JANUARY 2021

STOXX® INDEX METHODOLOGY GUIDE (PORTFOLIO BASED INDICES)

STOXX | QONTIGO

Part of DEUTSCHE BÖRSE GROUP

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

CONTENTS

1. INTRODUCTION TO THE STOXX INDEX GUIDES

The STOXX index guides are separated into the following sub-sets:

» The **STOXX Calculation guide** provides a general overview of the calculation of the STOXX indices, the dissemination, the index formulas and adjustments due to corporate actions
» The **STOXX Index Methodology guide** contains the index specific rules regarding the construction and derivation of the portfolio based indices, the individual component selection process and weighting schemes
» The **STOXX Strategy guide** contains the formulas and description of all non-equity/strategy indices
» The **STOXX Dividend Points Calculation guide** describes the dividend points products
» The **STOXX Distribution Points Calculation guide** describes the distribution points products
» The **STOXX ESG guide** contains the index specific rules regarding the construction and derivation of the ESG indices, the individual component selection process and weighting schemes
» The **iSTOXX guide** contains the index specific rules regarding the construction and derivation of the iSTOXX indices, the individual component selection process and weighting schemes
» The **STOXX Reference Rates guide** contains the rules and methodologies of the reference rate indices
» The **STOXX Statistical Calculations** guide provides a detailed view of definitions and formulas of the statistical calculations as utilized in the reports, factsheets, indices and presentations produced by STOXX

All rule books are available for download on http://www.stoxx.com/indices/rulebooks.html

2. CHANGES TO THE GUIDE BOOK

2.1. HISTORY OF CHANGES TO THE STOXX EQUITY METHODOLOGY GUIDE

February 2011: Publication of a complete new rule book series
February 2011: Addition of the STOXX Islamic index family
March 2011: Methodology changes of the STOXX Sustainability index family
April 2011: Modification and addition of further indices to the STOXX Equal Weight section.
May 2011: Addition of the STOXX Infrastructure Index family
July 2011: Addition of the STOXX Rare Earth Index family
August 2011: Modification of 5.3 Index Review procedures and 9.3.3 Fast entry
November 2011: Addition of STOXX ex-Financials and ex-Banks indices, rule change for STOXX Optimized Country indices.
December 2011: Addition of the STOXX Europe Maximum Dividend 40, restructuring of the document and spin-off sections, restructuring of chapter 10
March 2012: Addition of country TMIs and regional expansion
April 2012: Addition of STOXX Benchmark and STOXX regional Total Market indices
June 2012: Reclassification of Red-Chip companies; addition of China into the Asia/Pacific region
July 2012: Amend of 4.3 COUNTRY and REGIONAL CLASSIFICATIONS
November 2012: Addition of STOXX Minimum Variance indices
December 2012: Addition of STOXX EM exposed indices
February 2013: Amendment of chapter 4 COVERAGE, 5 INDEX CHARACTERISTICS and clarification of the index methodologies
April 2013: Addition of STOXX Global 3D Printing indices
June 2013: Change of weighting scheme to Free Float Market Capitalization for STOXX Optimised Country indices (chapter 11.2)
August 2013: Additional subchapters in section 7 to describe the various derived indices based on the STOXX Benchmark indices: regional, size and sector indices.
August 2013: As a result of the review of the country classifications Red Chips are no longer eligible for the Developed Market indices. Therefore, Red Chips are excluded from STOXX Global 1800 and derived indices. August 2013: Clarification of the process to determine Emerging and Developed Markets in chapter 4.3.
September 2013: Addition of the STOXX Global Broad Infrastructure index.
September 2013: Addition of the STOXX ASEAN-Five Select Dividend 50 index
September 2013: Amendments if the Fast Entry rule in chapters 9
October 2013: Addition of STOXX Strong Quality indices
March 2014: Addition of STOXX Nordic Strong Quality indices
March 2014: Addition of the STOXX Europe Low Beta High Dividend 50 index
March 2014: Addition of the STOXX Strong Balance Sheet indices
March 2014: Addition of the EURO STOXX Supersectors 30-15
April 2014: Rule change STOXX Country Classification in chapter 4.3
July 2014: Addition of chapter 3 GENERAL PRINCIPLES
August 2014: Amendment of STOXX MINIMUM VARIANCE AND MINIMUM VARIANCE UNCONSTRAINED in chapter 16.1.2
December 2014: Clarification of review dates of the STOXX Europe Low Beta High Dividend 50 in chapter 16.4, universe definition of the STOXX Europe Private 20 and weighting scheme of the STOXX Global Broad Infrastructure in chapter 13
February 2015: Addition of the STOXX Share Ratio indices

2. CHANGES TO THE GUIDE BOOK

March 2015: Addition of STOXX ASEAN Select Dividend 30
March 2015: Addition of STOXX International Exposure Indices
June 2015: Addition of STOXX True Exposure Indices
July 2015: Addition of STOXX Activist Indices
October 2015: Addition of STOXX Select & Diversification Select Indices
November 2015: Clarification of STOXX Select Dividend liquidity screening in chapter 10.1.2
February 2016: Addition of STOXX Low Carbon indices in chapter 13.11
March 2016: Clarification of methodology of chapter 4.3 COUNTRY and REGIONAL CLASSIFICATIONS and 6 STOXX TOTAL MARKET INDICES (TMI)
May 2016: Addition of STOXX Select & Diversification Select Indices
June 2016: Decommission of STOXX Islamic indices
June 2016: Addition of STOXX ESG Impact indices
July 2016: Clarification of rules of STOXX Select & Diversification Select Indices
September 2016: Implementation of changes to country classification
September 2016 (2): Change of the exposure calculation for the Emerging Markets Exposed indices
October 2016: Addition of STOXX USA 900 Equal Weight Index and STOXX Japan 600 Equal Weight Index in Chapter 8.1, STOXX Equal Weight Indices
October 2016 (2): Addition of STOXX USA Low Risk Weighted 300 Index and STOXX Japan Low Risk Weighted 300 Index in Chapter 16.2, STOXX Low Risk Weighted
October 2016 (3): Addition of STOXX USA Select Dividend 30 Index in chapter 10.1, STOXX Select Dividend Indices
October 2016 (4): Addition of Index types and currencies in chapter 10.4, STOXX Maximum Dividend Indices
October 2016 (5): Addition of revised Minimum Variance methodology in chapter 16.1, STOXX Minimum Variance and Minimum Variance Unconstrained
October 2016 (6): Addition of STOXX China A 900 Minimum Variance Indices in chapter 16.1.
November 2016: Addition of STOXX Regional Industry Neutral ESG and STOXX Regional Excluding Tobacco Industry Neutral ESG indices in chapter 14.5
November 2016 (2): Addition of STOXX South Korea 200 in chapter 7
January 2017: Addition of EURO STOXX Quality Dividend 50
January 2017 (2): Addition of the STOXX Global Infrastructure Select 30 Indices into the STOXX Standard Select methodology chapter.
February 2017: improvement of wording and addition of details to the STOXX Europe Football, STOXX Global Extended Infrastructure 100, STOXX Global Infrastructure Suppliers 50, STOXX Global Broad Infrastructure, STOXX Regional Industry Neutral ESG and STOXX Regional Excluding Tobacco Industry indices. All modifications are intended to better describe the existing processes and no changes have been made to the existing index methodologies.
February 2017 (2): Addition of STOXX China A 900 Minimum Variance Unconstrained AM Index in chapter 16
March 2017: Addition of STOXX Climate Impact and Climate Awareness Indices in chapter 13.12
March 2017 (2): Addition of STOXX North America, Asia/Pacific Size Indices in chapter 7.3.2
August 2017: Addition of STOXX Emerging Markets ex PK Select 100, STOXX Global Health Care Select 30 and STOXX Global Technology Select 30 indices in chapter 16.6.1, Addition of STOXX USA 500 in Chapter 7.1
August 2017 (2): Addition of STOXX Emerging Markets 800 LO index in chapter 7.7

2. CHANGES TO THE GUIDE BOOK

October 2017: addition of index-specific dissemination calendars in line with definition of Dissemination Calendar in the STOXX Calculation Guide for the following indices: STOXX® Global Broad Infrastructure Index, STOXX® Global ESG Impact Index, STOXX® USA ESG Impact Index
November 2017: Termination of calculation and dissemination of STOXX Optimised Asia Select, STOXX Europe Private Equity 20, STOXX Global Rare Earth Extended and STOXX Global Max Traded 200 indices
November 2017 (2): change of dissemination calendar in line with definition of Dissemination Calendar in the STOXX Calculation Guide for the STOXX USA 500 Index
November 2017 (3): Addition of index STOXX Canada 60 in Chapter 9
November 2017 (4): Termination of calculation and dissemination of STOXX Global Grand Prix Index
December 2017: Clarification of 14.4.2 Index Review of the STOXX ESG Impact Indices
December 2017 (2): Clarification of index-specific dissemination calendars in line with definition of Dissemination Calendar in the STOXX Calculation Guide for the following indices: STOXX® Global Broad Infrastructure Index, STOXX® Global ESG Impact Index, STOXX® USA ESG Impact Index
January 2018: Addition of indices STOXX AI Global Artificial Intelligence Index and STOXX Global Artificial Intelligence Index.
January 2018 (2): Methodology change: COUNTRY and REGIONAL CLASSIFICATIONS and change in free-float market capitalization coverage to at least 95% for the STOXX TOTAL MARKET INDICES (TMI).
January 2018 (3): Addition of indices Euro Stoxx 50 Subindex Germany and Euro Stoxx 50 Subindex Netherlands (Euro Stoxx 50 subindices) in section 9.2.2.
February 2018: Clarification of COUNTRY and REGIONAL CLASSIFICATIONS, STOXX TOTAL MARKET INDICES (TMI) and TOTAL MARKET SIZE INDICES. No conceptual changes, only simplification and clarification of wording.
March 2018: Rewording of Country Classification: the description of the conditions for the classification as Emerging Market has been simplified. The applied logic remains unaltered. Clarification of methodology of STOXX TM Style indices and STOXX Strong Style indices: parts of the methodologies have been rewritten and enriched with additional details to better and more transparently represent the actual review process.The methodology implementation remains unaltered.
March 2018 (2): Change of component announcement dates for major blue-chip and major benchmark indices in section 5.3; change of review cut-off dates in section 7.1 and section 7.2.
March 2018 (3): Addition of STOXX Global Digital Security Index.
April 2018: The simplification applied to the rewording of Emerging Market in the Country Classification during March, did not accurately reflect the desired logic.
April 2018 (2): Country classification: addition of sub-sections, removal of country classification table, reference to STOXX website containing the country classification and STOXX Watch List.
May 2018: Addition of EURO STOXX Single Premium and EURO STOXX Multi Premia indices in section 20.1 and 20.2
May 2018 (2): Addition of STOXX Emerging Markets 800 LO Minimum Variance Index in section 16.1.
May 2018 (3): Addition of STOXX AI Global Artificial Intelligence ADTV5 Index in section 19.1
May 2018 (4): Change in data provider name: South Pole changed to ISS-Ethix Climate Solutions

2. CHANGES TO THE GUIDE BOOK

June 2018: Amendment of STOXX Global Aritificial Intelligence Index methodology as per the OC determination in June 2018: change in minimum liquidity filter from ADTV to MDTV
June 2018 (2): Addition of STOXX AI Global Artificial Intelligence ADTV5 USD currency versions in section 19.1
June 2018 (3): Amendment of incorrect weighting cap factor calculation date for the EURO STOXX Single Premium and Multi Premia indices
August 2018: Addition of STOXX Yewno Developed Markets Blockchain Index
August 2018 (2): Change in name resulted to iSTOXX Yewno Developed Markets Blockchain Index being moved to the iSTOXX Index Methodology Guide (previously named STOXX Yewno Developed Markets Blockchain Index)
August 2018 (3): Addition of STOXX Global Fintech Index
September 2018: Removal of ICB Industry and Supersector subindices derived from the following indices due to decommissioning (announced via press release on 19.06.2018): STOXX All Europe 800, STOXX Americas 1200, STOXX Asia 1200, STOXX BRIC 400, STOXX East Asia 1800, STOXX Europe 600 NC, STOXX Europe ex UK Total Market, STOXX Global 1800 ex Asia/Pacific, STOXX Global 1800 ex North America, STOXX Global 3000 ex East Asia, STOXX Nordic Total Market, STOXX Pacific 100. Impacted sections are: 7.1.2, 7.2.2, 7.4.2, 7.5.2.
November 2018: Addition of STOXX Global Electric Vehicles & Driving Technology Index
November 2018 (2): Addition of STOXX Europe 600 ESG-X Index
November 2018 (3): Addition of STOXX China P Chips Total Market and STOXX China ADR Total Market
January 2019: Improvement of wording regarding derived indices in 14.1 STOXX Europe Sustainability Indices
January 2019 (2): Addition of: EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices, EURO STOXX ESG-X & Ex Nuclear Power Minimum Variance Unconstrained Index and STOXX Global Sharing Economy Drivers Index
February 2019: Addition of STOXX Global Silver Economy, STOXX Global Millennials, STOXX Global Housing Construction, STOXX Global Sharing Economy, STOXX Global Industry 4.0, STOXX Global Smart Factory, STOXX Global Smart Cities indices
March 2019: Change of review timing for STOXX China A 900 Minimum Variance Unconstrained AM
May 2019: Addition of STOXX Benchmark ESG-X Indices
July 2019: Addition of EURO STOXX 50 ESG Index
July 2019 (2): Clarification of treatment of changes in country classification or listing in section 5.7
July 2019 (3): Methodology update – Universe change for the STOXX Sub Balkan 30 Index
August 2019: Addition of STOXX Global 1800 ex Eurozone Index
August 2019 (2): Switch from DVFA/EFFAS KPI's to standard Sustainalytics KPI's. Affected indices: STOXX Industry Neutral ESG indices, STOXX ESG Leaders indices and derived indices
August 2019 (3): Methodology change to STOXX Europe Christian Index
August 2019 (4): Methodology change to STOXX Activist Indices: Change of liquidity screen from USD 1 million to EUR 1 million
August 2019 (5): Methodology change to STOXX Optimised Country Indices: Removal of the quarterly applied fast exit rule with respect to share availability to foreign institutional investors
August 2019 (6): Methodology change to STOXX Optimised India: Removal of the selection screen with respect to share availability to foreign institutional investors for STOXX Optimised India Index
October 2019: Addition of STOXX Global Smart City Infrastructure Index
October 2019 (2): Addition of STOXX Global Next Generation Telecoms Index

2. CHANGES TO THE GUIDE BOOK

October 2019 (3): Clarification of selection list creation for STOXX Benchmark Indices and STOXX Global and Country Blue-chip Indices
November 2019: Addition of STOXX Germany Total Market ESG-X and STOXX Benchmark ESG-X ex Nuclear Power Indices
November 2019 (2): Addition of STOXX Global Low Risk Weighted Diversified 200 Index
January 2020: Clarification of Rebalancing frequency for STOXX Optimized Country indices. The section was missing, therefore not representing adequately the actual index maintenance process.
January 2020 (2): Clarification of availability of Size Indices based on the STOXX Global Indices.
January 2020 (3): Addition of STOXX Factor Indices
March 2020: Addition of STOXX Global Pet Care Index
March 2020 (2): Clarification on UN Global Compact with Sustainalytics Global Standards Screening and ESG Controversy Rating
March 2020 (3): Change the weight factor notional for the STOXX Low Risk Weighted Indices
March 2020 (4): Clarification on the fast exit rules of Select Dividend and Maximum Dividend indices
April 2020: Addition of STOXX Health & Weight Loss and STOXX Video Gaming & eSports indices
April 2020 (2): Amendment of capping rule of STOXX Europe 600 and EURO STOXX Supersector Indices with 30% / 15% Caps
April 2020 (3): Methodology change in the STOXX Global Digital Security, STOXX Global Electric Vehicles & Driving Technology and STOXX Global Smart City Infrastructure indices, as per the IOC determination
May 2020: Addition of STOXX ESG-X Factor Indices and addition to family of STOXX Factor Indices
May 2020 (2): Clarification added to Chapter 13.7, selection of STOXX Low Carbon blue-chip indices to reflect the changes in ICB Industries
June 2020: Addition of STOXX Global Thematic indices and STOXX Global Automation & Robotics (TTM) JPY index, following index name change (previously named iSTOXX FactSet Thematic indices)
June 2020 (2): Decommissioning of the STOXX Emerging Markets 50 ex BRIC index
June 2020 (3): Addition of STOXX Climate Transition Benchmark and STOXX Paris-Aligned Benchmark Indices
July 2020: Decommissioning of the STOXX Europe IPO (12 months) and STOXX Europe IPO (60 months) indices
July 2020 (2): Addition of ICB treatment effective on September 18 2020 for STOXX Climate Impact and Awareness Indices
July 2020 (3): Addition of ICB treatment effective on September 18 2020 for EURO STOXX 50, STOXX Europe 50, EURO STOXX 50 ex Financials, EURO STOXX ex Banks
July 2020 (4): Addition of ICB treatment effective on September 18 2020 for STOXX ASEAN Select Dividend 30, STOXX ASEAN-Five Select Dividend 50, STOXX Canada 60, STOXX Eastern Europe 50, STOXX Low Carbon Indices, STOXX Europe Football, STOXX Regional Industry Neutral ESG and STOXX Regional Excluding Tobacco Industry Neutral ESG indices, STOXX Strong Balance Sheet Indices, STOXX ESG Impact Indices, STOXX Sub Balkan 30, STOXX Global Low Risk Weighted Diversified 200
July 2020 (5): Addition of ICB treatment effective on September 18 2020 for EURO STOXX Large ex Financials, EURO STOXX Large ex Banks, STOXX Europe Large 200 ex Financials, STOXX Europe Large 200 ex Banks, EURO STOXX 50 ex Banks, STOXX Europe 50 ex Financials, EURO STOXX ex Banks, EURO STOXX ex Financials, STOXX Europe 600 ex

