	Financial Services	Private Equity & Venture Capital	Classic	Holding companies investing in diversified business areas
	Financial Services	Real Estate	Classic	Companies investing in property/real estate (directly or indirectly)
	Financial Services	Securities Brokers	Classic	Companies active in the securities business, such as brokers, online banks, exchanges, etc.
	Insurance	Insurance	Classic	Companies mainly underwriting policies for life, accident, health or home contents cover
	Insurance	Re-Insurance	Classic	Companies mainly underwriting reinsurance cover
Basic Materials	Basic Resources	Forest & Paper Products	Classic	Producers of wood or basic wood products, and paper producers
	Basic Resources	Mining	Classic	Companies extracting commodities such as iron ore, minerals, aluminium, coal, diamonds or similar substances
	Basic Resources	Oil & Gas	Classic	Companies drilling for oil and gas, which do not fall under the Oil & Gas Distribution category
	Basic Resources	Steel & Other Metals	Classic	Producers of steel or related in-process products; producers of iron, non-iron metals or precious metals
	Chemicals	Chemicals, Commodity	Classic	Producers of simple, standardised chemical products
	Chemicals	Chemicals, Specialty	Classic	Producers of non-standard, specialty chemical products
	Chemicals	Industrial Gases	Classic	Producers of industrial gases
Industrials	Construction	Building Materials	Classic	Producers of basic construction materials, such as cement, flooring, doors, windows, etc.
	Construction	Construction & Engineering	Classic	Companies active in the development and construction of buildings and infrastructure projects (e.g. roads) (excluding prefabricated homes)
	Industrial	Advanced Industrial Equipment	Tech	Companies using sophisticated technology or providing engineering for the production of high-tech industrial goods (for example, producers of lasers, robots or optical storage media)
	Industrial	Containers & Packaging	Classic	Companies specialising in all kinds of packaging

<sup>15</sup> FIRE = „Finance, Insurance and Real Estate“

Super sector	Sector	Subsector	Classic / Tech <sup>14</sup>	Description
	Industrial	Heavy Machinery	Classic	Producers of large but mobile machinery, such as heavy goods vehicles, ships, agricultural machines, etc.
	Industrial	Industrial Machinery	Classic	Producers of industrial machinery or related components, such as machine tools, compressors, printing machines, etc.
	Industrial	Industrial, Diversified	Classic	Companies with activities across various industrial sectors (including holding companies investing in different sectors)
	Industrial	Renewable Energies	Tech	Companies developing equipment for alternative and/or renewable energy generation, such as solar technology or wind-powered turbines
	Industrial	Industrial Products & Services	Classic	Producers/providers of other industrial products or services (e.g. market research, human resources, industrial wholesalers, waste disposal)
	Transportation & Logistics	Airlines	Classic	Aviation companies mainly carrying passengers
	Transportation & Logistics	Logistics	Classic	Providers of industrial transport services (land transport/aviation cargo/ freight shipping)
	Transportation & Logistics	Transportation Services	Classic	Providers of infrastructural or other specialised transport services (including airport operators, road or rail networks, tour operators, etc.)
Consumer Services	Media	Advertising	Classic	Companies offering advertising, marketing and/or public relations services
	Media	Broadcasting	Classic	Providers of cable and satellite transmission services, and radio/television broadcasters
	Media	Movies & Entertainment	Classic	Companies producing (or trading in) entertainment products and services, including producers, distributors and broadcasters of feature films and television shows, music producers and distributors, theatre operators and sports teams
	Media	Publishing & Printing	Classic	Publishers of newspapers, magazines and books, and providers of printed or electronic information; including providers of related services (including educational institutions)
	Retail	Retail, Catalogue	Classic	Retailers selling mainly by mail order, which are not categorised under Retail, Internet
	Retail	Retail, Food & Drug	Classic	Owners/operators of food stores, pharmacies and drugstores (wholesale and retail)
	Retail	Retail, Internet	Classic	Retailers selling their goods or services mainly over the Internet
	Retail	Retail, Multiline	Classic	Retail companies with a broad product range (department stores)
	Retail	Retail, Specialty	Classic	Retail companies with a very specific product range (such as fashion, electronics, etc.)
Pharma & Healthcare	Pharma & Healthcare	Pharmaceuticals	Classic	Companies researching, developing or producing pharmaceuticals (including veterinary products)
	Pharma & Healthcare	Healthcare	Classic	Owners/operators of healthcare institutions (such as hospitals or nursing homes), providers of healthcare services (e.g. dialysis) and providers of medical material (such as syringes, swabs, etc.)