2. CHANGES TO THE GUIDE BOOK

Banks, STOXX Europe 600 ex Financials, STOXX Europe Low Carbon Diversification Select 50, STOXX Global Low Carbon Diversification Select 100, STOXX USA Low Carbon Diversification Select 50, EURO STOXX Low Carbon Diversification Select 50, STOXX Europe Low Carbon Select 50, STOXX Global Low Carbon Select 100, STOXX USA Low Carbon Select 50, EURO STOXX Low Carbon Select 50, STOXX Europe 600 Optimised Consumer Discretionary, STOXX Europe 600 Optimised Consumer Staples, STOXX Europe 600 Optimised Cyclicals, STOXX Europe 600 Optimised Defensives
July 2020 (5): Addition of STOXX Supersector and Industry Legacy indices and updation of Appendix for ICB 5 classification.
August 2020: Decommissioning of the EURO STOXX 50 Subindex Italy, STOXX Europe Total Market Tobacco, STOXX Europe Total Market Renewable Energy Equipment, STOXX Eastern Europe 300 Media, STOXX Canada 240 Automobiles & Parts, STOXX Canada 240 Chemicals, STOXX Canada 240 Construction & Materials, STOXX Canada 240 Food & Beverage, STOXX Canada 240 Telecommunications indices
August 2020 (2): Addition of ICB treatment effective on September 18, 2020 for STOXX Regional Real Estate Indices
August 2020 (3): Addition of ICB treatment effective on September 18, 2020 for STOXX Europe 600 and Euro STOXX 30%-15% capped indices
August 2020 (4): Clarification of wording of buffer rule for STOXX Blue-Chip Indices
September 2020: Decommissioning of the STOXX Ukraine Total Market, STOXX Optimised Country, STOXX Activist, STOXX Europe Football and BRIC-related STOXX equity indices
September 2020 (1): Amendment of ICB treatment effective on September 18, 2020 for STOXX Strong Balance Sheet Indices and addition of ICB treatment effective on September 18, 2020 for EURO STOXX Quality Dividend 50 Index.
September 2020 (2): Addition of ICB treatment effective on September 18, 2020 for ICB subsector Equity and Non-Equity Investment Instruments.
October 2020: Addition of STOXX Europe 400 and STOXX Europe 400 Supersector Indices
October 2020 (2): Removal of STOXX Europe IPO (12 months) and STOXX Europe IPO (60 months)
November 2020: Addition of EURO STOXX ESG-X Select Dividend 30 Index
November 2020 (2): Rule clarification for STOXX Global 3D Printing Indices
December 2020: Removal of STOXX Europe IPO (3 months) and STOXX True Exposure (25%, 100%, Developed Markets, Developed Markets ex Europe, Developed Markets ex USA, Emerging Markets)
January 2021: Clarification of rules for STOXX Minimum Variance and STOXX Factor indices regarding weight capping constraints

3. GENERAL PRINCIPLES

3.1. INDEX RATIONALE

STOXX defines the index rationale as the basis for applying a certain methodology in order to achieve the index objective. STOXX performs intensive research and may conduct conversations with market participants and third parties for this purpose. STOXX discloses the index objective in every case.

3.2. METHODOLOGY REVIEW POLICIES

STOXX constantly monitors the execution of the index calculation rules in order to ensure the validity of the index methodology. STOXX also conducts general methodology reviews in a periodic and ad-hoc basis, to reflect economic and political changes and developments in the investment industry. As result of these activities, STOXX introduces changes to the methodology books. Material changes are notified to subscribers and the media through the usual communication channels. Clarifications of the methodology are updated in the rulebook. All changes are tracked in the section 2.1 HISTORY OF CHANGES TO THE STOXX EQUITY METHODOLOGY GUIDE.

3.3. INDEX TERMINATION POLICY

For the termination of an index or index family for which outstanding products are present in the market to the knowledge of STOXX, a market consultation with the involved clients will be initiated by STOXX to take into account their views and concerns related to the termination or transition. A consultation period will be opened. Its duration depends on the specific issue. After the consultation period and in case of further action needed, a notification will be issued and the process defined above will be followed. In the case of a transition, STOXX will launch the alternative index and will notify of its character as a suitable replacement for an existing index whose calculation should be discontinued in the future. This notification advices clients on the alternative recommended by STOXX as replacement. The timeframe in which both indices will be calculated in parallel will be disclosed in the notification's text and will be no shorter than three months.

For the termination of an index or index family for which, to the knowledge of STOXX, no listed financial products are issued in the market, a press release notification or e-mail notification to subscribers will be communicated at least three months before coming into force. Clients or third parties with interest in the index or index family are urged to communicate as soon as possible their concerns to STOXX. Based on the feedback collected, STOXX may alter the index termination decision. For the termination of an index without financial product issued on there will be no market consultation. Changes to the original notification will be communicated in the same manner.

4. COVERAGE

4.1. STOXX GLOBAL EQUITY STOCK UNIVERSE

All common stocks and equities with similar characteristics from financial markets that provide real-time and historical component and currency pricing form the STOXX global equity universe. This universe and the following framework described in chapter 4 and 5 is used for all STOXX, iSTOXX and customized indices calculated by STOXX.

4.2. STOXX INVESTABLE UNIVERSE

The STOXX investable universe is the fraction of the STOXX global equity universe listed on the following stock exchanges and countries:

Western Europe		
Athens Stock Exchange (GR)	NASDAQ OMX Copenhagen (DK)	EURONEXT Lisbon (PT)
Bolsa De Madrid (ES)	NASDAQ OMX Helsinki (FI)	EURONEXT Paris (FR)
Borsa Italiana (IT)	NASDAQ OMX Iceland (IS)	Oslo Børs (NO)
Deutsche Börse (DE)	NASDAQ OMX Stockholm (SE)	SIX Swiss Exchange (CH)
Irish Stock Exchange (IE)	EURONEXT Amsterdam (NL)	Vienna Stock Exchange (AT)
London Stock Exchange (GB)	EURONEXT Brussels (BE)	
Eastern Europe		
Belgrade Stock Exchange (RS)	Istanbul Stock Exchange (TR)	NASDAQ OMX Tallinn (EE)
Bratislava Stock Exchange (SK)	Ljubljana Stock Exchange (SI)	NASDAQ OMX Vilnius (LT)
Bucharest Stock Exchange (RO)	Macedonian Stock Exchange (MK)	Prague Stock Exchange (CZ)
Budapest Stock Exchange (HU)	Malta Stock Exchange (MT)	Warsaw Stock Exchange (PL)
Bulgarian Stock Exchange – XETRA (BG)	MICEX Stock Exchange (RU)	Zagreb Stock Exchange (HR)
Cyprus Stock Exchange (CY)	NASDAQ OMX Riga (LV)	
Americas		
Bolsa de Valores de Colombia (CO)	Bolsa Mexicana de Valores (MX)	NYSE (US)
Bolsa de Valores de Lima (PE)	Buenos Aires Stock Exchange (AR)	Santiago Stock Exchange (CL)
Bolsa de Valores, Mercadorias & Futuros de São Paulo (BR)	NASDAQ (US)	Toronto Stock Exchange (CA)
Asia/Pacific		
Australia Securities Exchange (AU)	Korea Exchange (KR)	Singapore Exchange (SG)
Bombay Stock Exchange (IN)	Malaysia Stock Exchange (MY)	Stock Exchange of Thailand (TH)
Ho Chi Minh Stock Exchange (VN)	New Zealand Exchange (NZ)	Taiwan Stock Exchange (TW)
Hong Kong Stock Exchange (HK)	Philippine Stock Exchange (PH)	Tokyo Stock Exchange (JP)
Indonesia Stock Exchange (ID)	Shanghai Stock Exchange (CN)	
Karachi Stock Exchange (PK)	Shenzhen Stock Exchange (CN)	
Africa		
Casablanca Stock Exchange (MA)	Johannesburg Stock Exchange (ZA)	Tunis Stock Exchange (TN)
Egyptian Exchange (EG)	Nigerian Stock Exchange (NI)	Tel Aviv Stock Exchange (IL)

4.3. COUNTRY and REGIONAL CLASSIFICATIONS

4.3.1. OVERVIEW

The STOXX country classification model relies on a rules-based methodology. The six criteria for the classification of a country as a developed or emerging market include macroeconomic data, market capitalization, market liquidity, free currency convertibility on on-shore and off-shore markets, restrictions on capital flows and governance based on political stability, control of corruption and regulatory quality.

A formal reassessment of all country classifications is done annually in Q1, when a final classification assignment decision is made for each country. A public announcement[1] of any classification changes resulting from the annual reassessment is released latest by April of each year. Implementation of the classification changes occurs with the quarterly index review in Q3 of the same year.

4.3.2. COUNTRY SELECTION CRITERIA

The selection criteria are the following:
1: World Bank GNI per capita (Source: World Bank)
Definition: Only countries that are classified as Advanced by the World Bank in terms of GNI per capita (GNI/n), are considered as eligible for Developed Market status by STOXX. Advanced countries are those that have a GNI/n equal to or greater than the maximum cut-off value (e.g. $12 476 for 2016), as published by the World Bank on an annual basis.

2a: Market Capitalization Screening (Source: Thomson Reuters QAD / STOXX internal data)
Definition: Countries must have a market capitalization that is equal to or greater than the 20th percentile, as calculated in terms of the market capitalization of the countries covered by STOXX, to be eligible as either a Developed or Emerging Market. Countries that do not meet this criterion, will be Not Classified.

2b: Liquidity Screening (Source: Thomson Reuters QAD / STOXX internal data)
Definition: The total value of shares traded must be equal to or greater than the 40th percentile, as calculated in terms of the value of shares traded of the countries covered by STOXX, for a country to be eligible for Developed Market status. All countries that have a total value of shares traded of less than the 40th percentile, but equal to or greater than the 30th percentile, will only be eligible for Emerging Market status. All countries that have a total value of shares traded of below the 30th percentile, will be Not Classified.

For criteria 2a and 2b, the average data of the last three consecutive years are used in order to avoid short-term fluctuations, i.e. 2017 decisions are based on average data from 2014 to 2016.

3a: Free Currency Convertibility on On-Shore and Off-Shore Markets (Source: PwC - PricewaterhouseCoopers)
Definition: The remaining countries must have free currency convertibility and availability of developed on-shore and off-shore markets. To get into and out of their positions, foreign investors should be able to freely buy and sell the local currency.

This criterion is only considered at the time of classification. Extraordinary events will be assessed by the STOXX Oversight Committee.

[1] http://www.stoxx.com/indices/country_classification.html

3b: No Restrictions on Capital Flows (Source: PwC – PricewaterhouseCoopers)
Definition: Additionally, international investors have to be able to move funds freely in and out of the country.

3c: Governance Score (Source: World Bank)
Definition: Each country is assigned a governance score based on Political Stability, Control of Corruption and Regulatory Quality as contained within the Worldwide Governance Indicators report of the World Bank.

This criterion is only considered at the time of classification. Extraordinary events will be assessed by the STOXX Oversight Committee.

Only those countries that meet the all criteria as set in steps 1, 2a, considered as eligible for Developed Market status in 2b, as well as all criteria in steps 3a, 3b and 3c, will be classified as a STOXX Developed Market.

Countries that do not meet all the criteria in steps 3a to 3c, but meet the criterion in step 2a and are considered as eligible for Emerging Market status in 2b, are classified as a STOXX Emerging Market.

Countries that cannot be classified as Developed or Emerging Markets are considered Not Classified. Specifically, countries are considered Not Classified and are entirely excluded when they are Not Classified according to either of the minimum criteria in steps 2a or 2b.

STOXX Watch List [2]:

The general spirit in which the watch list is managed would follow the principles of maintaining market integrity while striving to minimize unnecessary client impact.

All countries that would have a different classification from the previous year, would be flagged and captured in a watch list. Countries will stay on this watch list for a period of at least 1 year, and in some circumstances may stay on the watch list for many years, in order to avoid countries being classified and reclassified because of a certain data point at a particular point in time.

Countries that oscillate between classification levels will maintain their last classification and remain on the watch list, unless decided otherwise by the STOXX Oversight Committee, within the framework provided by the STOXX Governance Process. The watch list would allow countries to be reclassified should the STOXX Oversight Committee deem in to be in the interest of market participants to expedite a new classification, within the framework provided by the STOXX Governance Process.

Countries may only change classification by a single level at a time, as compared to their current classification. STOXX may consider certain countries as borderline (countries that are either just below or just above the set thresholds) and may include these in the watch list to be observed and possibly reclassified by the STOXX Oversight Committee, within the framework provided by the STOXX Governance Process.

STOXX will review the regional classifications and index compositions in case a country announces changes to its currency and its companies adopt a new local currency at a future date.

[2] http://www.stoxx.com/indices/country_classification.html

Changes will be implemented with two trading days' notice provided that orderly trading in the original currency is possible following the announcement.

In addition, STOXX generally reviews a country's eligibility to any index at short notice in case of major market disruptions in that country.

4.3.3. REGIONAL SPECIFICS

STOXX classifies EU Enlarged as the current EU region and will be extend in line with the extension of the European union to cover the new EU member states.

The Eurozone contains companies that are allocated to one of the defined Eurozone countries according to the rules set out in chapter 5.7 (COUNTRY and LISTING), and that are traded in Euro. Companies allocated to Eurozone countries and not trading in EUR are not eligible for the Eurozone indices.

To cover the different share classes of companies from China, Taiwan and Hong Kong, the following STOXX index universe and regions exist:

Index family	Shares classes covered	Region
STOXX China	B, H and Red chips	As defined in table above
STOXX China A	A shares	Separate family outside of the STOXX Global index universe
STOXX China B	B shares	Derived from STOXX China universe
STOXX China H	H shares	Derived from STOXX China universe
STOXX China Red Chips	Red chip	Derived from STOXX China universe
STOXX China P Chips	P chip	Separate family outside of the STOXX Global index universe
STOXX China ADR	ADR	Separate family outside of the STOXX Global index universe
STOXX Greater China	B, H, Red chip, Hong Kong, Taiwan	Derived from STOXX China, HK, TW universe
STOXX Hong Kong All Shares	Hong Kong, H, Red Chips	Derived from STOXX HK and China universe

5. INDEX CHARACTERISTICS

The following framework described in chapter 5 is used for all STOXX, iSTOXX and customized indices calculated by STOXX.

5.1. MARKET CAPITALIZATION-WEIGHTED INDICES AND PRICE- WEIGHTED INDICES

The Free-Float Market Capitalization determines the weights of each constituent in Free-Float Market Capitalization weighted indices. Price-weighted indices are weighted by the price and another appropriate weighting factor. For details on the calculation formula please consult the STOXX calculation guide and the weighting factor definition in chapter 5.13 of this document.

5.2. SELECTION LISTS

The selection lists are produced for indices with a fixed number of constituents in order to determine replacements for any stock deleted from the indices due to a corporate actions.

The selection lists are calculated based on the most recent data as known to STOXX at the cut-off date, which corresponds to the last trading day of the previous month.
The most recent free-float data is applicable to selection lists published in March, June, September and December.

Selection lists can also indicate possible changes in the composition of the index at the next review.

5.3. INDEX REVIEW

To keep up with the latest development of the stock markets, all indices are reviewed on a regular basis to ensure a transparent and up-to-date index basket. The implementation ("the rebalancing") is usually conducted quarterly after the close every third Friday in March, June, September and December and effective the next trading day.
If the implementation day is a non-trading day then all dates will be preponed by one trading day accordingly. The review effective day remains the next trading day following the implementation day.

Component changes are announced:

on the first trading day of the review month for major blue-chip indices and major benchmark indices. This excludes the STOXX Benchmark ESG-X, STOXX Benchmark ESG-X ex Nuclear Power, STOXX Climate Transition Benchmark and STOXX Paris-Aligned Benchmark Indices

on the fifth trading day of the review month for price weighted indices

on the second Friday of the review month for all other indices, including the STOXX Benchmark ESG-X, STOXX Benchmark ESG-X ex Nuclear Power, STOXX Climate Transition Benchmark and STOXX Paris-Aligned Benchmark Indices.