Super sector	Sector	Subsector	Classic / Tech <sup>14</sup>	Description
	Pharma & Healthcare	Biotechnology	Tech	Companies mainly active in developing, producing, marketing or licensing products based on biotechnological research
	Pharma & Healthcare	Medical Technology	Tech	Producers of technological products and devices used in healthcare, such as pacemakers, dialysis equipment or UV therapy systems
Information Technology	Software	Internet	Tech	Companies providing and developing Internet infrastructure (Internet access, portals, software, etc.)
	Software	IT-Services	Tech	Companies active in IT consulting, IT operations, systems integration, etc.
	Software	Software	Tech	Companies focused on the development of standard or specialised software solutions
	Technology	Communications Technology	Tech	Companies developing telecommunications technology and/or products (such as user devices or network components)
	Technology	Electronic Components & Hardware	Tech	Producers of electronic components (printed circuit boards, integrated circuits, smart cards) or computer hardware (PCs, monitors, etc.)
	Technology	Semiconductors	Tech	Producers and developers of semiconductors or similar products
Tele-communication	Telecommunication	Fixed-Line Telecommunication	Tech	Telecommunications carriers mainly providing fixed-line local and long-distance services
	Telecommunication	Wireless Telecommunication	Tech	Telecommunications carriers mainly providing wireless/mobile services
	Telecommunication	Telecommunication Services	Tech	Providers of ancillary or specialised telecommunications services
Utilities	Utilities	Electricity	Classic	Companies generating and/or distributing electricity (including operators of power stations)
	Utilities	Water	Classic	Providers of water to end-users (this segment includes operators of purification plants)
	Utilities	Oil & Gas (Distribution)	Classic	Utilities mainly providing energy in the form of oil and gas
	Utilities	Multi-Utilities	Classic	Companies active across various energy sectors

## 9.6 Reference data

Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Alpha (Net)	ISIN (Net)	Sector
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## Selection indices

DAX®	DAX	DE0008469008	DAXK	DE0008467440	DAXN	DE000A1A4D00	Tech & Classic
TecDAX®	TDXP	DE0007203275	TDXK	DE0007203283	2D0P	DE000A0Z3NF1	Tech
MDAX®	MDAX	DE0008467416	MKDX	DE0008467531	2D0M	DE000A0Z3ND6	Classic
SDAX®	SDXP	DE0009653386	SDXK	DE0009653394	2D0N	DE000A0Z3NE4	Classic
HDAX®	HDAX	DE0008469016	HKDX	DE0008469974	-	-	Tech & Classic
General Standard Index	D1AP	DE000A0C4B83	D1AQ	DE000A0C4B91	-	-	-
Scale 30	OK7H	DE000A2GYJT2	OQ5C	DE000A2J0PW5	-	-	-
DAX® ex Financials Index	2DYP	DE000A0Z3ME6	2DYN	DE000A0Z3MD8	-	-	-
DAX® ex Financials 30 Index	2DWJ	DE000A0Z3K84	2DWI	DE000A0Z3K76	7400	DE000A2L0407	-

## DAX Currency Variants

DAX® USD	2747	DE000A1EXLZ4	2748	DE000A1EXL07	DAXU	DE000A1A4D18	Tech & Classic
DAX® GBP	OK5L	DE000A2GYHN9	OK5M	DE000A2GYHP4	OK5N	DE000A2GYHQ2	Tech & Classic
DAX® CHF	OJEY	DE000A161DY4	OJEX	DE000A161DX6	OWZ7	DE000A2L0NR6	Tech & Classic
DAX® JPY	OJET	DE000A161DT4	OJES	DE000A161DS6	-	-	Tech & Classic
DAX® AUD	OJER	DE000A161DR8	OJEQ	DE000A161DQ0	-	-	Tech & Classic

Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Sector
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## X-Indices

X-DAX®	D1AR	DE000A0C4CA0	N.V.	N.V.	-
X-MDAX®	3BSJ	DE000A0S3BG3	N.V.	N.V.	-
X-TecDAX®	3BSL	DE000A0S3BJ7	N.V.	N.V.	-
XDAXDAX	3XJN	DE000A169S86	N.V.	N.V.	-

## L/E-Indices

L/E-DAX®	DAXL	DE0001717049	N.V.	N.V.	Tech & Classic
L/E-TecDAX®	TDXL	DE0001717072	N.V.	N.V.	Tech
L/E-MDAX®	MDXL	DE0001717056	N.V.	N.V.	Classic
L/E-SDAX®	SDXL	DE0001717064	N.V.	N.V.	Classic

## DAX International Indices

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DAX® International 100	3BTC	DE000A0S3CB2	3BTB	DE000A0S3CA4	-
DAX® International Mid 100	3BTI	DE000A0S3CH9	3BTH	DE000A0S3CG1	-



Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Sector
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**All Share-Indices**