The most recent free-float data as known to STOXX are used for the component selection. The detailed cut off dates are available in the STOXX Calculation Guide.

The underlying data (i.e. shares, free-floats, weighting factors and cap factors) are announced prior to the review implementation:

» for blue-chip indices two trading days ahead
» for all other indices five trading days ahead

For the calculation of weighting and capping factors, the closing prices on the trading day before the announcements are used.

Diverging announcement schedules may occur and are defined in the specific index methodology and communicated in advance. The detailed review schedule is published on the STOXX website.[3]

5.4. BUFFERS

Buffers are used in the periodic reviews to reduce turnover. Based on an index-specific characteristic, an upper and a lower limit is set around the index target coverage. Stocks ranked at and above the upper limit are selected for the index. The remaining stocks necessary to achieve the target coverage (fixed number of stocks or market capitalization threshold) are selected from the highest-ranked remaining current stocks between the upper and lower limit. If the target coverage is still not achieved, the highest remaining stocks are selected until the target coverage is achieved.

5.5. LIQUIDITY

During the period review processes liquidity screenings are applied as defined in the specific index methodology sections (e.g. companies must have a minimum Average Daily Traded Value over a given time period). A company's ADTV is based on the trading volumes of the specific listing used for the index calculation. In case the determined ADTV level does not allow a selection of the defined number of constituents in a fixed component index, the liquidity threshold is adjusted downwards accordingly.

[3] http://www.stoxx.com/news/review_dates.html

5. INDEX CHARACTERISTICS

In case of market events that negatively influence the aggregated liquidity and market capitalization of entire markets, the liquidity requirements can be lowered or the period index review can be postponed to the next quarterly review date. In such cases, the composition remains unchanged, but new weighting factors will be implemented. Changes will communicated in advance.

5.6. STOCK CHARACTERISTICS

Index values are calculated within the STOXX framework based on, but not limited to, one or more of the following characteristics. These characteristics are screened during the quarterly review process (ordinary adjustment) and extraordinarily outside of the review period in case of corporate actions . Please refer to the calculation guide for further details about extraordinary adjustments and corporate actions treatment. To access the latest information about extraordinary adjustments subscribe to the STOXX E-Mail distribution list and download regularly the Corporate Action forecast[4].

5.7. COUNTRY AND LISTING

Each stock is uniquely assigned to a specific country and listing within the STOXX investable universe. The country classification and listing is based on the country of incorporation, the primary listing and the country with the largest trading volume. American and depositary receipts (e.g. ADRs/GDRs) are assigned to the same country as the stock on which the receipt is issued.
Changes to country classification and listing are effective as of the next quarterly review. At that time all indices are adjusted accordingly to remain consistent with their respective country membership rules by deleting the company where necessary.

Each country is assigned to one or more regions according to chapter 4.3.

5.8. CURRENCY

Each stock is uniquely assigned a specific currency depending on the selected listing.

5.9. INDUSTRY CLASSIFICATION BENCHMARK (ICB) CODE

Each stock is assigned a specific and unique ICB Code. The Industry Classification Benchmark (ICB) groups together companies that have similar sources of primary revenue. The detailed hierarchy of the Industry Classification Benchmark is shown in Appendix 1.
Sector changes are implemented immediately subsequent to corporate actions. Otherwise they are published at the next component announcement and applied at the quarterly review.
Effective up until September 2020 review, unless, stated explicitly in the individual index methodologies differently all companies classified into the ICB categories 8985 (Equity Investment Instruments) and 8995 (Non-equity Investment Instruments) are not eligible for inclusion into the

[4] http://www.stoxx.com/mystoxx/activation.html
http://www.stoxx.com/data/corporate_actions.html, updated daily

indices. Effective with September 2020 review, unless, stated explicitly in the individual index methodologies differently all companies classified into the ICB categories 30204000 (Equity Investment Instruments) and 30205000 (Non-equity Investment Instruments) are not eligible for inclusion into the indices.

5.10. CORPORATE ACTIONS

All index components are adjusted for corporate actions. Any event is treated in the same way in all indices. Please consult to the STOXX Calculation guide for the detailed treatments.

5.11. NUMBER OF SHARES

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

5.12. FREE-FLOAT FACTORS

Each stock is assigned a unique free-float factor within the STOXX universe. The free-float factor reduces the number of shares to the actual amount available on the market. All fractions of the total number of shares that are larger than 5% and whose holding is of a long-term nature are excluded from the index calculation. This includes:

Cross-ownership: stock owned either by the company itself, in the form of treasury shares, or owned by other companies;
Government ownership: stock owned by either governments or their agencies;
Private ownership: stock owned by either individuals or families;
Restricted shares that cannot be traded during a certain period or have a foreign ownership restriction.

Block ownership is not applied for holdings of custodian nominees, trustee companies, mutual funds, investment companies with short-term investment strategies, pension funds and similar entities.
The free-float factors are reviewed on a quarterly basis. They are published on the quarterly underlying data announcement and implemented on the quarterly review implementation.

5.13. WEIGHTING FACTOR

Weighting factors are applied in price-weighted indices instead of the factor “shares times free-float”. Weighting factors are calculated on the basis of other criteria like for example dividend data. Weighting factors are adjusted for corporate actions. Please consult the STOXX Calculation Guide for further details.

5.14. FREE-FLOAT MARKET CAPITALIZATION

The free-float market capitalization is the share of a stocks' total market capitalization that is available for trading:
Free-float market capitalization = free-float factor × full market capitalization
The weighting factor multiplied by the price of the share determines the weight of a company within a price-weighted index.

5.15. CAPPING FACTORS

5.15.1. WEIGHTING CAP FACTORS
The factor limits the maximum weighting for a stock at the time of the review. Weighting cap factors are updated during the regular quarterly index reviews and not adjusted for corporate actions. The weighting cap factors are used to achieve a diversification and avoid a dominance of a single stock, region, country or sector in an index.
Depending on the objective of the index different maximum weights are sets. Blue-chip indices are capped at 10% per component while some benchmark indices have a capping at 20%. For other indices, especially the STOXX capped Supersector indices, due to a narrow underlying universe and to reflect the market appropriately the indices are capped at 30% for largest and 15% for the second largest constituent.
Further details can be found in the individual index methodologies of this rule book.

5.15.2. LIQUIDITY SCALING FACTORS
Liquidity scaling factors are used in the STOXX Optimised indices. The factor is based on the average daily turnover (ADTV) of the stock over the most recent three-month period, measured one day before the underlying data announcement date. The factor is kept constant between reviews and is calculated as follows:

1. Determination of free-float market capitalization weights:

$$w_{it} = \frac{p_{it} \cdot n_{it} \cdot ff_{it}}{\sum_{i=1}^{n} p_{it} \cdot n_{it} \cdot ff_{it}}$$

p_{it} = Price of company (i) at time (t)
n_{it} = Number of shares of company (i) at time (t)
ff_{it} = Free-float factor of company (i) at time (t)
n = Number of shares

2. Calculation of liquidity value:

$$lv_{it} = \frac{w_{it}}{ADTV3m_{it}}$$

w_{it} = Free-float market capitalization weight (i) at time (t) in the specific index basket
$ADTV3m_{it}$ = Average Daily Traded Value (i) at time (t)

Calculation of sum of weighted liquidity values:

$$wlv_t = \sum_{i=1}^{n} w_{it} \times lv_{it}$$

3. Calculation of liquidity scaling cap factor:

$$cf_{it} = \begin{cases} \frac{wlv_t}{lv_{it}} & \text{if}(lv_{it} > wlv_t) \\ 1 & \text{if}(lv_{it} \le wlv_t) \end{cases}$$

The factor therefore reduces the liquidity value to the weighted average, if it is larger than that average.

6. STOXX TOTAL MARKET INDICES (TMI)

6.1. TOTAL MARKET COUNTRY INDICES

6.1.1. OVERVIEW

The STOXX Country Total Market indices are the basis for all regional STOXX Total Market indices. Each country index aims to represent a broad market and covers at least 95% of the free-float market capitalization of the respective country. The individual country coverage thresholds are published on a quarterly basis on www.stoxx.com. The STOXX Total Market country indices serve as basis for the component selection of the regional Total Market indices.

Universe: All stocks in the investable universe selected by their unique country code.

6.1.2. INDEX REVIEW

Selection list: For all companies available in the global stock universe pricing, volume and reference data are obtained from Thomson Reuters. For current index constituent the data are enriched by STOXX data. Each company is assigned a unique country code, listing and ICB code valid for all STOXX indices.

For all companies the following screenings and filters are applied to determine eligibility:

Exclusion criteria

» Only common stocks and equities with similar characteristics from financial markets that provide reliable real-time, historical component and currency pricing, and reference and corporate actions data are eligible according to chapter 4.1

» Only listed companies on a regulated market on an exchange defined in the STOXX Investable Universe are eligible according to chapter 4.2

» Effective up until September 2020 review, Equity or Non-Equity Investment Instruments according to the Industry Classification Benchmark (ICB: 8985 or 8995) are not eligible. Effective with September 2020 review, Equity or Non-Equity Investment Instruments according to the Industry Classification Benchmark (ICB: 30204000 or 30205000) are not eligible.

» Companies that were recently removed from the indices due to mergers and acquisition are not eligible

China specific rules

» P Chips are securities of companies not incorporated in the PRC, headquartered either in China or Hong Kong, listed in the Hong Kong stock exchange and not defined as belonging to any of the other China share classes (as per STOXX classification). For P Chips, the following revenue filters then are applied to determine eligibility to be classified as a P Chip and form part of the investable stock universe: for companies headquartered in China, revenues derived from the PRC should be more than 70% and for companies headquartered in Hong Kong, revenues derived from the PRC should be more than 80%. For existing companies in the index that are headquartered in China, revenues derived from mainland China should be more than 60% and for existing companies in the index headquartered in Hong Kong, revenues derived from mainland China should be more than 70%.

» ADRs are depositary receipts of companies not incorporated in the PRC, headquartered either in China or Hong Kong and listed in the New York or Nasdaq stock exchanges. For

ADRs, the following filters then are applied to determine eligibility: revenues derived from mainland China should be more than 60%. For existing companies in the index, revenues derived from mainland China should be more than 50%.

Determination of most liquid market
» For all companies the most liquid market is identified out of all listing and country combinations. The company's listing must be in the same region (Americas, Europe, Asia / Pacific) as the country assignment to be eligible

Country and regional assignments in STOXX universe
» According to chapters 4.3 and 5.7

Non-trading day screenings
» Companies are screened for their non-trading days in the three-month period preceding the review cut-off date
» Spin-offs and companies that were suspended due to corporate actions are considered as eligible
» Companies with an IPO date in the three-month period preceding the review cut-off date are considered as eligible
» Companies assigned to Non-Developed Market countries according to the STOXX country classifications are not eligible if they exceed 10 non-trading days

Component selection: Target coverage is at least 95% of the free-float market capitalization of the investable stock universe at the cut-off date in the regarding country.

Review procedure: All stocks in the investable stock universe of the country in question are ranked in terms of their free-float market capitalization at the cut-off date to produce the review list. A 93-99% buffer is applied as follows:

1. The largest companies in the investible universe with a cumulative free-float market capitalization up to and including 93% of the investible universe, qualify for selection.
2. The stocks covering the next two percent of cumulative free-float market capitalization are selected among the largest remaining current TMI components representing the portion of capitalization above 93% and up to and including 99%.
3. If the country coverage is still below the defined threshold, then the largest remaining stocks are selected until the country coverage is reached, as stated in section 6.1.1.

Review frequency: The reviews are conducted on a quarterly basis. The review cut-off date is the last trading day of the month following the last quarterly index review.

Weighting cap factors: The components are not subject to component weight restrictions and capping.

Derived indices: All STOXX Regional Total Market indices.

6.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

6. STOXX TOTAL MARKET INDICES (TMI)

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-offs are added permanently if qualifying for the STOXX TMI indices as of the latest quarterly review list in terms of free-float market capitalization.

6. STOXX TOTAL MARKET INDICES (TMI)

6.2. TOTAL MARKET REGIONAL INDICES

6.2.1. OVERVIEW

The STOXX Regional Total Market indices are aggregates of the STOXX Total Market country indices. They aim to provide a broad representation of the respective region.

Universe: at least 95% of the free-float market capitalization of the investable stock universe by country.

Regional aggregates exist for several regions as defined in section 4.3:
Global, Developed Markets, Emerging Markets, Americas, North America, Latin America, Asia, East Asia, Pacific, Asia Pacific, Africa, All Europe, Europe, Nordic, Eurozone, Eastern Europe, EU Enlarged, Balkan

For a complete list please consult the data vendor code sheet on the website[5]. Customized solutions can be provided upon request.

Weighting scheme: The indices are weighted according to free-float market capitalization: No weighting cap factors are applied. All derived indices can be rolled-up to form the parent index.

Base values and dates: The following base values and dates apply:

STOXX Global Total Market Index: 100 on January 31, 2011
STOXX Americas Total Market Index: 100 on January 31, 2011
STOXX All Europe Total Market Index: 100 on January 31, 2011
STOXX Asia Total Market Index: 100 on January 31, 2011
STOXX Pacific Total Market Index: 100 on January 31, 2011
STOXX Latin America Total Market Index: 100 on January 31, 2011
STOXX Europe Total Market Index: 100 on December 31, 1991
STOXX Nordic Total Market Index: 100 on December 31, 1991
STOXX EU Enlarged TMI: 100 on December 31, 2002
STOXX Eastern Europe Total Market Index: 100 on December 31, 2002
STOXX Balkan Total Market Index: 100 on December 31, 2004
STOXX Emerging Market Total Market Index: 100 on January 31, 2011
STOXX Africa Total Market Index: 100 on January 31, 2011
STOXX East Asia Total Market: 100 on January 31, 2011
STOXX Developed Markets Total Market: 100 on January 31, 2011
STOXX Developed and Emerging Markets Total Market 100 on January 31

Index types and currencies: Price, gross return and net return in EUR and USD

6.2.2. INDEX REVIEW

Component selection: The indices consist of the components of the relevant Total Market Country indices.

[5] http://www.STOXX.com/download/indices/vendor_codes.xls

6. STOXX TOTAL MARKET INDICES (TMI)

Review frequency: The reviews are conducted on a quarterly basis together with the STOXX Total Market Country indices.

Derived indices:

Sector and Size Indices*	
STOXX {Region}	<Index> ‹ICB Industry›
STOXX {Region}	<Index> ‹ ICB Supersector›
STOXX {Region}	<Index> ‹ ICB Sector›*
STOXX {Region}	<Index> ‹ ICB Subsector›*
STOXX {Region}	<Index> Large
STOXX {Region}	<Index> Mid
STOXX {Region}	<Index> Small

*As some of these indices would not have enough components, not all indices are disseminated.

Ex Regions: A number of regions are calculated with the exclusion of certain countries.
Furthermore all fixed component benchmark indices are derived from the TMI indices. Please see chapter 7 for details

6.2.3. ONGOING MAINTENANCE

Replacements: In line with the STOXX Total Market country indices, deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-offs are added permanently if qualifying for the STOXX TMI indices as of the latest quarterly review list in terms of free-float market capitalization.

6. STOXX TOTAL MARKET INDICES (TMI)

6.3. TOTAL MARKET SIZE INDICES

6.3.1. OVERVIEW

The size indices are derived from the STOXX Global Total Market indices. They aim in grouping large, mid and small companies by their total market capitalization in their specific regions.

Universe: Sizes are derived for selected countries and the regions Europe, EU-Enlarged and Eastern Europe.

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base value and dates: The following base values and dates apply:
Europe TMI Size indices : 100 on December 31, 1991
Nordic TMI Size: 100 on December 31, 1991
EU Enlarged TMI Size indices: 100 on December 31, 2002
Eastern Europe TMI Size indices: 100 on December 31, 2002

6.3.2. INDEX REVIEW

Component selection: On a quarterly basis, the companies in the given STOXX TMI are ranked in terms of their total market capitalization in descending order. For each company, the total market capitalization based on all its stock classes is used to produce the investible universe. Prices, exchange rates and shares as of the review cut-off date are used. For companies which have been selected for a TMI, sizes will be assigned as follows in order to produce the relevant review selection lists:

STOXX TMI Large Index (67.5 - 75 buffer rule)
Target coverage: The largest companies representing the portion of cumulative total market capitalization up to and including 70% in the investible universe. The companies representing a cumulative capitalization of 67.5% are selected; additionally, current Large companies representing the portion of the cumulative capitalization above 67.5% and up to and including 75%, are also included.

STOXX TMI Mid Index (85 - 92.5 buffer rule)
Target coverage: Companies representing the portion of cumulative total market capitalization in the investible universe above 70% and up to and including 90% in the investible universe. Companies representing the portion of cumulative capitalization up to and including 85% and which have not already been assigned to the Large segment qualify for selection. Current Mid companies representing the portion of cumulative capitalization above 85% and up to and including 92.5%, are also included.

STOXX TMI Small Index
Target coverage: Companies representing the portion of cumulative total market capitalization in the investible universe above 90%. Companies not already assigned to the Large or Mid segments are assigned to the Small segment.