Prime All Share	PXAP	DE0007203325	PXAK	DE0007203333	Tech & Classic
CDAX®	CDAX	DE0008469602	CXKX	DE0008469800	Tech & Classic
Technology All Share	NMDP	DE0008468943	NMDK	DE0008468968	Tech
Classic All Share	CLXP	DE0007203341	CLXK	DE0007203358	Classic
General All Share	3BTU	DE000A0S3CV0	3BTT	DE000A0S3CU2	-
Scale All Share	007N	DE000A2BLGY6	007M	DE000A2BLGX8	-

Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Sector
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**DAXsupersector Indices**

DAXsupersector Basic Materials	4NAF	DE000A0SM9Z7	4N7A	DE000A0SM718	Classic
DAXsupersector Consumer Goods	4NAG	DE000A0SNAA3	4N7B	DE000A0SM726	Classic
DAXsupersector Consumer Services	4NAH	DE000A0SNAB1	4N7C	DE000A0SM734	Classic
DAXsupersector FIRE	4NAI	DE000A0SNAC9	4N7D	DE000A0SM742	Classic
DAXsupersector Industrials	4NAJ	DE000A0SNAD7	4N7E	DE000A0SM759	Tech & Classic
DAXsupersector Information Technology	4NAK	DE000A0SNAE5	4N7F	DE000A0SM767	Tech
DAXsupersector Pharma & Healthcare	4NAL	DE000A0SNAF2	4N7G	DE000A0SM775	Tech & Classic
DAXsupersector Telecommunication	4NAM	DE000A0SNAGO	4N7H	DE000A0SM783	Tech
DAXsupersector Utilities	4NAN	DE000A0SNAH8	4N7I	DE000A0SM791	Classic

**DAXsector Indices**

DAXsector Automobile	CXPA	DE0009660084	CXKA	DE0009660092	Classic
DAXsector Banks	CXPB	DE0009660100	CXKB	DE0009660118	Classic
DAXsector Basic Resources	CXPE	DE0009660167	CXKE	DE0009660175	Classic
DAXsector Chemicals	CXPC	DE0009660126	CXKC	DE0009660134	Classic
DAXsector Consumer	CXPY	DE0009660449	CXKY	DE0009660456	Classic
DAXsector Construction	CXPO	DE0009660308	CXKO	DE0009660316	Classic
DAXsector Financial Services	CXPV	DE0009660423	CXKV	DE0009660431	Classic
DAXsector Food & Beverages	CXPF	DE0009660183	CXKF	DE0009660191	Classic
DAXsector Industrial	CXPN	DE0009660282	CXKN	DE0009660290	Tech & Classic
DAXsector Insurance	CXPI	DE0009660225	CXKI	DE0009660233	Classic
DAXsector Media	CXPD	DE0009660142	CXKD	DE0009660159	Classic
DAXsector Pharma & Healthcare	CXPP	DE0009660324	CXKP	DE0009660332	Tech & Classic
DAXsector Retail	CXPR	DE0009660340	CXKR	DE0009660357	Classic
DAXsector Software	CXPS	DE0009660365	CXKS	DE0009660373	Tech
DAXsector Technology	CXPH	DE0009660209	CXKH	DE0009660217	Tech
DAXsector Telecommunication	CXPT	DE0009660381	CXKT	DE0009660399	Tech
DAXsector Transportation & Logistics	CXPL	DE0009660241	CXKL	DE0009660258	Classic
DAXsector Utilities	CXPU	DE0009660407	CXKU	DE0009660415	Classic

**DAXsubsector Indices**

DAXsubsector Auto Parts & Equipment	I1AA	DE0007203366	I2AA	DE0007203374	Classic
DAXsubsector Automobile Manufacturers	I1AB	DE0007203382	I2AB	DE0007203390	Classic
DAXsubsector Credit Banks	I1BA	DE0007203416	I2BA	DE0007203424	Classic
DAXsubsector Mortgage Banks	I1BB	DE0007203432	I2BB	DE0007203440	Classic
DAXsubsector Forest & Paper Products	I1EA	DE0007203457	I2EA	DE0007203465	Classic

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Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Sector
DAXsubsector Mining	I1EB	DE0007203473	I2EB	DE0007203481	Classic
DAXsubsector Oil & Gas	I1EC	DE0007203499	I2EC	DE0007203515	Classic
DAXsubsector Steel & Other Metals	I1ED	DE0007203523	I2ED	DE0007203531	Classic
DAXsubsector Chemicals, Commodity	I1CA	DE0007203549	I2CA	DE0007203556	Classic
DAXsubsector Chemicals, Specialty	I1CB	DE0007203564	I2CB	DE0007203572	Classic
DAXsubsector Industrial Gases	I1CC	DE0007203580	I2CC	DE0007203598	Classic
DAXsubsector Clothing & Footwear	I1YA	DE0007203655	I2YA	DE0007203663	Classic
DAXsubsector Consumer Electronics	I1YB	DE0007203671	I2YB	DE0007203689	Classic
DAXsubsector Home Construction & Furnishings	I1YC	DE0007203697	I2YC	DE0007203713	Classic
DAXsubsector Household Appliances & Housewares	I1YD	DE0007203721	I2YD	DE0007203739	Classic
DAXsubsector Leisure	I1YE	DE0007203747	I2YE	DE0007203754	Classic
DAXsubsector Personal Products	I1YF	DE0007203762	I2YF	DE0007203770	Classic
DAXsubsector Building Materials	I1OA	DE0007203614	I2OA	DE0007203622	Classic
DAXsubsector Construction & Engineering	I1OB	DE0007203630	I2OB	DE0007203648	Classic
DAXsubsector Diversified Financial	I1VA	DE0007203788	I2VA	DE0007203796	Classic
DAXsubsector Real Estate	I1VB	DE0007203812	I2VB	DE0007203820	Classic
DAXsubsector Securities Brokers	I1VC	DE0007203838	I2VC	DE0007203846	Classic
DAXsubsector Beverages	I1FA	DE0007203853	I2FA	DE0007203861	Classic
DAXsubsector Food	I1FB	DE0007203879	I2FB	DE0007203887	Classic
DAXsubsector Advanced Industrial Equipment	I1NA	DE0007203895	I2NA	DE0007203911	Tech
DAXsubsector Containers & Packaging	I1NB	DE0007203929	I2NB	DE0007203937	Classic
DAXsubsector Heavy Machinery	I1NC	DE0007203945	I2NC	DE0007203952	Classic
DAXsubsector Industrial Machinery	I1ND	DE0007203960	I2ND	DE0007203978	Classic
DAXsubsector Industrial, Diversified	I1NE	DE0007203986	I2NE	DE0007203994	Classic
DAXsubsector Renewable Energies	I1NF	DE0007237802	I2NF	DE0007237810	Tech
DAXsubsector Industrial Products & Services	I1NG	DE0007237828	I2NG	DE0007237836	Classic
DAXsubsector Insurance	I1IA	DE0007237844	I2IA	DE0007237851	Classic
DAXsubsector Re-Insurance	I1IB	DE0007237869	I2IB	DE0007237877	Classic
DAXsubsector Advertising	I1DA	DE0007237885	I2DA	DE0007237893	Classic
DAXsubsector Broadcasting	I1DB	DE0007237901	I2DB	DE0007237919	Classic
DAXsubsector Movies & Entertainment	I1DC	DE0007237927	I2DC	DE0007237935	Classic
DAXsubsector Publishing & Printing	I1DD	DE0007237943	I2DD	DE0007237950	Classic
DAXsubsector Pharmaceuticals	I1PA	DE0007237968	I2PA	DE0007237976	Classic
DAXsubsector Health Care	I1PB	DE0007237984	I2PB	DE0007237992	Classic
DAXsubsector Biotechnology	I1PC	DE0007238008	I2PC	DE0007238016	Tech
DAXsubsector Medical Technology	I1PD	DE0007238024	I2PD	DE0007238032	Tech
DAXsubsector Retail, Catalogue	I1RA	DE0007238040	I2RA	DE0007238057	Classic
DAXsubsector Retail, Food & Drug	I1RB	DE0007238065	I2RB	DE0007238073	Classic
DAXsubsector Retail, Internet	I1RC	DE0007238081	I2RC	DE0007238099	Classic
DAXsubsector Retail, Multiline	I1RD	DE0007238107	I2RD	DE0007238115	Classic
DAXsubsector Retail, Specialty	I1RE	DE0007238123	I2RE	DE0007238131	Classic
DAXsubsector Internet	I1SA	DE0007238149	I2SA	DE0007238156	Tech
DAXsubsector IT-Services	I1SB	DE0007238164	I2SB	DE0007238172	Tech
DAXsubsector Software	I1SC	DE0007238180	I2SC	DE0007238198	Tech
DAXsubsector Fixed-Line Telecommunication	I1TA	DE0007238263	I2TA	DE0007238271	Tech
DAXsubsector Wireless Telecommunication	I1TB	DE0007238289	I2TB	DE0007238297	Tech

Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Sector
DAXsubsector Telecommunication Services	I1TC	DE0007238305	I2TC	DE0007238313	Tech
DAXsubsector Communications Technology	I1HA	DE0007238206	I2HA	DE0007238214	Tech
DAXsubsector Electronic Components & Hardware	I1HB	DE0007238222	I2HB	DE0007238230	Tech
DAXsubsector Semiconductors	I1HC	DE0007238248	I2HC	DE0007238255	Tech
DAXsubsector Airlines	I1LA	DE0007238321	I2LA	DE0007238339	Classic
DAXsubsector Logistics	I1LB	DE0007238347	I2LB	DE0007238354	Classic
DAXsubsector Transportation Services	I1LC	DE0007238362	I2LC	DE0007238370	Classic
DAXsubsector Electricity	I1UA	DE0007238388	I2UA	DE0007238396	Classic
DAXsubsector Water	I1UB	DE0007238404	I2UB	DE0007238412	Classic
DAXsubsector Oil & Gas (Distribution)	I1UC	DE0007238420	I2UC	DE0007238438	Classic
DAXsubsector Multi-Utilities	I1UD	DE0007238446	I2UD	DE0007238453	Classic
DAXsubsector Private Equity & Venture Capital	P4E7	DE000A0MER13	P4E8	DE000A0MER21	Classic

**DAXsector All Indices**

DAXsector All Automobile	3BV6	DE000A0S3FB5	3BV7	DE000A0S3FC3	Classic
DAXsector All Banks	3BV8	DE000A0S3FD1	3BV9	DE000A0S3FE9	Classic
DAXsector All Basic Resources	3BWA	DE000A0S3FF6	3BWB	DE000A0S3FG4	Classic
DAXsector All Chemicals	3BWC	DE000A0S3FH2	3BWD	DE000A0S3FJ8	Classic
DAXsector All Construction	4N7V	DE000A0SM7M9	4N50	DE000A0SM403	Classic
DAXsector All Consumer	4N7W	DE000A0SM7N7	4N51	DE000A0SM411	Classic
DAXsector All Financial Services	4N7X	DE000A0SM7P2	4N52	DE000A0SM429	Classic
DAXsector All Food & Beverages	4N7Y	DE000A0SM7Q0	4N53	DE000A0SM437	Classic
DAXsector All Industrial	4N7Z	DE000A0SM7R8	4N54	DE000A0SM445	Tech & Classic
DAXsector All Insurance	4N80	DE000A0SM7S6	4N55	DE000A0SM452	Classic
DAXsector All Media	4N81	DE000A0SM7T4	4N56	DE000A0SM460	Classic
DAXsector All Pharma & Healthcare	4N82	DE000A0SM7U2	4N57	DE000A0SM478	Tech & Classic
DAXsector All Retail	4N83	DE000A0SM7V0	4N58	DE000A0SM486	Classic
DAXsector All Software	4N84	DE000A0SM7W8	4N59	DE000A0SM494	Tech
DAXsector All Technology	4N85	DE000A0SM7X6	4N5A	DE000A0SM4Z8	Tech
DAXsector All Telecommunication	4N86	DE000A0SM7Y4	4N5B	DE000A0SM502	Tech
DAXsector All Transportation & Logistics	4N87	DE000A0SM7Z1	4N5C	DE000A0SM510	Classic
DAXsector All Utilities	4N88	DE000A0SM809	4N5D	DE000A0SM528	Classic

**DAXsubsector All Indices**

DAXsubsector All Advanced Industrial Equipment	4N89	DE000A0SM817	4N5E	DE000A0SM536	Tech
DAXsubsector All Advertising	4N8A	DE000A0SM825	4N5F	DE000A0SM544	Classic
DAXsubsector All Airlines	4N8B	DE000A0SM833	4N5G	DE000A0SM551	Classic
DAXsubsector All Auto Parts & Equipment	4N8C	DE000A0SM841	4N5H	DE000A0SM569	Classic
DAXsubsector All Automobile Manufacturers	4N8D	DE000A0SM858	4N8E	DE000A0SM866	Classic
DAXsubsector All Beverages	4N5I	DE000A0SM577	4N5J	DE000A0SM585	Classic
DAXsubsector All Biotechnology	4N8F	DE000A0SM874	4N5K	DE000A0SM593	Tech
DAXsubsector All Broadcasting	4N8G	DE000A0SM882	4N5L	DE000A0SM5A8	Classic
DAXsubsector All Building Materials	4N8H	DE000A0SM890	4N5M	DE000A0SM5B6	Classic
DAXsubsector All Chemicals, Commodity	4N8I	DE000A0SM8A2	4N5N	DE000A0SM5C4	Classic
DAXsubsector All Chemicals, Specialty	4N8J	DE000A0SM8B0	4N5P	DE000A0SM5D2	Classic
DAXsubsector All Clothing & Footwear	4N8K	DE000A0SM8C8	4N5Q	DE000A0SM5E0	Classic

Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Sector
DAXsubsector All Communications Technology	4N8L	DE000A0SM8D6	4N5R	DE000A0SM5F7	Tech
DAXsubsector All Construction & Engineering	4N8M	DE000A0SM8E4	4N5S	DE000A0SM5G5	Classic
DAXsubsector All Consumer Electronics	4N8N	DE000A0SM8F1	4N5T	DE000A0SM5H3	Classic
DAXsubsector All Containers & Packaging	4N8P	DE000A0SM8G9	4N5U	DE000A0SM5J9	Classic
DAXsubsector All Credit Banks	4N8Q	DE000A0SM8H7	4N5V	DE000A0SM5K7	Classic
DAXsubsector All Diversified Financial	4N8R	DE000A0SM8J3	4N5W	DE000A0SM5L5	Classic
DAXsubsector All Electricity	4N8S	DE000A0SM8K1	4N5X	DE000A0SM5M3	Classic
DAXsubsector All Electronic Components & Hardware	4N8T	DE000A0SM8L9	4N5Y	DE000A0SM5N1	Tech
DAXsubsector All Fixed-Line Telecommunication	4N8U	DE000A0SM8M7	4N5Z	DE000A0SM5P6	Tech
DAXsubsector All Food	4N8V	DE000A0SM8N5	4N60	DE000A0SM5Q4	Classic
DAXsubsector All Forest & Paper Products	4N8W	DE000A0SM8P0	4N61	DE000A0SM5R2	Classic
DAXsubsector All Health Care	4N8X	DE000A0SM8Q8	4N62	DE000A0SM5S0	Classic
DAXsubsector All Heavy Machinery	4N8Y	DE000A0SM8R6	4N63	DE000A0SM5T8	Classic
DAXsubsector All Home Construction & Furnishings	4N8Z	DE000A0SM8S4	4N64	DE000A0SM5U6	Classic
DAXsubsector All Household Appliances & Housewares	4N90	DE000A0SM8T2	4N65	DE000A0SM5V4	Classic
DAXsubsector All Industrial Gases	4N91	DE000A0SM8U0	4N66	DE000A0SM5W2	Classic
DAXsubsector All Industrial Machinery	4N92	DE000A0SM8V8	4N67	DE000A0SM5X0	Classic
DAXsubsector All Industrial Products & Services	4N93	DE000A0SM8W6	4N68	DE000A0SM5Y8	Classic
DAXsubsector All Industrial, Diversified	4N94	DE000A0SM8X4	4N69	DE000A0SM5Z5	Classic
DAXsubsector All Insurance	4N95	DE000A0SM8Y2	4N6A	DE000A0SM601	Classic
DAXsubsector All Internet	4N6B	DE000A0SM619	4N96	DE000A0SM8Z9	Tech
DAXsubsector All IT-Services	4N97	DE000A0SM908	4N6C	DE000A0SM627	Tech
DAXsubsector All Leisure	4N98	DE000A0SM916	4N6D	DE000A0SM635	Classic
DAXsubsector All Logistics	4N99	DE000A0SM924	4N6E	DE000A0SM643	Classic
DAXsubsector All Medical Technology	4N9A	DE000A0SM932	4N6F	DE000A0SM650	Tech
DAXsubsector All Mining	4N9B	DE000A0SM940	4N6G	DE000A0SM668	Classic
DAXsubsector All Mortgage Banks	4N9C	DE000A0SM957	4N6H	DE000A0SM676	Classic
DAXsubsector All Movies & Entertainment	4N9D	DE000A0SM965	4N6I	DE000A0SM684	Classic
DAXsubsector All Multi-Utilities	4N9E	DE000A0SM973	4N6J	DE000A0SM692	Classic
DAXsubsector All Oil & Gas	4N9G	DE000A0SM999	4N6L	DE000A0SM6B4	Classic
DAXsubsector All Oil & Gas (Distribution)	4N9H	DE000A0SM9A0	4N6M	DE000A0SM6C2	Classic
DAXsubsector All Personal Products	4N9I	DE000A0SM9B8	4N6N	DE000A0SM6D0	Classic
DAXsubsector All Pharmaceuticals	4N9J	DE000A0SM9C6	4N6P	DE000A0SM6E8	Classic
DAXsubsector All Private Equity & Venture Capital	4N9K	DE000A0SM9D4	4N6Q	DE000A0SM6F5	Classic
DAXsubsector All Publishing & Printing	4N9L	DE000A0SM9E2	4N6R	DE000A0SM6G3	Classic
DAXsubsector All Real Estate	4N9M	DE000A0SM9F9	4N6S	DE000A0SM6H1	Classic
DAXsubsector All Re-Insurance	4N9N	DE000A0SM9G7	4N6T	DE000A0SM6J7	Classic
DAXsubsector All Renewable Energies	4N9Q	DE000A0SM9J1	4N6V	DE000A0SM6L3	Tech
DAXsubsector All Retail, Catalogue	4N9S	DE000A0SM9L7	4N6X	DE000A0SM6N9	Classic
DAXsubsector All Retail, Food & Drug	4N9T	DE000A0SM9M5	4N6Y	DE000A0SM6P4	Classic
DAXsubsector All Retail, Internet	4N9U	DE000A0SM9N3	4N6Z	DE000A0SM6Q2	Classic
DAXsubsector All Retail, Multiline	4N9V	DE000A0SM9P8	4N70	DE000A0SM6R0	Classic
DAXsubsector All Retail, Specialty	4N9W	DE000A0SM9Q6	4N71	DE000A0SM6S8	Classic
DAXsubsector All Securities Brokers	4N9X	DE000A0SM9R4	4N72	DE000A0SM6T6	Classic