6. STOXX TOTAL MARKET INDICES (TMI)

Review frequency: The reviews are conducted on a quarterly basis together with the STOXX Global Total Market indices.

Weighting cap factors: The components are not subject to component weight restrictions and capping.

Derived indices:

Region	Index
Europe	STOXX Europe Total Market <Size>
Eurozone	EURO STOXX Total Market <Size>
Europe ex UK	STOXX Europe ex UK Total Market <Size>
Europe ex Euro	STOXX Europe ex Eurozone Total Market <Size>
Nordic	STOXX Nordic Total Market <Size>
Eastern Europe	STOXX Eastern Europe Total Market <Size>

6.3.3. ONGOING MAINTENANCE

Replacements: In line with the respective STOXX country TMI index; deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-offs are added permanently if qualifying for the STOXX TMI indices as of the latest quarterly review list in terms of free-float market capitalization. A spin-off is added to same size category as the parent company.

7. STOXX BENCHMARK INDICES (BMI)

7.1. STOXX GLOBAL INDICES

7.1.1. OVERVIEW

In contrast to the STOXX Total Market family the STOXX Benchmarks are indices with a fixed number of constituents. They can be distinguished into the STOXX Global family covering all markets and a family covering only the three developed regional markets (Americas, Asia/Pacific, Europe). The latter one is represented by the STOXX Global 1800 and its sub-indices.
The STOXX Global indices are fixed-number indices which cover the largest stocks of the respective regional or country Total Market index in terms of free-float market capitalization. The basis for all indices is the STOXX Global Total Market index.

The following regional indices are calculated:

- STOXX Global 3000
- STOXX Africa 90
- STOXX All Europe 800
- STOXX Americas 1200
- STOXX Asia 1200
- STOXX Developed Markets 2400
- STOXX East Asia 1800
- STOXX Eastern Europe 300
- STOXX Emerging Markets 1500
- STOXX Greater China 480
- STOXX Hong Kong All Shares 180
- STOXX Latin America 200
- STOXX Pacific 100

Note: The STOXX Global 3000 is not an aggregate of the regional benchmark indices Americas, All Europe, Asia and Pacific.

The following country indices are calculated:

- STOXX Australia 150
- STOXX Canada 240
- STOXX China A-900
- STOXX France 90
- STOXX Hong Kong 210
- STOXX Italy 45
- STOXX Japan 600
- STOXX Singapore 75
- STOXX South Korea 200
- STOXX Spain 30
- STOXX UK 180
- STOXX USA 500
- STOXX USA 900

Universe: The universe is defined by the Total Market indices of the specific region or country.

Weighting scheme: The indices are weighted according to free-float market capitalization.

7. STOXX BENCHMARK INDICES (BMI)

Base values and dates: The following base values and dates apply: 100 on January 31, 2011

For a complete list please consult the data vendor code sheet on the website[6].

Index types and currencies: Price, gross return and net return in EUR and USD.

Dissemination calendar: STOXX Europe calendar except STOXX USA 500 (STOXX Americas calendar)

7.1.2. INDEX REVIEW

Component Selection: Target coverage: Largest companies in the respective TMI in terms of Free-Float Market capitalization; for each company only the most liquid stock is considered. The parent of the STOXX USA 500 is the STOXX USA 900.

A liquidity filter is applied for the STOXX Japan 600 selection. It filters out all companies where the 3 months Average Daily Traded Value (ADTV) is smaller than the maximum of (75% percentile of the 3 months ADTVs in STOXX Japan TMI or 0.5m EUR).

Review procedures: On the quarterly review date the eligible stocks are ranked in terms of free-float market capitalization to produce the index selection list.

Buffer Rule: A 10% buffer rule applies to select the constituents (except for Eastern Europe) for the regional indices and country benchmark indices.

Index Name	Components	Upper buffer	Lower buffer
STOXX Africa 90	90	81	99
STOXX All Europe 800	800	720	880
STOXX Americas 1200	1200	1080	1320
STOXX Asia 1200	1200	1080	1320
STOXX Developed Markets 2400	2400	2160	2640
STOXX East Asia 1800	1800	1620	1980
STOXX Eastern Europe 300	300	275	375
STOXX Emerging Markets 1500	1500	1350	1650
STOXX Global 3000	3000	2700	3300
STOXX Greater China 480	480	432	528
STOXX Hong Kong All Shares 180	180	162	198
STOXX Latin America 200	200	180	220
STOXX Pacific 100	100	90	110

Country indices:

6 http://www.STOXX.com/download/indices/vendor_codes.xls

7. STOXX BENCHMARK INDICES (BMI)

Index Name	Components	Upper buffer	Lower buffer
STOXX Australia 150	150	135	165
STOXX Canada 240	240	216	264
STOXX China A-900	900	810	990
STOXX France 90	90	81	99
STOXX Greater China 480	480	432	528
STOXX Hong Kong 210	210	189	231
STOXX Hong Kong All Shares 180	180	162	198
STOXX Italy 45	45	40	50
STOXX Japan 600	600	540	660
STOXX Singapore 75	75	68	83
STOXX South Korea 200	200	180	220
STOXX Spain 30	30	27	33
STOXX UK 180	180	162	198
STOXX USA 500	500	450	550
STOXX USA 900	900	810	990

The table reads the following:
For the STOXX Global 3000 the largest 2700 stocks (upper buffer) on the selection list qualify for selection. The remaining 300 stocks (components needed minus the upper buffer) are selected from the largest remaining current components ranked between 2701 and 3300 (lower buffer). If the number of stocks selected is still below 3000, the largest remaining stocks are selected until there are enough stocks.

Review Frequency: The reviews are conducted on a quarterly basis in March, June, September and December. The review cut-off date is the last trading day of the month preceding the review month.

Weighting Cap Factors: The indices are uncapped except for the STOXX Eastern Europe 300 which is capped at 20% and the STOXX USA 500 which is capped at 10% on a component level.

Derived Indices: Sector sub-sets exist according to the ICB classification for STOXX Global 3000. A number of regions are calculated under exclusion of certain countries. For a complete list please consult the data vendor code sheet on the website[6].

Type	Index
Supersector	<Index> ‹ICB Supersector›
Sector	<Index> ‹ICB Sector›
Ex-Country indices	<Index> ex Country

7.1.3. ONGOING MAINTENANCE

Selection list: The selection list is updated on a monthly basis according to the review component selection process and Selection list definition in section 5.2 of STOXX Index methodology Guide.

Replacements: To maintain the number of components constant, a deleted stock is replaced by the highest ranked non-component on the selection list. During the review implementation month the published review component list is used as selection list.

Fast Exit: Not applicable.
Fast entry: Not applicable.

Spin-offs: Each spin-off stock qualifies for addition, if it lies within the upper buffer on the latest selection list for the specific index. The spin-off replaces the lowest ranked stock in that index, as determined by the selection list.
Qualifying spin-off stocks are added in sequence:
The largest qualifying spin-off stock replaces the original stock in the index.
The next qualifying spin-off stock replaces the lowest ranked stock in the index.
Likewise for the other qualifying spin-off stocks.

7. STOXX BENCHMARK INDICES (BMI)

7.2. STOXX GLOBAL 1800 AND DERIVED INDICES

7.2.1. OVERVIEW

These indices are fixed component Benchmark indices covering the largest developed market stocks of the relevant regional Total Market Indices in terms of free-float market capitalization.

The parent component benchmark indices are:
STOXX North America 600
STOXX Asia/Pacific 600
STOXX Europe 600
STOXX Global 1800 (an aggregate of the regional 600s of Europe, the North America and Asia/Pacific)

Universe: The following regional aggregates as defined in section 4.3 are calculated: Global (developed), North America, Asia/Pacific and Europe

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base value and date: 100 on December 31, 1991.

Index types and currencies: Price, net return and gross return in EUR and USD.

For a complete list please consult the data vendor code sheet on the website[7].

7.2.2. INDEX REVIEW

Selection list: The STOXX <Region> 600 Benchmark indices are reviewed on a quarterly basis. The target coverage are the largest 600 companies in the relevant regional Total Market Index. The following criteria are applied:

» for each company only the most liquid stock is considered
» Stocks must have a minimum liquidity of greater than one million EUR measured over 3-month average daily trading volume (ADTV)

All eligible stocks are ranked in terms of free-float market capitalization to produce the selection list.

Component Selection: The largest 550 stocks on the selection list qualify for selection. The remaining 50 stocks are selected from the largest remaining current components ranked between 551 and 750.
If the number of stocks selected is still below 600, the largest remaining stocks are selected until there are enough stocks.

[7] http://www.STOXX.com/download/indices/vendor_codes.xls

7. STOXX BENCHMARK INDICES (BMI)

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December. The review cut-off date is the last trading day of the month preceding the review month.

Weighting cap factors: 20% on a component level for the following regional indices: Global, Europe, Asia/Pacific, North Americas and the Eurozone subset.

Derived indices and regional subsets: Further regional subsets are derived from STOXX <Region> 600 Benchmark indices by including only selected countries according to the definitions in section 4.3 of this rule book. The sub-indices do not have a fixed number of constituents. Their constituent numbers depends on how their region is represented in the parent index.
E.g. for the Eurozone the index is derived in the following way: The STOXX Europe 600 is created as specified in this chapter. To obtain the EURO STOXX subset only the stocks with countries eligible for the Eurozone as defined in section 4.3 are chosen from the STOXX Europe 600.

Size and Sector indices: Size indices and sector indices are derived according to the ICB industry classification for various regions. Further, for the STOXX Europe 600 and the EURO STOXX the following set of Supersector index families exists.

» The STOXX Europe 600 Supersectors and EURO STOXX Supersectors 30-15 (please refer to chapter 7.5) cap the weight of the largest and second largest company in each Supersector at 30% and 15%.

Please refer to the following sections 7.3 to 7.6 for further details on the sizes and sector indices. For a complete list please consult the data vendor code sheet on the website[8].

Region	Index
Global (developed)	STOXX Global 1800
Europe	STOXX Europe 600
Eurozone	EURO STOXX
Europe ex UK	STOXX Europe ex UK
Europe ex Euro	STOXX Europe ex Eurozone
Nordic	STOXX Nordic
Americas	STOXX North America 600
Asia/Pacific	STOXX Asia/Pacific 600
Asia/Pacific ex Japan	STOXX Asia/Pacific 600 ex Japan
Global ex Eurozone	STOXX Global 1800 ex Eurozone

Sector and Size Indices	Index
STOXX <Region>	<Index> ‹ICB Industry›
STOXX <Region>	<Index> ‹Supersector› (with 30% / 15% capping)
STOXX <Region>	<Index> ‹ICB Sector›*
STOXX <Region>	<Index> ‹ICB Subsector›*
STOXX <Region>	<Index> Large

8 http://www.STOXX.com/download/indices/vendor_codes.xls

7. STOXX BENCHMARK INDICES (BMI)

STOXX <Region>	<Index> Mid
STOXX <Region>	<Index> Small

*As some of these indices would not have enough components, not all indices are disseminated.

Effective up until September 2020 review,

Ex-Sector Indices	Index
Ex- Financials (excluding ICB 8000)	STOXX Europe 600 ex- Financials
	EURO STOXX ex-Financials
Ex-Banks (excluding ICB 8300)	STOXX Europe 600 ex- Banks
	EURO STOXX ex-Banks
Ex-Country indices	<Index> ex Country

Effective with September 2020 review,

Ex-Sector Indices	Index
Ex- Financials (excluding ICB 30)	STOXX Europe 600 ex- Financials
	EURO STOXX ex-Financials
Ex-Banks (excluding ICB 3010)	STOXX Europe 600 ex- Banks
	EURO STOXX ex-Banks
Ex-Country indices	<Index> ex Country

The ex-Banks and ex-Financial indices use cap factors of the parent indices.

7.2.3. ONGOING MAINTENANCE

Selection list: The selection list is updated on a monthly basis according to the review component selection process and Selection list definition in section 5.2 of STOXX Index methodology Guide.

Replacements: To maintain the number of components constant, a deleted stock is replaced by the highest-ranked non-component on the selection list in the parent index. During the review implementation month the published review component list is used as selection list.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Each spin-off stock qualifies for addition, if it lies within the upper buffer on the latest selection list for the specific index. The spin-off replaces the lowest ranked stock in that index, as determined by the selection list.
Qualifying spin-off stocks are added in sequence:
The largest qualifying spin-off stock replaces the original stock in the index.
The next qualifying spin-off stock replaces the lowest ranked stock in the index.
Likewise for the other qualifying spin-off stocks.

7.3. SIZE INDICES BASED ON THE STOXX GLOBAL INDICES

7.3.1. OVERVIEW

The Size indices are fixed component indices that divide their benchmark index into three size categories by free-float market capitalization: Large, Mid and Small. They also exist for various sub-regions and countries, e.g. the STOXX Europe 600, the EURO STOXX and STOXX Eastern Europe 300.

Universe: The following regional aggregates as defined in section 4.3 are calculated: Global, Europe, Eastern Europe, Eurozone, Europe ex UK, Europe ex Eurozone, Emerging Markets, Nordics, North America, Asia/Pacific, USA, Japan.

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base value and date: 100 on December 31, 1991.

Index types and currencies: Price, net return and gross return in EUR and USD.

For a complete list please consult the data vendor code sheet on the website[9].

7.3.2. INDEX REVIEW

The components of the Size indices are derived from their respective STOXX <Region> Benchmark index. E.g. the STOXX Global 1800 serves as basis for the STOXX Global 1800 Size indices and the STOXX Europe 600 accordingly for the STOXX Europe 600 Size indices.

Selection list: After the review of the STOXX regional Benchmark Index has been conducted according to chapters 7.1 and 7.2, all components are ranked by the free-float market capitalization to produce the review selection list for the size indices.

Composition list:
Large-Size indices (28⅓% - 38⅓% buffer rule)
Target coverage: Largest ⅓ (33⅓%) of the companies from the relevant fixed component index:

1. The largest 28⅓% stocks on the selection list are selected.
2. The remaining 5% stocks are selected from the largest remaining current components of the according fixed component index, ranked between 28⅓% and 38⅓%.
3. If the number of stocks selected is still below 33⅓%, the largest remaining stocks are selected until there are sufficient stocks in the index.

Mid-Size indices (58⅓% – 75% buffer rule)
Target coverage: The medium ⅓ (33⅓%) of the companies from the relevant fixed component index:

[9] http://www.STOXX.com/download/indices/vendor_codes.xls

7. STOXX BENCHMARK INDICES (BMI)

1. The largest 58⅓% stocks on the selection list qualify for selection. Out of these 58⅓% stocks, 33⅓% are already selected in the previous step for the Large-Size index, thus only the remaining 25% are selected for the relevant Mid index.
2. To achieve the full coverage of the Mid-Size Index the missing 8⅓% stocks are selected from the largest remaining current Large and Mid-components ranked between 58⅓% and 75%.
3. If the number of stocks selected is still below 33⅓%, the largest remaining stocks from the selection list are selected.

Small-Size indices
The remainder 1/3 (33⅓%) of stocks of the selection list is considered a Small component.

Table for the applied buffer rules of selected indices:

Size /Buffer	STOXX Europe 600	STOXX Eastern Europe 300	STOXX USA 900
Target coverage per Size Index	200	100	300
Large (upper buffer)	170	85	255
Large (lower buffer)	230	115	345
Mid (upper buffer)	350	175	525
Mid (lower buffer)	450	225	675
Small (lower buffer)	600	300	900

Review frequency: The indices are reviewed on a quarterly basis together with the fixed component benchmark indices.

Weighting cap factors: 20% on a component level for the Europe, North America, Asia/Pacific, Eurozone and Eastern Europe regions.

Derived indices and regional subsets: Further regional subsets are derived from the Size indices by including only selected countries according to the definitions in section 4.3 of this rule book. The sub-indices do not have a fixed number of constituents. Their constituent numbers depends on how their region is represented in the parent index.
E.g. for the Eurozone the size indices are derived in the following way: The STOXX Europe 600 is created as specified in chapter 7.2. The STOXX Europe Large 200 is derived as specified in this chapter based on the previously created STOXX Europe 600. To obtain the EURO STOXX Large only the stocks with countries eligible for the Eurozone as defined in section 4.3 are chosen from the STOXX Europe Large 200. All EURO STOXX size indices sum-up again to the parent index, the EURO STOXX.