Index	Alpha (Perf.)	ISIN (Perf.)	Alpha (Price)	ISIN (Price)	Sector
DAXsubsector All Semiconductors	4N9Y	DE000A0SM9S2	4N73	DE000A0SM6U4	Tech
DAXsubsector All Software	4N9Z	DE000A0SM9T0	4N74	DE000A0SM6V2	Tech
DAXsubsector All Steel & Other Metals	4NAA	DE000A0SM9U8	4N75	DE000A0SM6W0	Classic
DAXsubsector All Telecommunication Services	4NAB	DE000A0SM9V6	4N76	DE000A0SM6X8	Tech
DAXsubsector All Transportation Services	4NAC	DE000A0SM9W4	4N77	DE000A0SM6Y6	Classic
DAXsubsector All Water	4NAD	DE000A0SM9X2	4N78	DE000A0SM6Z3	Classic
DAXsubsector All Wireless Telecommunication	4NAE	DE000A0SM9Y0	4N79	DE000A0SM700	Tech

## 9.7 History of Amendments to the Rules and Regulations

15 Dec. 2015	<ul style="list-style-type: none"> <li>- Clarification of the rules underlying index component selection</li> <li>- Modification of the rules upon inclusion of the tendered share class (this does not apply to takeovers by companies already included in the index)</li> <li>- No use of recent turnover data in the case of a change in quotation board in one of the transparency standards</li> <li>- Addition to the fast exit rule that, if no opposing candidate can be found, the best candidate by market capitalisation is included</li> </ul>
29 Jun. 2015	<ul style="list-style-type: none"> <li>- Change in calculation times for X-indices</li> </ul>
10 Jun. 2015	<ul style="list-style-type: none"> <li>- Clarification of rules underlying the component selection for selection indices and clarification of aggregation of turnover in case of mergers</li> </ul>
13 Nov. 2014	<ul style="list-style-type: none"> <li>- Clarification of the rulebook according to IOSCO principles</li> </ul>
17 Oct. 2014	<ul style="list-style-type: none"> <li>- Introduction of chapter 4.10 "Adjustment of index parameter"</li> </ul>
20 Aug. 2014	<ul style="list-style-type: none"> <li>- Introduction of DAX and HDAX in USD</li> </ul>
04 Jun. 2014	<ul style="list-style-type: none"> <li>- Change of buffer rule regarding major turnover criteria, chapter 2.10 and 3.2.1.1, valid from August 2014</li> </ul>
06 Mar. 2014	<ul style="list-style-type: none"> <li>- Concretion: major turnover on Frankfurt Stock Exchange, including Xetra, chapter 3.2.1.1</li> </ul>
06 Dec. 2013	<ul style="list-style-type: none"> <li>- Addition of chapter 5.1.4: Conversion into tendered shares</li> <li>- Enhancement of chapter 5.1.5 for treatment of blockholders</li> </ul>
25 Nov. 2013	<ul style="list-style-type: none"> <li>- X-MDAX and X-TecDAX methodology change</li> </ul>
16 Aug. 2013	<ul style="list-style-type: none"> <li>- X-Indices methodology change</li> </ul>
16 Aug. 2013	<ul style="list-style-type: none"> <li>- Update of contact details (appendix)</li> </ul>
25 Jul. 2013	<ul style="list-style-type: none"> <li>- Ordinary adjustment MDAX, SDAX, TecDAX</li> </ul>
07 Jun. 2013	<ul style="list-style-type: none"> <li>- Treatment of government ownership chapter 1.9</li> <li>- Sector classification of venture capital companies</li> </ul>
30 Jan. 2013	<ul style="list-style-type: none"> <li>- Concretion: major turnover on Frankfurt Stock Exchange, including Xetra</li> </ul>
02 April 2012	<ul style="list-style-type: none"> <li>- Introduction of DAX<sup>®</sup> ex Financials Index</li> </ul>
17 Jan. 2011	<ul style="list-style-type: none"> <li>- Treatment of index corrections</li> </ul>
28 Jun. 2010	<ul style="list-style-type: none"> <li>- Amendment conversion of Preferred Shares into Ordinary Shares</li> </ul>
20 Jan. 2010	<ul style="list-style-type: none"> <li>- Amended fast exit rule</li> <li>- Amended opening criteria for the start of DAX<sup>®</sup> calculation</li> </ul>
25 Aug. 2009	<ul style="list-style-type: none"> <li>- Change in publication calendar of business forecasts</li> <li>- Concretion: treatment of stock dividends</li> </ul>