Region	Index Name
Global	STOXX Global 3000 <Size>
Europe	STOXX Europe <Size> 200 STOXX Europe 400 (Large & Mid)
Eastern Europe	STOXX Eastern Europe <Size> 100
Eurozone	EURO STOXX <Size>
Europe ex UK	STOXX Europe ex UK <Size>
Europe ex Euro	STOXX Europe ex Eurozone <Size>

7. STOXX BENCHMARK INDICES (BMI)

Emerging Markets	STOXX Emerging Markets 500 <Size>
Nordic	STOXX Nordic <Size>
North America	STOXX North America <Size> 200
Asia/Pacific	STOXX Asia/Pacific <Size> 200
USA	STOXX USA <Size> 300
Japan	STOXX Japan <Size> 200

Effective up until September 2020 review:-

Ex-Sector Indices	Index
Ex- Financials (excluding ICB 8000)	STOXX Europe Large 200 ex- Financials
	EURO STOXX Large ex-Financials
Ex-Banks (excluding ICB 8300)	STOXX Europe Large 200 ex- Banks
	EURO STOXX Large ex-Banks

Effective with September 2020 review:-

Ex-Sector Indices	Index
Ex- Financials (excluding ICB 30)	STOXX Europe Large 200 ex- Financials
	EURO STOXX Large ex-Financials
Ex-Banks (excluding ICB 3010)	STOXX Europe Large 200 ex- Banks
	EURO STOXX Large ex-Banks

The ex-Banks and ex-Financial indices use cap factors of the parent indices.

7.3.3. ONGOING MAINTENANCE

Selection list: The selection list is updated on a monthly basis according to the review component selection process and Selection list definition in section 5.2 of STOXX Index methodology Guide.

Replacements: To maintain the number of components, a deleted stock is replaced with the highest-ranked non-component on the selection list. During the review implementation month the published review component list is used as selection list.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: All changes affecting the parent index also apply for the size indices.

7. STOXX BENCHMARK INDICES (BMI)

7.4. SECTOR INDICES BASED ON THE STOXX GLOBAL INDICES

7.4.1. OVERVIEW

The STOXX Global indices are divided into sector indices according to the ICB industry classification into Industry, Supersectors, Sectors and Subsectors and reflect the exposure to a certain sector in terms of free-float market capitalization. Regional sub-indices exist which then again are divided into sector indices according to the ICB industry classification and reflect the exposure to a certain sector in the specific region in terms of free-float market capitalization.

Universe: The following regional aggregates as defined in section 4.3 are calculated: Global (developed), America, Asia/Pacific, Europe, Eurozone, Eastern Europe and Nordic

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

Base value and date: 100 on December 31, 1991.

Index types and currencies: Price, net return and gross return in EUR and USD.

For a complete list please consult the data vendor code sheet on the website[10].

7.4.2. INDEX REVIEW

Component selection: The components of the STOXX <Region> Sector Index are derived from their respective STOXX <Region> Benchmark according to the ICB standard. E.g. the STOXX Global 1800 serves as basis for the STOXX Global 1800 Sector indices, the STOXX Europe 600 for the STOXX Europe 600 Sector indices and the EURO STOXX accordingly for the EURO STOXX Sector indices.

Please note for the STOXX Europe 600 and EURO STOXX the following set of Supersector index families exists.
The STOXX Europe 600 Supersectors and EURO STOXX 30-15 Supersectors (please refer to chapter 7.5) cap the weight of the largest and second largest company in each Supersector at 30% and 15%.

Review frequency: The indices are reviewed on a quarterly basis together with the STOXX Total Market indices.

Weighting cap factors: The components are not subject to component weight restrictions and capping.

Derived indices:

Region	Supersector Index
Global (developed)	STOXX Global 1800 <ICB Supersector>

[10] http://www.STOXX.com/download/indices/vendor_codes.xls

Europe	STOXX Europe 600 <ICB Supersector> STOXX Europe 400 <ICB Supersector>**
Eurozone	EURO STOXX <ICB Supersector>
Europe ex Euro	STOXX Europe ex Eurozone <ICB Supersector>
Americas	STOXX North America 600 <ICB Supersector>
Asia/Pacific	STOXX Asia/Pacific 600 <ICB Supersector>
Asia/Pacific ex Japan	STOXX Asia/Pacific 600 ex Japan <ICB Supersector>
Eastern Europe (parent index)	STOXX Eastern Europe Total Market <ICB Supersector>
Eastern Europe	STOXX Eastern Europe 300 <ICB Supersector>

Sector Indices	**Index**
STOXX <Region>	<Index> ‹ICB Industry›
STOXX <Region>	<Index> ‹ICB Supersector›
STOXX <Region>	<Index> ‹ICB Sector›*
STOXX <Region>	<Index> ‹ICB Subsector›*

* As some of these indices would not have enough components, not all indices are disseminated.

** For the indices tracking Oil & Gas, Food & Beverage, Personal & Household Goods the legacy logic is applied that pursues the exposure to the ICB Supersector definitions that were valid until September 2020 (see chapter 7.8).

7.4.3. ONGOING MAINTENANCE

Replacements: All changes affecting the STOXX regional Benchmark index also apply for the STOXX sector indices.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: All changes affecting the STOXX Benchmark index also apply for the STOXX sector indices.

7. STOXX BENCHMARK INDICES (BMI)

7.5. STOXX EUROPE 600 AND EURO STOXX SUPERSECTOR INDICES: 30% / 15% CAPS

7.5.1. OVERVIEW

Effective up until September 2020 review, the STOXX Europe 600 Index, covering the 600 largest companies in Europe, is divided into 19 Supersectors according to the ICB industry classification and reflects the exposure to a certain sector in terms of free-float market capitalization. Effective with September 2020 review, the STOXX Europe 600 Index, covering the 600 largest companies in Europe, is divided into 20 Supersectors according to the ICB industry classification and reflects the exposure to a certain sector in terms of free-float market capitalization. Due to narrow underlying universe per Supersector index, but also to reflect the market appropriately the indices are capped at 30% for largest and 15% for the second largest constituent.

Universe: The following regional aggregates as defined in section 4.3 are calculated: Europe, Eurozone

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base value and date: 100 on December 31, 1991.

Index types and currencies: Price, net return and gross return in EUR and USD.

7.5.2. INDEX REVIEW

Component selection: The STOXX Europe 600 Supersectors are derived from the STOXX Europe 600 Index and the EURO STOXX Supersectors 30-15 from the EURO STOXX according to the ICB classification.

Review frequency: The indices are reviewed on a quarterly basis together with the STOXX Total Market indices.

Weighting cap factors: All components of each supersector index are subject to a 30% capping for the largest company and a 15% capping for the second-largest company. The weighting cap factors are published on the second Friday of the quarter, one week prior to quarterly review implementation, and calculated using Thursday’s closing prices.
An intra-quarter capping will be triggered if the largest company exceeds 35% or the second-largest exceeds 20%. The process is as follows:

Date t: Weight exceeds 35% / 20% at the close of market
Date t+1: Announcement of the new weighting cap factors (30% / 15%) after close of market
Date t+3: Implementation of the new capping factors after close of market.
Date t+4: Effective date
Note: Violations of the 35 /20 threshold between dates t+1 and t+3 do not trigger another capping.

Please note for the STOXX Europe 600 and the EURO STOXX the following set of Supersector index families exists. In addition to the index family described in this chapter the EURO STOXX Supersectors (please refer to chapter 7.4) reflects the pure exposure of the Free-Float Market capitalization of each company in their Supersector without capping restrictions.

If there are fewer than 6 components the largest component's weight is capped at 30% and the remaining components' weights are equal-weighted. In case of 3 or fewer components the components are equal-weighted.

Derived indices: Not applicable. The indices are separate indices and not related to any other regional or sector indices due to their special capping procedure on the individual constituents.

7.5.3. ONGOING MAINTENANCE

Replacements: All changes affecting the STOXX Europe 600 and subindices also apply for the capped indices.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: All changes affecting the STOXX Europe 600 and subindices indices also apply for the capped indices.

7.6. STOXX REGIONAL REAL ESTATE INDICES: 20% CAPS

7.6.1. OVERVIEW

STOXX Global Benchmark Real Estate indices cover the real estate supersectors for Europe, Americas and Asia / Pacific in terms of free-float market capitalization. Compared to the normal supersector indices they have a cap of 20% imposed on a component level.

Universe:
Europe: STOXX 600 Europe companies with ICB supersector code 8600(Effective with September 2020 review, ICB supersector code 3510)
Americas: STOXX 600 Americas companies with ICB supersector code 8600(Effective with September 2020 review, ICB supersector code 3510)
Asia Pacific: STOXX 600 Asia Pacific companies with ICB supersector code 8600(Effective with September 2020 review, ICB supersector code 3510)
Weighting scheme: The indices are weighted according to free-float market capitalization.

Base value and dates: 100 on December 31, 1991.

Index types and currencies: Price, net return and gross return in EUR and USD.

7.6.2. INDEX REVIEW

Component selection: The Real Estate Capped indices are derived from the STOXX <Regional> 600 index according to the ICB standard.

Review frequency: The indices are reviewed on a quarterly basis together with the STOXX Total Market indices.

Weighting cap factors: A component capping of 20% is applied.

Derived indices: Not applicable.

7.6.3. ONGOING MAINTENANCE

Replacements: All changes affecting the STOXX Regional 600 Index apply for the Real Estate indices.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: All changes affecting the STOXX Regional 600 Index apply for the Real Estate indices.

7. STOXX BENCHMARK INDICES (BMI)

7.7. STOXX EMERGING MARKETS 800 LO

7.7.1. OVERVIEW

The STOXX Emerging Markets 800 LO (Liquidity Optimized) index is derived from the STOXX Emerging Markets 1500 index, covering the largest 800 companies in the emerging markets.

Universe: The universe is defined by the STOXX Emerging Markets 1500 index.

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base values and dates: 100 as of Dec. 21, 2012.

Index types and currencies: Price, net return, gross return in EUR and USD.

7.7.2. INDEX REVIEW

Selection list: On the quarterly review date the eligible stocks are ranked in terms of free-float market capitalization and companies with a three-month average daily traded value (ADTV) less than EUR 0.5m are excluded to produce the index selection list.

Composition list: A 10% buffer rule applies to select the constituents

Index Name	Components	Upper buffer	Lower buffer
STOXX Emerging Markets 800 LO	800	720	880

Review frequency: The index is reviewed on a quarterly basis together with the STOXX Emerging Markets 1500 index.

Weighting cap factors: The following capping procedure is applied:
1. If the weighting of a component is above the weighted average ADTV it is reduced to that value by introducing a liquidity scaling factor (see chapter 5.15.2 Liquidity Scaling Factors in for calculation).
2. A cap factor of 10% is applied.

Both factors are multiplied and applied as one cap factor.

7.7.3. ONGOING MAINTENANCE

Selection list: The selection list is updated on a monthly basis according to the review component selection process and Selection list definition in section 5.2 of STOXX Index methodology Guide.

Replacements: To maintain the number of components constant, a deleted stock is replaced by the highest ranked non-component on the selection list. During the review implementation month the published review component list is used as selection list.

Fast exit: Not applicable.

Fast entry: Not applicable.

7. STOXX BENCHMARK INDICES (BMI)

Spin-offs: Each spin-off stock qualifies for addition, if it lies within the upper buffer on the latest selection list for the specific index. The spin-off replaces the lowest ranked stock in that index, as determined by the selection list.
Qualifying spin-off stocks are added in sequence:
The largest qualifying spin-off stock replaces the original stock in the index.
The next qualifying spin-off stock replaces the lowest ranked stock in the index.
Likewise for the other qualifying spin-off stocks.

7.8. STOXX INDUSTRY AND SUPERSECTOR LEGACY INDICES

7.8.1. OVERVIEW

Effective with September 2020 review, ICB 2 will be replaced by ICB 5 consisting of 11 Industries, 20 Supersectors, 45 Sectors, 173 subsectors. Three Supersectors indices namely Food and Beverage, Personal and Household Goods and Oil and Gas for EURO STOXX and STOXX Europe 600 and STOXX Global 1800 Industry Consumer Goods would be maintained as legacy indices to continue to capture the economy reality of the indices. These indices would be maintained with the same name and identifiers.

Following table shows the legacy logics for the 3 Supersectors and one industry:-

Supersector/Industry Name	Legacy Logic
Food and Beverage	Legacy logic: 45101010+45101015+45101020+45102010+45102020+45102030+ 45102035-45103010
Personal and Household Goods	Legacy logic: 40204020+40204025+40204030+40204035+40203010+40203040+ 40203045+40203050+40203055+40203060+40202010+40202015+ 40202020+40202025+45103010+45201020+45201030+45201040+ 55101020+20103020
Oil and Gas	Legacy logic: 60101000+60101010+60101015+60101020+60101030+60101035+ 60102010+60102020-60101040
Consumer Goods	Legacy Logic: 20103020 + 40101015 + 40101020 + 40101025 + 40202010 + 40202015 + 40202020 + 40202025 + 40203010 + 40203040 + 40203045 + 40203050 + 40203055 + 40203060 + 40204020 + 40204025 + 40204030 + 40204035 + 45101010 + 45101015 + 45101020 + 45102010 + 45102020 + 45102030 + 45102035 + 45103010 + 45201020 + 45201030 + 45201040 + 55101020

Universe: The universe is defined by the STOXX Emerging Markets 1500 index.

Weighting scheme: The index is weighted together with the other STOXX Supersector/Industry Indices

Base values and dates: As per the other STOXX Supersector/Industry Indices

Index types and currencies: As per the other STOXX Supersector/Industry Indices

7.8.2. INDEX REVIEW

Selection list: As per the other STOXX Supersector/Industry Indices

Review frequency: The index is reviewed on a quarterly basis together with the other STOXX Supersector/Industry Indices

Weighting cap factors: As per the other STOXX Supersector/Industry Indices

7.8.3. ONGOING MAINTENANCE

Selection list: As per the other STOXX Supersector/Industry Indices

Replacements: As per the other STOXX Supersector/Industry Indices

Fast exit: As per the other STOXX Supersector/Industry Indices

Fast entry: As per the other STOXX Supersector/Industry Indices

Spin-offs: As per the other STOXX Supersector/Industry Indices

8. STOXX EQUAL WEIGHT INDICES

8.1. STOXX EQUAL WEIGHT INDICES

8.1.1. OVERVIEW

The STOXX Equal Weight indices consists of the same stocks as the standard free-float market capitalization weighted indices, but use a different weighting scheme. All stocks are equal-weighted at the periodic index review.

Universe: The index universe is defined by the parent index.

Weighting scheme: The index is price-weighted with a weighting factor to achieve an equal-weighting

Base value and date: For STOXX USA 900 Equal Weight and STOXX Japan 600 Equal Weight: 100 on March 18, 2002. For all others: defined by the parent index. Please consult the data vendor code sheet for further details.

Index types and currencies: For STOXX Japan 600 Equal Weight: price, net return and gross return in EUR and JPY. For all others: defined by the parent index. For a complete list please consult the data vendor code sheet on the website[11].

8.1.2. INDEX REVIEW

Component selection: Identical as the parent index.
The following indices are available as equal weight version:

» STOXX Europe 600 (please refer to chapter 7.2 for details)
» STOXX USA 900 (please refer to chapter 7.1 for details)
» STOXX Japan 600 (please refer to chapter 7.1 for details)
» EURO STOXX 50 (please refer to chapter 9.2 for details)
» STOXX China A 50 (please refer to chapter 9.1 for details)
» STOXX Strong Balance Sheet indices (please refer to chapter 12.4 for details)

Review frequency: The index is reviewed in line with the parent index.

Weighting cap factors: All components are equal-weighted on a quarterly basis. The weightings are published on the second Friday of each quarter, one week prior to quarterly review implementation using Thursday's closing prices.
Weighting cap factor = (100,000,000,000 / closing price of the stock in EUR) and rounded to integers.

Derived indices: Not applicable.

8.1.3. ONGOING MAINTENANCE

Replacements: All changes affecting the parent index, e.g. the STOXX Europe 600, also apply to the respective STOXX Equal Weight index. The newly added component has the same weight as the deleted one.

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[11] http://www.STOXX.com/download/indices/vendor_codes.xls

8. STOXX EQUAL WEIGHT INDICES

$$wf_{it} = \frac{wf_{jt} \times p_{jt}}{p_{it}}$$

wf_{it} = new weighting factor of replacement at time (t)
T = date of closing price for weighting factor calculation
wf_{jt} = weighting factor of index component (j) at time (t)
p_{jt} = price in EUR of index component (j) at time (t)
p_{it} = price in EUR of replacement company (i) at time (t)
Fast exit: Same as the parent index.
Fast entry: Same as the parent index

Spin-offs: Same as the parent index.

9. STOXX BLUE-CHIP INDICES

9.1. STOXX GLOBAL AND COUNTRY BLUE-CHIP INDICES

9.1.1. OVERVIEW

The STOXX Global and Country Blue-chip indices are fixed-number indices, whose components are the largest companies by free-float market capitalization of their geographic region defined by the respective benchmark indices.

Global / regional blue-chip indices are:

» STOXX Global 200
» STOXX Developed Markets 150
» STOXX Emerging Markets 50
» STOXX Americas 100
» STOXX Latin America 50
» STOXX Asia 100
» STOXX Greater China 80
» STOXX Hong Kong All Shares 50
» STOXX Pacific 50
» STOXX East Asia 80
» STOXX East Asia 80 ex Japan
» STOXX All Europe 100
» STOXX EU Enlarged 15
» STOXX Eastern Europe 50
» STOXX Sub Balkan 30

Country blue-chip indices are:

» STOXX Australia 50
» STOXX Canada 50
» STOXX China A 50
» STOXX France 50
» STOXX Hong Kong 50
» STOXX Italy 20
» STOXX Japan 50
» STOXX Singapore 20
» STOXX Spain 20
» STOXX UK 50
» STOXX USA 50

Note: the STOXX Global 200 is not an aggregate of the regional blue-chip indices Americas, All Europe, Asia and Pacific, all regions are reviewed independently.

Universe: The universe is defined by the Benchmark or Total Market indices of the specific region or country.

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

Base value and date: 1000 on January 31, 2011.

9. STOXX BLUE-CHIP INDICES

For a complete list please consult the data vendor code sheet on the website[12].

Index types and currencies: Price, net return and gross return in EUR, USD other versions. For a complete list please consult the data vendor code sheet on the website[13].

9.1.2. INDEX REVIEW

Component selection: There is a minimum liquidity requirement for components: to be eligible, the 3-month average daily trading volume has to be at least EUR 1 million. Components are selected based on the free-float market capitalization and a 10% buffer rule applies for the ranking. If the number of stocks selected is still below required component count after applying the buffer rules the largest remaining stocks are selected until there are enough stocks.

The particular blue-chips index components are selected as follows:

STOXX Global 200
20 largest components of the regions (North America, Latin America, Asia, Pacific and All Europe) in terms of free-float market capitalization
100 largest remaining components (taking into account a 10% buffer rule; current components are eligible if ranked within 110) of the corresponding benchmark Index.

STOXX Americas 100 (90 – 110 buffer rule)
20 largest components of North America (in terms of free-float market capitalization)
20 largest components of Latin America (in terms of free-float market capitalization)
60 largest remaining components (taking into account the 10% buffer rule) of the STOXX Americas benchmark Index (in terms of free-float market capitalization)

STOXX Eastern Europe 50 Index (40 – 60 buffer rule)
Target coverage: 50 Supersector leaders from the STOXX Eastern Europe 300 Index:

1. Effective up until September 2020 review, for each of the 19 STOXX Eastern Europe 300 Supersector indices, the stocks are ranked in terms of free-float market capitalization. Effective with 2020 review, for each of the 20 STOXX Eastern Europe 300 Supersector indices, the stocks are ranked in terms of free-float market capitalization. The largest stocks are added to the selection list until the coverage is close to, but still less than, 80% of the free-float market capitalization of the corresponding ICB Supersector in the STOXX Eastern Europe TMI Index. If the next highest-ranked stock brings the coverage closer to 80% in absolute terms, then it is also added to the selection list; all remaining STOXX Eastern Europe 50 stocks are then added to the selection list.
2. All the stocks on the selection list are then ranked in terms of free-float market capitalization and are screened for a minimum level of liquidity to produce the STOXX Eastern Europe 50 Index selection list, of which only the largest 15 stocks per country are selected.
3. The largest 40 stocks on the selection list are selected; the remaining 10 stocks are selected from the largest remaining current stocks ranked between 41 and 60; if the number of stocks selected is still below 50, then the largest remaining stocks are selected until there are 50 stocks.

[12] http://www.STOXX.com/download/indices/vendor_codes.xls
[13] http://www.STOXX.com/download/indices/vendor_codes.xls

4. The minimum liquidity criteria of the parent indices apply.

STOXX EU Enlarged 15 Index (10 – 20 buffer rule)
Target coverage: The largest stocks in the STOXX EU Enlarged TMI. Only the most liquid stock class for each company in the STOXX EU Enlarged TMI is included.

1. All of the stocks on the selection list are ranked separately in terms of free-float market capitalization, gross revenue, and net income. The final ranking is calculated by weighting the free-float market capitalization rank at 60%, the gross revenue rank at 20% and the net income rank at 20%. In case two companies have the same rank the company with larger free float market capitalization is preferred.
2. The top 10 ranked stocks are selected. The remaining five stocks are selected from the highest remaining current stocks ranked between 11 and 20. If the number of stocks selected is still below 15, then the highest remaining stocks are selected until there are 15 stocks.
3. The minimum liquidity criteria of the parent indices apply.

STOXX Sub Balkan 30 Index (20 – 40 buffer rule)
Target coverage: 30 Supersector leaders of the STOXX Eastern Europe TMI that belong to the Sub Balkan region. Only the most liquid stock class for each company is included.

1. Effective up until September 2020 review, for each of the 19 ICB Supersectors in the selection universe, the stocks are ranked in terms of free-float market capitalization. Effective with September 2020 review, for each of the 20 ICB Supersectors in the selection universe, the stocks are ranked in terms of free-float market capitalization. The largest stocks are added to the selection list until the coverage is close to, but still less than, 80% of the free-float market capitalization of the securities in the corresponding ICB Supersector of the selection universe. If the next ranked stock brings the coverage closer to 80% in absolute terms, then it is also added to the selection list; all remaining STOXX Sub Balkan 30 stocks are then added to the selection list.
2. All the stocks on the selection list are then ranked in terms of free-float market capitalization to produce the STOXX Sub Balkan 30 index selection list.
3. The largest 20 stocks on the selection list are selected, and the remaining 10 stocks are selected from the largest remaining current stocks ranked between 21 and 40. If the number of stocks selected is still below 30, the largest remaining stocks are selected until there are 30 stocks.
4. The minimum liquidity criteria of the parent indices apply.

STOXX East Asia 80 Index (72 – 88 buffer rule)
Target coverage: The largest stocks in STOXX East Asia 1800 Index. Secondary share lines, countries with a weighting of less than 2 percent in the STOXX East Asia 1800 Index, and countries with less than 2 securities in the STOXX East Asia 1800 index are excluded.

1. For each of the countries building up the East Asia region, the corresponding stocks of the STOXX East Asia 1800 Index are ranked in terms of free-float market capitalization. For each country, the largest stocks are added to the selection list until the coverage is close to, but still less than, 60% of the free-float market capitalization of the corresponding country within the STOXX East Asia 1800. If the next ranked stock brings the coverage closer to 60% in absolute terms, then it is also added to the selection list.
2. All the stocks on the selection list are then ranked in terms of free-float market capitalization to produce the STOXX East Asia 80 index selection list.

3. The largest 72 stocks on the selection list are selected, and the remaining 8 stocks are selected from the largest remaining current stocks ranked between 73 and 88. If the number of stocks selected is still below 80, the largest remaining stocks are selected until there are 80 stocks. In this step a maximum of 16 components per country can be selected. Once this number is reached stocks from that country are blocked from being selected.

STOXX East Asia 80 ex Japan Index
Variable number of components
All STOXX East Asia 80 components excluding stocks from Japan are selected.

For all other indices the following 10% buffer rules are applied:
E.g. for the STOXX All Europe 100 the largest 90 stocks (upper buffer) in terms of free-float market capitalization on the selection list qualify for selection. The remaining 10 stocks (components needed minus the upper buffer) are selected from the largest remaining current components ranked between 91 and 110 (lower buffer). If the number of stocks selected is still below 100, the largest remaining stocks are selected until there are enough stocks.

Index Name	Universe	Upper buffer	Lower buffer
STOXX Global 200	See above	n/a	n/a
STOXX Developed Markets 150	Developed Markets 2400	135	165
STOXX Emerging Markets 50	Emerging Markets 1500	45	55
STOXX Americas 100	See above	90	110
STOXX Latin America 50	Latin America 200	45	55
STOXX Asia 100	Asia 1200	90	110
STOXX Greater China 80	Greater China 480	72	88
STOXX Hong Kong All Shares 50	Hong Kong All Shares 180	45	55
STOXX Pacific 50	Pacific 100	45	55
STOXX East Asia 80	East Asia 1800	72	88
STOXX East Asia 80 ex Japan	East Asia 1800	n/a	n/a
STOXX All Europe 100	All Europe 800	90	110
STOXX EU Enlarged 15	EU Enlarged TMI	10	20
STOXX Eastern Europe 50	Eastern Europe 300	40	60
STOXX Sub Balkan 30	Eastern Europe TMI	20	40

Index Name	Universe	Upper buffer	Lower buffer
STOXX Australia 50	Australia TMI	45	55
STOXX Canada 50	Canada TMI	45	55
STOXX China A-50	China A TMI	45	55
STOXX France 50	France TMI	45	55
STOXX Hong Kong 50	Hong Kong TMI	45	55
STOXX Italy 20	Italy TMI	18	22

STOXX Japan 50	Japan TMI	45	55
STOXX Singapore 20	Singapore TMI	18	22
STOXX Spain 20	Spain TMI	18	22
STOXX UK 50	UK TMI	45	55
STOXX USA 50	USA TMI	45	55

Review frequency: The index is reviewed annually in September. The review cut-off date is the last trading day of August. The STOXX Eastern Europe 50 Index is reviewed semi-annually in March and September based on the last trading day of the previous month.

Weighting cap factors: Components are capped at a maximum weight of 10% quarterly. The weighting cap factors are published on Wednesday, two trading days prior to quarterly review implementation, using Tuesday's closing prices.
For the STOXX EU Enlarged 15 Index a cap factor of 15% is applied.
For the STOXX Eastern Europe 50 Index, the weight of each country is capped at 50% and if the weighting of a stock is greater than 10%, its weighting cap factor is adjusted to reduce the weighting to 10% and the weight is reallocated within the remaining stocks of that country.
For the STOXX East Asia 80 Index and the STOXX East Asia 80 ex Japan Index each country's weight is capped at 20% and if the weighting of a stock is greater than 10%, its weighting cap factor is adjusted to reduce the weighting to 10% and the weight is reallocated within the remaining stocks of that country.

Derived indices: not applicable

9.1.3. ONGOING MAINTENANCE

Selection list: The selection list is updated on a monthly basis according to the review component selection process and Selection list definition in section 5.2 of STOXX Index methodology Guide.

Replacements: A deleted stock is replaced immediately to maintain the fixed number of stocks. Usually, the replacement is based on the latest selection list that is updated monthly. During the review implementation month the published review component list is used as selection list. In case of merger and acquisition where a blue-chip stock is involved, the original stock is replaced by the new stock.
If a stock is deleted from the corresponding STOXX Regional Benchmark Index in between the regular review dates, but is still a component of the STOXX Regional TMI, this stock will remain in the STOXX Blue-Chip Index until the next regular review.
Fast exit: Not applicable.

Fast entry: An initial public offering (IPO) stock is reviewed for fast-track addition to the blue-chip indices at the next quarterly review.

The IPO stock is added if it:
Qualifies for the latest blue-chip selection list, i.e. the February, May, August or November blue-chip selection lists;
ranked within the lower buffer on this selection list, and
was the largest non-component on this selection list.

If added, the IPO stock replaces the smallest stock in the Blue-Chip Index.

Spin-offs
Each spin-off stock qualifies for addition, if it lies within the upper buffer on the latest selection list for the specific index. The spin-off replaces the lowest ranked stock in that index, as determined by the selection list.
Qualifying spin-off stocks are added in sequence:
The largest qualifying spin-off stock replaces the original stock in the index.
The next qualifying spin-off stock replaces the lowest ranked stock in the index.
Likewise for the other qualifying spin-off stocks.

9.2. EURO STOXX 50

9.2.1. OVERVIEW

The EURO STOXX 50 is derived from the EURO STOXX index and represents the largest Supersector leaders in the Eurozone in terms of free-float market capitalization.

Universe: The index universe are stocks in the Eurozone region defined by the EURO STOXX index.

Weighting scheme: The index is weighted according to free-float market capitalization.
Base value and dates: 1000 on December 31, 1991.
Index types and currencies: Price, gross return and net return in EUR, USD, CAD, GBP and JPY.
For a complete list please consult the data vendor code sheet on the website[14].

9.2.2. INDEX REVIEW

Component selection

EURO STOXX 50 index (40 – 60 buffer rule)
Target coverage: 50 Supersector leaders from the EURO STOXX index:

1. Effective up until September 2020 review, for each of the 19 EURO STOXX Supersector indices, the stocks are ranked in terms of free-float market capitalization.Effective with September 2020 review, for each of the 20 EURO STOXX Supersector indices, the stocks are ranked in terms of free-float market capitalization. The largest stocks are added to the selection list until the coverage is close to, but still less than, 60% of the free-float market capitalization of the corresponding EURO STOXX TMI Supersector Index. If the next highest-ranked stock brings the coverage closer to 60% in absolute terms, then it is also added to the selection list. All current EURO STOXX 50 Index stocks are added to the selection list.
2. All the stocks on the selection list are then ranked in terms of free-float market capitalization to produce the final index selection list.
3. The largest 40 stocks on the selection list are selected; the remaining 10 stocks are selected from the largest remaining current stocks ranked between 41 and 60; if the number of stocks selected is still below 50, then the largest remaining stocks are selected until there are 50 stocks.

The minimum liquidity criteria of the parent index, EURO STOXX index applies.

Review frequency: The index is reviewed annually in September. The review cut-off date is the last trading day of August.

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[14] http://www.STOXX.com/download/indices/vendor_codes.xls

Weighting cap factors: Components are capped at a maximum weight of 10% quarterly. The weighting cap factors are published on Wednesday two trading days prior to quarterly review implementation using Tuesday's closing prices.

Derived indices:

Effective up until September 2020 review,

Category	Index
Ex- Financials (excluding ICB 8000)	EURO STOXX 50 ex- Financials
Ex-Banks (excluding ICB 8300)	EURO STOXX 50 ex- Banks
Country sub-indices	EURO STOXX 50 France, Spain, Germany and Netherlands
Ex-Country indices	EURO STOXX 50 ex Country (e.g. France, Italy, Germany, Spain…)

Effective with September 2020 review,

Category	Index
Ex- Financials (excluding ICB 30)	EURO STOXX 50 ex- Financials
Ex-Banks (excluding ICB 3010)	EURO STOXX 50 ex- Banks
Country sub-indices	EURO STOXX 50 France, Spain, Germany and Netherlands
Ex-Country indices	EURO STOXX 50 ex Country (e.g. France, Italy, Germany, Spain…)

The ex-Banks and ex-Financial indices use cap factors of the parent index.

9.2.3. ONGOING MAINTENANCE

Replacements: A deleted stock is replaced immediately to maintain the fixed number of stocks., The replacement is based on the latest selection list that is updated monthly. In case of merger and acquisition where a blue-chip stock is involved, the original stock is replaced by the new stock. If a stock is deleted from the EURO STOXX in between the regular review dates but is still a component of the STOXX Regional TMI, then this stock will remain in the EURO STOXX 50 Index until the next regular review.

Fast exit: The components are monitored for any changes based on the monthly selection list ranking, i.e. on an ongoing monthly basis.
A component is deleted if:

- » it ranks 75 or below on the monthly selection list; and
- » it ranked 75 or below or below on the selection list of the previous month

The announcement will be on the first trading day of the month after close of markets.
The addition will be announced based on the monthly selection list, i.e. the highest-ranked non-component will be selected. Changes will be implemented on the close of the fifth trading day and are effective the next trading day.

Fast entry: All stocks on the latest selection lists and initial public offering (IPO) stocks are reviewed for a fast-track addition on a quarterly basis. A stock is added, if

» it qualifies for the latest blue-chip selection list generated end of February, May, August or November; and
» it ranks within the lower buffer (ranks 1 - 25) on this selection list

If it is added, the stock replaces the smallest stock in the Blue-Chip Index. The announcement will be on the first trading day of the month after close of markets. The implementation is together with the STOXX Total Market indices.

Spin-offs: Each spin-off stock qualifies for addition if it lies within the upper buffer (ranks 1 – 40) on the latest selection list for the index. The spin-off replaces the lowest ranked stock in that index as determined by the selection list.

Qualifying spin-off stocks are added in sequence:
The largest qualifying spin-off stock replaces the original stock in the index.
The next qualifying spin-off stock replaces the lowest ranked stock in the index.
Likewise for the other qualifying spin-off stocks.

9.3. STOXX REGIONAL BLUE-CHIP INDICES

9.3.1. OVERVIEW

The Blue-chip indices are derived from regional subsets of the STOXX Global 1800. The indices cover the largest Supersector leaders of their region in terms of free-float market capitalization.

STOXX Europe 50, selected from the STOXX Europe 600 Index
STOXX Nordic 30, selected from STOXX Nordic Total Market Index
STOXX Asia/Pacific 50, selected from the STOXX Asia/Pacific 600 Index
STOXX North America 50, selected from the STOXX North America 600 Index

For the EURO STOXX 50 please refer to chapter 9.2.

Universe: The index universe is defined as all stocks from regional aggregates as defined in section 4.3: Europe, Nordic, North America and Asia/Pacific.

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base value and dates: 1000 on December 31, 1991.

Index types and currencies: Price, gross return and net return in EUR, USD and other versions. For a complete list please consult the data vendor code sheet on the website[15].

9.3.2. INDEX REVIEW

Component selection

For all indices the minimum liquidity criteria of the parent indices apply.