06 Apr. 2009	- Clarification of treatment of alternative share classes for index changes
20 Mar. 2009	- Calculation of X-DAX <sup>®</sup> based on Eurepo rates
23 Jan. 2009	- Amended fast exit rule
22 Dec. 2008	- Free float minimum threshold changed to 10% - Extraordinary free float adjustment in connection with corporate events - Consideration of notifiable options in ongoing acquisitions - Detailing of free float rules in respect of fund holdings - Concretion exception handling in acquisitions
3 Nov. 2008	- Detailing of exclusion criterion for volatile shares
25 Mar. 2008	- Extension and renaming of the sector indices - Launch of DAXsupersector indices - Launch of DAX <sup>®</sup> International 100, DAX <sup>®</sup> International Mid 100 - Launch of General All Share index
31 Jan. 2008	- Further concretion of admission criteria for selection indices
3 Dec. 2007	- Launch of X-MDAX <sup>®</sup> and X-TecDAX <sup>®</sup>
1 Nov. 2007	- Coming into effect of "FRUG" (Markets in Financial Instruments Directive Implementation Law)
19 Mar. 2007	- Launch new Prime Industry Group indices
18 Dec. 2006	- Amended adjustment of distributions - Concretion of admission criteria for selection indices
1 Oct. 2006	- Changes in the admission criteria for DAX <sup>®</sup> , MDAX <sup>®</sup> , SDAX <sup>®</sup> and TecDAX <sup>®</sup>
1 Jul. 2006	- New Cap Limit for DAX <sup>®</sup> (10%)
2 May 2006	- Launch of General Standard Index
10 Apr. 2006	- Launch of Entry All Share Index on 5 Apr. 2006, X-DAX <sup>®</sup> on 10 Apr. 2006
1 Jan. 2006	- Calculation frequency of DAX <sup>®</sup> , MDAX <sup>®</sup> and TecDAX <sup>®</sup> once a second
25 Oct. 2005	- Launch of Entry Standard Index
15 Jun. 2005	- Amended free float rules
31 Dec. 2004	- End of calculation of NEMAX50 <sup>®</sup>
18 Oct. 2004	- Introduction of opening criteria for the start of index calculation
1 Aug. 2004	- Changes in the DAX <sup>®</sup> Index composition purely rules based
24 Mar. 2003	- New set of indices based on the Prime Standard segment

	<ul style="list-style-type: none"> <li>- Launch of TecDAX® Index</li> <li>- Downsizing of MDAX® Index</li> <li>- Revised sector systematic</li> </ul>
13 Aug. 2002	<ul style="list-style-type: none"> <li>- Introduction of fast exit rules for DAX® and MDAX®</li> </ul>
24 Jun. 2002	<ul style="list-style-type: none"> <li>- Index weighting on a free float basis</li> <li>- Free-float minimum threshold set to 5%</li> <li>- Separation of ordinary and preferred shares in the selection indices</li> <li>- Downsizing of SDAX® Index to 50 companies</li> </ul>
4 Mar. 2002	<ul style="list-style-type: none"> <li>- Takeover code no longer requirement for index inclusion</li> </ul>
1 Jan. 2001	<ul style="list-style-type: none"> <li>- Mandatory quarterly reports and analysts' conferences (DAX® and MDAX®)</li> </ul>
17 Jun. 2000	<ul style="list-style-type: none"> <li>- Adjustment of NEMAX50® Index on a quarterly basis</li> <li>- Introduction of a cap limit for the DAX® 100 Index</li> </ul>
15 May 2000	<ul style="list-style-type: none"> <li>- Introduction of sector indices for the Neuer Markt</li> </ul>
21 Jul. 1999	<ul style="list-style-type: none"> <li>- Introduction of a cap limit for the DAX®</li> </ul>
1 Jul. 1999	<ul style="list-style-type: none"> <li>- Launch of NEMAX50® Index</li> </ul>
21 Jun. 1999	<ul style="list-style-type: none"> <li>- Launch of SDAX® Index</li> <li>- Equity indices exclusively calculated on the basis of Xetra® prices</li> </ul>
30 Apr. 1999	<ul style="list-style-type: none"> <li>- Reorganization of CDAX® sectors</li> </ul>
26 Apr. 1999	<ul style="list-style-type: none"> <li>- Launch of SMAX® All Share Index</li> </ul>



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## 9.8 Contact

- **Information on prices, index concepts and licenses**

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