STOXX Europe 50 index (40 – 60 buffer rule)
Target coverage: 50 Supersector leaders from the STOXX Europe 600 index:

1. Effective up until September 2020 review, for each of the 19 STOXX regional 600 Supersector indices, the stocks are ranked in terms of free-float market capitalization.Effective with September 2020 review, for each of the 20 STOXX regional 600 Supersector indices, the stocks are ranked in terms of free-float market capitalization. The largest stocks are added to the selection list until the coverage is close to, but still less than, 60% of the free-float market capitalization of the corresponding STOXX Regional TMI Supersector Index. If the next highest-ranked stock brings the coverage closer to 60% in absolute terms, then it is also added to the selection list. All current STOXX Europe 50 Index stocks are then added to the selection list.
2. All the stocks on the selection list are then ranked in terms of free-float market capitalization to produce the final index selection list.
3. The largest 40 stocks on the selection list are selected; the remaining 10 stocks are selected from the largest remaining current stocks ranked between 41 and 60; if the number of stocks selected is still below 50, then the largest remaining stocks are selected until there are 50 stocks.

[15] http://www.STOXX.com/download/indices/vendor_codes.xls

STOXX Nordic 30 Index (20 – 40 buffer rule)
Similarly, target coverage of 30 Supersector leaders from the STOXX Nordic Total Market Index (excluding secondary share lines) and a 80% Supersector coverage.

STOXX Asia/Pacific 50 Index (40 – 60 buffer rule)
Similarly, target coverage of 50 Supersector leaders from the STOXX Asia/Pacific 600 index.

STOXX North America 50 Index (40 – 60 buffer rule)
Similarly, target coverage of 50 Supersector leaders from the STOXX North America 600 index.

Review frequency: The indices are reviewed annually in September. The review cut-off date is the last trading day of August.

Weighting cap factors: Components are capped at a maximum weight of 10% quarterly. The weighting cap factors are published on Wednesday two trading days prior to quarterly review implementation using Tuesday's closing prices.

9.3.3. ONGOING MAINTENANCE

Replacements: A deleted stock is replaced immediately to maintain the fixed number of stocks. Usually, the replacement is based on the latest selection list that is updated monthly. In case of merger and acquisition where a blue-chip stock is involved, the original stock is replaced by the new stock. If a stock is deleted from the STOXX Regional Benchmark Indices (e.g. STOXX Europe 600) in between the regular review dates but is still a component of the STOXX Regional TMI, then this stock will remain in the STOXX Blue-Chip Index until the next regular review.

Fast exit: The components of the STOXX Europe 50, STOXX Nordic 30, STOXX Asia/Pacific 50 and STOXX North America 50 are monitored for any changes based on the monthly selection list ranking, i.e. on an ongoing monthly basis.
A component is deleted if:

» it ranks 75 (50 for STOXX Nordic 30) or below on the monthly selection list; and
» it ranked 75 (50 for STOXX Nordic 30) or below on the selection list of the previous month.

The announcement will be on the first trading day after close of markets.
The addition will be announced based on the monthly selection list, i.e. the highest-ranked non-component will be selected.
Changes will be implemented on the close of the fifth trading day and are effective the next trading day.

Fast entry: All stocks on the latest selection lists of the STOXX Europe 50, STOXX Nordic 30, STOXX Asia/Pacific 50 and STOXX North America 50 and initial public offering (IPO) stocks are reviewed for a fast-track addition on a quarterly basis. A stock is added, if

» it qualifies for the latest blue-chip selection list generated end of February, May, August or November; and
» it ranks within the lower buffer (ranks 1 – 25; for STOXX Nordic 30: ranks 1-15) on this selection list

If it is added, the stock replaces the smallest stock in the Blue-Chip Index. The announcement will be on the first trading day of the month after close of markets. The implementation is together with the STOXX Total Market indices.

Spin-offs: Each spin-off stock qualifies for addition, if it lies within the upper buffer on the latest selection list for the specific index. The spin-off replaces the lowest ranked stock in that index, as determined by the selection list.
Qualifying spin-off stocks are added in sequence:
The largest qualifying spin-off stock replaces the original stock in the index.
The next qualifying spin-off stock replaces the lowest ranked stock in the index.
Likewise for the other qualifying spin-off stocks.

9. STOXX BLUE-CHIP INDICES

9.4. STOXX GLOBAL 150

9.4.1. OVERVIEW

The STOXX Global 150 Blue-Chip Index is a combination of the regional STOXX Blue-Chip indices for North America, Asia Pacific and Europe which cover the supersector leaders of the respective region in terms of free-float market capitalization.

Universe: The index universe is defined as all stocks of the developed markets in Europe, North America and the Asia/Pacific region as defined in section 4.3.

Weighting scheme: The index is weighted according to free-float market capitalization.

Base value and date: 1,000 on December 31, 1991.

Index types and currencies: Price, net return in EUR and USD.

9.4.2. INDEX REVIEW

Component selection: The indices consist of the components of the STOXX Europe 50, STOXX Asia/Pacific 50 and STOXX North America 50. Each regional blue-chip consists of 50 stocks covering the largest Supersector leaders in the STOXX Asia/Pacific 600, STOXX North America 600 and STOXX Europe 600 indices.

Review frequency: The index is reviewed annually in September based on the closing prices of the last trading day in August.

Weighting cap factors: Components are capped at a maximum weight of 10% quarterly. The weighting cap factors are published on Wednesday two trading days prior to quarterly review implementation date, using Tuesday’s closing prices.

Derived indices: Not applicable.

9.4.3. ONGOING MAINTENANCE

Replacements: All changes affecting the STOXX Europe 50, STOXX Asia/Pacific 50 and STOXX North America 50 apply for the STOXX Global 150 Index.

Fast exit: The rules of the STOXX Europe 50, STOXX Asia/Pacific 50 and STOXX North America s 50 apply.

Fast entry: The rules of the STOXX Europe 50, STOXX Asia/Pacific 50 and STOXX North America 50 apply.

Spin-offs: The rules of the STOXX Europe 50, STOXX Asia/Pacific 50 and STOXX North America 50 apply.

9.5. STOXX BALKAN 50 EQUAL WEIGHT

9.5.1. OVERVIEW

The STOXX Balkan 50 Equal Weight index represents blue-chip stocks from eight Balkan countries in terms of free-float market capitalization.

Universe: The index universe is defined as the following eight Balkan countries: Bulgaria, Croatia, Macedonia, Romania, Serbia, Slovenia Greece and Turkey.

Weighting scheme: The index is price-weighted with a weighting factor to achieve an equal-weighting

Base value and date: 1,000 as of December 31, 2006.

Index types and currencies: Price, net return in EUR and USD.

9.5.2. INDEX REVIEW

Component selection

STOXX Balkan 50 Equal Weight Index (5/3 - 15/7 buffer rule)
Target coverage: highest-ranked components in the STOXX Balkan Total Market Index by free-float market capitalization; only the most liquid stock class for each company in the STOXX Balkan TMI is included.

1. Selection process: For each country, companies are ranked by free-float market capitalization. The highest-ranked components (20 companies from Greece and Turkey, 10 companies from Bulgaria, Croatia, Macedonia, Romania, Serbia and Slovenia) are chosen for the selection list. The selection list of each country is ranked first by free-float market capitalization and second by liquidity (average daily traded value for the past three months). The final rank is calculated from the average of the two ranks. If two or more companies have the same final ranking, then their free-float market capitalization is used as a tie-breaker.
2. Selection list: The top five ranked stocks are selected for Greece and Turkey. The top three ranked stocks are selected for all other countries. The remaining five stocks for Greece and Turkey are selected from the highest remaining current stocks ranked between six and fifteen. The remaining two stocks for all other countries are selected from the highest remaining current stocks ranked between four and seven. If the number of stocks selected is still below ten for Greece and Turkey, and five for the other countries, then the highest remaining stocks are selected until there are enough stocks.

Review frequency: The index is reviewed annually in September based on the closing prices of the last trading day of the previous month.

Weighting cap factors: All components are equal-weighted. The weighting cap factors are published on the second Friday of the quarter, one week prior to quarterly review implementation using Thursdays’ closing prices.
Weighting cap factor = (100,000,000,000 / closing price of the stock in EUR), rounded to integers.

Derived indices: Not applicable.

9.5.3. ONGOING MAINTENANCE

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

Replacements: In case of merger and acquisition, the original stock is replaced by the surviving stock, if it was a component of the same country. Otherwise the highest-ranked non-component on the relevant country selection list qualifies. The selection list is updated on a quarterly basis according to the review component selection procedure. An addition is added at the same weight as the removed company .

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Each spin-off stock qualifies for addition, if it lies within the upper buffer on the latest selection list for the specific index. The spin-off replaces the lowest ranked stock in that index, as determined by the selection list.
Qualifying spin-off stocks are added in sequence:
The largest qualifying spin-off stock replaces the original stock in the index.
The next qualifying spin-off stock replaces the lowest ranked stock in the index.
Likewise for the other qualifying spin-off stocks.

9. STOXX BLUE-CHIP INDICES

9.6. STOXX CANADA 60

9.6.1. OVERVIEW

Effective up until September 2020 review, the STOXX Canada 60 Index represents the performance of the 60 largest Canadian companies by free-float market capitalization from among the 10 ICB Industries. Effective with September 2020 review, the STOXX Canada 60 Index represents the performance of the 60 largest Canadian companies by free-float market capitalization from among the 11 ICB Industries. It is an industry neutral index and is derived from the STOXX Canada 240 index.

Universe: The index universe is defined as the new composition of the STOXX Canada 240 index which becomes effective on the review date, on the Monday following the 3rd Friday of March, June, September and December.

Weighting scheme: The index is free float market cap weighted with a cap factor in order to maintain industry neutrality with respect to the STOXX Canada 240 index.

Base values and dates: 100 on March 19, 2007

For a complete list please consult the data vendor code sheet on the website[16]. Customized solutions can be provided upon request.

Index types and currencies: Price, net return and gross return in CAD, USD and EUR.
For a complete list please consult the data vendor code sheet on the website

9.6.2. INDEX REVIEW

Selection list: The Selection list is obtained by selecting from the universe (defined above) all the stocks which fulfil the following criteria based on data as of last trading day of the month prior to the respective review month.

13. Liquidity: The 3-month average daily trading volume has to be at least EUR 1 million.
14. Effective up until September 2020 review, for each of the 10 ICB industries in the STOXX Canada 240 index, the stocks are ranked in terms of free float market capitalization. Effective with September 2020 review, for each of the 11 ICB industries in the STOXX Canada 240 index, the stocks are ranked in terms of free float market capitalization. The largest stocks are added to the selection list until the coverage is close to 90% of the free-float market capitalization of the corresponding ICB industry in the STOXX Canada 240 index. If the next highest-ranked stock brings the coverage closer to 90% in absolute terms, then it is also added to the selection list.
15. All current STOXX Canada 60 Index stocks are added to the selection list.

All the stocks in the selection list are then ranked in terms of free-float market capitalization.

Composition list: Target Coverage: The largest 60 companies from the Selection list based on their free-float market capitalization; a 20% buffer rule applies for the ranking.

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[16] http://www.STOXX.com/download/indices/vendor_codes.xls

9. STOXX BLUE-CHIP INDICES

The upper buffer is 48 and the lower buffer is 72. This means, the largest 48 stocks by free-float market capitalization on the selection list qualify for selection.
The remaining 12 stocks are selected from the largest current components ranked between 48 and 72.

If the number of stocks selected is still below 60 after applying the buffer rules, the largest remaining stocks from the Selection list are selected until there are enough stocks.

Review frequency: The index is reviewed on a quarterly basis in line with the STOXX Canada 240 index.

Weighting and capping factors: The index follows a sector neutral approach with respect to the Canada 240 Index. The sector neutrality is enforced by equating the ICB Industry weights of the STOXX Canada 60 Index with that of the Canada 240 Index. For the capping procedure, the new components of Canada 240 that become effective on the review date (Monday following the 3rd Friday of March, June, September, December) are used. The industry weights of the Canada 240 as well as the STOXX Canada 60 Index are calculated on the Wednesday before the third Friday of the review month using Tuesday's close prices.

- Within each industry of the STOXX Canada 60 Index, all components are weighted based on their free float market capitalization.
- In case there is no representation of a particular industry in the STOXX Canada 60 Index, but this industry is represented in the Canada 240 Index, the weight of the corresponding industry in the Canada 240 Index is distributed among the other industry in the STOXX Canada 60 index in the proportion of their existing industry weights.
- The weighting cap factors are published on Wednesday, two trading days prior to quarterly review implementation, using the previous day's closing prices.

9.6.3. ONGOING MAINTENANCE

Replacements: To maintain the number of components constant, a deleted stock is immediately replaced with the highest-ranked non-component from the Selection List, belonging to the same ICB industry as the deleted stock. The Selection List is updated on a quarterly basis as part of the review component selection process. The newly added component enters with the same weight as that of the deleted one.

In case there is no company available in the Selection List that belongs to the same ICB industry as the deleted component, the highest-ranked non-component from the Selection List is chosen, independently of its industry.

Fast entry: Not Applicable.

Fast exit: Not Applicable.

Spin-offs: Spin-off companies are not permanently added to the index.

Corporate actions: All component are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

10. STOXX DIVIDEND INDICES

10.1. STOXX SELECT DIVIDEND INDICES

10.1.1. OVERVIEW

Similar to the Blue-Chip indices, the STOXX Select Dividend indices are derived from their benchmark indices or their regional subsets. They cover a fixed number of stocks which represent the highest-yielding stocks relative to their home markets in the respective benchmark index.

Universe:
STOXX Europe Select Dividend 30, selected from STOXX Europe 600
EURO STOXX Select Dividend 30, selected from EURO STOXX
STOXX Nordic Select Dividend 20, selected from STOXX Nordic TMI
STOXX EU Enlarged Select Dividend 15, selected from STOXX EU Enlarged TMI
STOXX North America Select Dividend 40, selected from STOXX North America 600 Index
STOXX Asia/Pacific Select Dividend 30, selected from STOXX Asia/Pacific 600 Index
STOXX Global Select Dividend 100, combines the STOXX Select Dividend 30, STOXX North America Select Dividend 40 and STOXX Asia/Pacific Select Dividend 30 indices
STOXX USA Select Dividend 30, selected from STOXX USA 900

Weighting scheme: The indices are price-weighted with a weighting factor based on the dividend yield.

Base values and dates:
STOXX Europe Select Dividend 30 Index: 1000 on December 30, 1998
EURO STOXX Select Dividend 30 Index: 1000 on December 30, 1998
STOXX Nordic Select Dividend 20 Index: 1000 on December 30, 1998
STOXX EU Enlarged Select Dividend 15 Index: 1000 on December 30, 1998
STOXX North America Select Dividend 40 Index: 1000 on December 31, 1998
STOXX Asia/Pacific Select Dividend 30 Index: 1000 on December 31, 1998
STOXX Global Select Dividend 100 Index: 1000 on December 31, 1998
STOXX USA Select Dividend 30 Index: 100 on March 22, 2004

Index types and currencies: For EURO STOXX Select Dividend 30, STOXX Global Select Dividend 100 and STOXX USA Select Dividend 30: price, net return and gross return in EUR and USD. For all others: price and net return in EUR and USD.

10.1.2. INDEX REVIEW

Component selection

1. For each regional Select Dividend index the components of the corresponding STOXX Regional Benchmark indices (or fix component benchmarks) and their secondary share lines are eligible.
2. Companies are screened for the following criteria:
   » Indicated annualized dividend (applies for components and non-components)
   » Non-negative dividend growth rate over the past five years (applies for non-components only)
   » Dividend payments in four out of five calendar years (applies for non-components only)
   » Non-negative payout ratio (applies for components and non-components)
   » Payout ratio of less than or equal to 60% (applies for non-components only)

- A minimum level of liquidity, as described in the following section (applies for non-components only)
- For companies that have more than one share line, the line with the higher dividend yield is chosen.

3. To obtain the selection list all companies are ranked according to an outperformance factor that is calculated as follows:

Net dividend yield of the company versus the net dividend yield of the corresponding home market defined on an index basis.

Liquidity screening for non-components
Depending on the belonging region of the index, the following parameters are considered:

Region	Threshold (EUR)	ADTV days
Asia / Pacific	300,000,000	3
EU Enlarged	2,000,000	10
Eurozone	1,000,000,000	3
Europe	300,000,000	3
Nordic	100,000,000	3
America (developed)	300,000,000	3
USA	300,000,000	3

After defining N as the fixed number of components in the index, each i^{th} non-component stock is considered eligible - in terms of liquidity - if the following inequality holds:

$$ADTV_i > \frac{\text{Threshold}}{N} \cdot \frac{1}{\text{ADTV days}}$$

where $ADTV_i$ represents the Average Daily Traded Value of the i^{th} non-component stock over the 3-month period ending on the month prior to the review month.

STOXX Europe Select Dividend 30
Coverage: the 30 highest-yielding companies relative to their home market (STOXX Regional/Country TMI) are selected from the STOXX Europe 600 Index (plus secondary lines).

- Outperformance factor calculation: Net dividend yield of the company divided by the maximum of (STOXX Country TMI net dividend yield; STOXX Europe TMI net dividend yield) -1
- Component selection: All current components ranked from 1 to 60 in the selection list will remain in the index. If the number of stocks is below 30, the highest ranked non-components are added until there are enough stocks.

EURO STOXX Select Dividend 30
Coverage: the 30 highest-yielding companies relative to their home market (STOXX Regional/Country TMI) are selected from EURO STOXX (plus secondary lines).
» Outperformance factor calculation: Net dividend yield of the company divided by the maximum of (STOXX Country TMI net dividend yield; EURO STOXX TMI net dividend yield) -1
» Component selection: All current components ranked from 1 to 60 in the selection list will remain in the index. If the number of stocks is below 30, the highest ranked non-components are added until there are enough stocks.

STOXX Nordic Select Dividend 20
Coverage: the 20 highest-yielding companies relative to their home market (STOXX Regional/Country TMI) are selected from the STOXX Nordic TMI (plus secondary lines).
» A payout ratio of less than or equal to 80% applies for non-components.
» Outperformance factor calculation: Net dividend yield of the company divided by the maximum of (STOXX Country TMI net dividend yield; STOXX Nordic TMI net dividend yield) -1
» Component selection: the stocks ranked between 1 and 10 are included in the index. Current components ranked between 11 and 30 are added to the index according to their rank. If the number of stocks is still below 20, the highest ranked non-components are added until there are enough stocks.

STOXX EU Enlarged Select Dividend 15
Coverage: the 15 highest-yielding companies relative to their home market (STOXX Regional/Country TMI) are selected from the STOXX EU Enlarged TMI (plus secondary lines).
» The payout ratio has to be less than or equal to 100 percent
» The dividend growth rate is based on the past three years.
» Dividend payments in three out of three calendar years
» Outperformance factor calculation: Net dividend yield of the company divided by the maximum of the (STOXX Country TMI net dividend yield; STOXX EU Enlarged TMI net dividend yield) - 1.
» If a home market (STOXX Country TMI) is represented by only five or fewer stocks the outperformance factor is calculated based on the net dividend yield of the STOXX EU Enlarged TMI.
» Component selection: All stocks ranked between 1 and 10 are included in the index. Current components ranked between 11 and 20 are added to the index according to their rank. If the number of stocks is still below 15, the highest ranked non-components are added until there are enough stocks.

STOXX North America Select Dividend 40
Coverage: the 40 highest-yielding companies relative to their home market (STOXX Country TMI) are selected from the STOXX North America 600 index (plus secondary lines).
» Outperformance factor calculation: Net dividend yield of the company divided by the STOXX Country TMI net dividend yield -1.
» Component selection: The companies are ranked by the outperformance factor for each country and the region as a whole. All current components ranked 60 or above in each country ranking will remain in the index. If the number of stocks is still below 40, the highest

ranked non-components from the regional ranking are added until there are enough stocks. A maximum of 30 stocks per country can be included in the index.

STOXX Asia/Pacific Select Dividend 30
Coverage: the 30 highest-yielding companies relative to their home market (STOXX Regional/Country TMI) are selected from the STOXX Asia/Pacific 600 index (plus secondary lines).

» A payout ratio of less than or equal to 80% applies for non-components.
» Outperformance factor calculation: Net dividend yield of the company divided by the maximum of (STOXX Country TMI net dividend yield; STOXX Asia/Pacific TMI net dividend yield) -1
» Component selection: The companies are ranked by the outperformance factor for each country and the region as a whole. All current components ranked 20 or above in each country ranking will remain in the index. If the number of stocks is still below 30, the highest ranked non-components from the regional ranking are added until there are enough stocks. A maximum of 10 stocks per country can be included in the index.

STOXX Global Select Dividend 100
The index is a combination of the STOXX Europe Select Dividend 30 Index, the STOXX North America Select Dividend 40 Index and the STOXX Asia/Pacific Select Dividend 30 Index.

STOXX USA Select Dividend 30
Coverage: the 30 highest-yielding companies in the USA are selected from the STOXX USA 900 Index (plus secondary lines).

» Component selection: All current components ranked from 1 to 60 in the selection list will remain in the index. If the number of stocks is below 30, the highest ranked non-components are added until there are enough stocks.

Review frequency: The STOXX Select Dividend indices are reviewed on an annual basis in March.

Weighting cap factors: The factors are calculated based on net-dividend yields.

Weight determination:

$$w_i = \frac{\frac{D_i}{p_i}}{\sum_{j=1}^{N} \frac{D_j}{p_j}}$$

w_i = weight
D_i = net dividend of company i
p_i = closing price of company i
D_j = net dividend of company j
p_j = closing price of company j
N = number of index components

Weighting cap factor = (1,000,000,000 x initial weight / closing price of the stock in EUR), rounded to integers.
The weighting factors are published on the second Friday in March, one week prior to quarterly review implementation using Thursday's closing prices.

For all Select Dividend indices, except for the STOXX Global Select Dividend, an additional cap factor of 15% applies. The STOXX Select Dividend Global Index has a cap factor of 10%. All weighting cap factors are reviewed quarterly.

10.1.3. ONGOING MAINTENANCE

Replacements: To maintain the number of components constant, a deleted stock is replaced with the highest-ranked non-component on the selection list. The selection list is updated on a quarterly basis according to the review component selection process. The restrictions on the maximum count per country are applied.

If a company is deleted from the STOXX Regional Benchmark indices (or fix component benchmarks) between the STOXX Select Dividend annual review dates, but is still a component of the STOXX Global TMI, the stock will remain in the STOXX Select Dividend indices until the next annual review, provided that it still meets the requirements for the STOXX Select Dividend Index.

Fast exit
If STOXX becomes aware of dividend data changes for the components of the STOXX Select Dividend indices the following index adjustments may occur. The timing of the index adjustment depends on the changes in the dividend data:

» If the company cancels one of its dividends: the company will be deleted from the index, the replacement announced immediately, implemented two trading days later and become effective the next trading day. The case of dividend cancellation does not apply to dividends whose payment is postponed within the same fiscal year. Dividends whose payment is postponed indefinitely or to a subsequent fiscal year are considered cancelled. In case a company pays its dividends for a fiscal year in tranches, after the first tranche has been paid, the cancellation of one or more remaining tranches or the postponement of their payment to a subsequent fiscal year is treated as a lowering of dividend.

» If the company lowers its dividend: the company will remain in the index until the next selection list is available. If the company is ranked above the lower buffer on this selection list (e.g. ranked 60 or above for the STOXX Europe Select Dividend 30 Index), it is retained. If it falls below the lower buffer (e.g. ranked 61 or below for the STOXX Europe Select Dividend 30 Index), it is removed and replaced by the highest-ranked non-component on that selection list. The changes will be announced on the 5th trading day of the month together with the selection list and become effective on the first trading day after the third Friday of the month. The weightfactors for the new components will be published on the quarterly underlying data announcement based on previous day closing prices.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not considered for immediate addition in the STOXX Select Dividend indices. If the original company has a significantly lower dividend after the spin-off, then its status will be reviewed for fast exit.

Mergers and takeovers: The original stock is replaced by the surviving stock, if it is ranked at or above the lower buffer limit of the current Select Dividend selection list. If the stocks of the surviving company fall below the lower buffer limit, the original stocks are replaced with the highest-ranked non-component on the selection list.

Weighting factor calculation: Replacements are added with a weight corresponding to their dividend yield on the current selection list. The new component's dividend yield is weighted against the dividend yields of all companies of the new index composition:

$$w_i = \frac{\frac{D_i}{p_i}}{\sum_{j=1}^{N} \frac{D_j}{p_j}}$$

w_i = weight of replacement company (i)
D_i = net dividend of replacement company (i) on cut-off date of current selection list
p_i = closing price of replacement company (i) on cut-off date of current selection list
D_j = net dividend of replacement company (j) on cut-off date on current selection list of company j in new index composition
p_j = closing price on cut-off date of current selection list of company (j) in new index composition
N = number of index components

$$wf_{it} = \frac{\dfrac{\sum_{j=1}^{N-k} wf_{jt} \times p_{jt} \times cf_{jt}}{\left(1 - \sum_{h=1}^{k} w_h\right)} \times w_i}{p_{it}}$$

wf_{it} = new weighting factor of replacement (i) at time (t)
k = number of replacements
T = date of closing price for weighting factor calculation
N-1 = remaining index components (previous index composition minus the deleted company)
wf_{jt} = weighting factor of index component (j) at time (t)
$p_{j,t}$ = price of index component (j) at time (t)
cf_{jt} = weighting cap factor of index component (j) at time (t)
w_i = weight of replacement company (i)
p_{it} = price of replacement company (i) at time (t)

The remaining current components stay in the index with unchanged weighting factors.

10. STOXX DIVIDEND INDICES

10.2. STOXX ASEAN-FIVE SELECT DIVIDEND 50

10.2.1. OVERVIEW

The STOXX ASEAN-Five Select Dividend 50 Index aims to select from the ASEAN universe the 50 highest dividend paying companies. Countries that are considered are the Philippines, Malaysia, Thailand, Singapore and Indonesia. Vietnam is not part of the universe for this index.

Universe: All stocks in the investable universe (Philippines, Malaysia, Thailand, Singapore and Indonesia)

Weighting scheme: The indices are weighted according to the Free Float Market Capitalization

Base values and dates: 1000 as of March 31, 2004

Index types and currencies: Price, net and gross return in EUR, JPY and USD

10.2.2. INDEX REVIEW

Component selection and 35 – 70 buffer rule:
The universe is defined as all stocks in the STOXX Asia Total Market index belonging to the Philippines, Malaysia, Thailand, Singapore and Indonesia.

Stocks are excluded from this universe if:
- their 3 Months Average daily trading volume is below 1.5 Million USD,
- Effective up until September 2020 review, they are assigned to the sector “8670”- Real Estate Investment Trusts companies.
  Effective with September 2020 review, they are assigned to the sector “351020”- Real Estate Investment Trusts companies.
- their Payout ratio is below 0% or exceeds 80%.

All remaining stocks are ranked according to their 12 months historical dividend yield. A maximum of 15 components per country are selected; no minimum number of components per country are set. The highest ranked 35 stocks on the selection list are selected; the remaining 15 stocks are selected from the highest ranked current stocks ranked between 36 and 70; if the number of stocks selected is still below 50, then the highest ranked remaining stocks are selected until there are 50 stocks.

Review frequency: The indices are reviewed on an annual basis in March, the components announced on the first Friday, implemented on the third Friday and effective the next trading day. The review cut-off date for the underlying data is the last trading day of the month preceding the review.
Shares and Free Float factors are updated in line with the STOXX Global Total Market indices on a quarterly basis. All changes are implemented on the third Friday in March, June, September and December and effective the next trading day.

Weighting cap factors: Components are capped at a maximum weight of 10% quarterly. The weighting cap factors are published on the second Friday of the review month using Thursday’s closing prices.

10.2.3. ONGOING MAINTENANCE

Replacements: A deleted stock is replaced with the highest-ranked non-component on the selection list if the number of stocks within the index would drop below 45. The selection list is updated once a year at annual review.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not permanently added to the index.

10.3. STOXX ASEAN SELECT DIVIDEND 30

10.3.1. OVERVIEW

The STOXX ASEAN SELECT DIVIDEND 30 Index aims to select from the ASEAN universe the 30 highest dividend paying companies.

Universe: All stocks in the investable universe (ASEAN region)

Weighting scheme: The indices are modified equal weighted. This means price-weighted with a weighting factor to achieve an equal weighting and limiting the maximum weight of a single country.

Base values and dates: 1000 as of March 31, 2004

Index types and currencies: Price, net and gross return in EUR and USD

10.3.2. INDEX REVIEW

Selection List

The following steps are applied:

» All companies in the STOXX ASIA Total Market Index from Malaysia (MY), Philippines (PH), Thailand (TH), Singapore (SG) and Indonesia (ID) and Vietnam (VN) qualify[17]
» Companies with a 3 months ADTV below 2 Million USD are excluded
» Effective up until September 2020 review, REITs companies (ICB 8670) are excluded. Effective with September 2020 review, REITs companies (ICB 351020) are excluded.
» Companies with payout ratios higher than 80% or below 0% are excluded
» Vietnamese stocks with investment limits below 4% are excluded
» All remaining companies are ranked by their 12 months historical dividend yield

Component list and selection with a 20-40 buffer rule:
The highest ranked 20 stocks on the selection list are selected; the remaining 10 stocks are selected from the highest ranked current stocks ranked between 21 and 40; if the number of stocks selected is still below 30, then the highest ranked remaining stocks are selected until there are 30 stocks.

During this process a maximum of seven components per country (Thailand: five) can be selected and no minimum numbers of components per country are set.

If during the step by step inclusion of the companies, one country reaches its limit (i.e. the constituent just included in the index brings the number of stocks from Singapore to seven), then all further stocks from the country on the selection list are no longer eligible.

[17] Further ASEAN countries are eligible (Brunei, Myanmar, Cambodia and Laos) for the index when being added to the STOXX trading universe.

Review frequency: The indices are reviewed on an annual basis in March. The review cut-off date for the underlying data is the last trading day of the month preceding the review. The components are announced on the first Friday and implemented on the third Friday in March, June, September and December and effective the next trading day.

Weighting cap factors: Components are equally weighted and Thailand is capped at 15% due to investment restrictions in the local market

10.3.3. ONGOING MAINTENANCE

Replacements: A deleted stock is replaced with the highest-ranked non-component on the selection list. The country constraints apply for replacement and a maximum of seven components per country (Thailand: five) can be selected The selection list is updated once a year at annual review.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not permanently added to the index.

10.4. STOXX MAXIMUM DIVIDEND INDICES

10.4.1. OVERVIEW

The STOXX Maximum Dividend Indices are designed to maximize the dividend yield of the index portfolio. The index contains the 40 stocks from the STOXX Regional benchmark / TMI Indices with the highest expected dividend yield.

Universe:
STOXX Europe Maximum Dividend 40, selected from STOXX Europe 600
STOXX Asia/Pacific Maximum Dividend 40, selected from STOXX Asia/Pacific 600
STOXX North America Maximum Dividend 40, selected from STOXX North America 600
STOXX Japan Maximum Dividend 40, selected from STOXX Japan 600
STOXX Global Maximum Dividend 40, selected from STOXX Global 1800

Weighting scheme: The indices are price-weighted with a weighting factor based on the adjusted dividend yield.

Base value and dates:
STOXX Europe Maximum Dividend 40 has a base value of 100 as of March 20th, 2000 for net-return and price indices and 29th of December 2000 for gross-return indices

For Asia/Pacific, North America, Global and Japan, the index has a base value of 100 as of January 31st 2011

Index types and currencies: For STOXX Japan Maximum Dividend 40: price, net return and gross return in EUR, USD and JPY. For all others: price, net return and gross return in EUR and USD.

10.4.2. INDEX REVIEW

Component selection

STOXX Regional Maximum Dividend 40
All components of the STOXX regional Benchmark that pass the following criteria are added to the selection list:
Companies must have a dividend ex-date within the upcoming quarter, i.e. from 3rd Friday of March, June, September and December until the third Friday of the quarterly period afterwards. The dividend data are based on company announcements and estimations known to STOXX by the end of January, April, July and October
Free-float market capitalization of at least 1 billion EUR
Average daily turnover value (ADTV) over the last three months of at least 4 million EUR.

All companies on the selection list are ranked in descending order by the adjusted gross dividend yield (see below for the calculations) and the first 40 companies are selected for the index composition. If fewer than 40 companies meet the above criteria, companies of the previous period with the highest gross dividend yield are selected.

STOXX Country Maximum Dividend 40
All components of the STOXX regional Benchmark that pass the following criteria are added to the selection list:
Companies must have a dividend ex-date within the upcoming quarter. The dividend data are based on company announcements and estimations known to STOXX by the end of January, April, July and October.
Free-float market capitalization of at least 1 billion EUR
Average daily turnover value (ADTV) over the last three months of at least 4 million EUR.

All companies on the selection list are ranked in descending order by the adjusted gross dividend yield (see below for the calculations) and the first 40 companies are selected for the index composition. If fewer than 40 companies meet the above criteria, companies of the previous period with the highest gross dividend yield are selected.

Review frequency:
STOXX Japan Maximum Dividend 40, semiannually in June and December
All other regional indices are reviewed quarterly in March, June, September and December

Weighting cap factors and adjusted dividend yield calculation:
At the cut-off date the dividend yields are calculated based on announced or estimated dividends and the closing price.

The adjusted dividend yield used for index selection and weighting is calculated as follows:

$$DY_{iT} = \frac{D_{it}}{p_{iT}}$$

DY_{it} = Dividend Yield of company (i) at time (t)
D_{it} = announced or estimated dividend for share (i) within calculation period (t)
p_{iT} = closing price of share (i) on the cut-off date (T)
t = time within the upcoming calculation period that starts at implementation date t_0
T = cut-off date

$$\text{adjusted } DY_{i,T} = \text{scaling factor}_{j,T} \times DY_{j,T}$$

$$\text{scaling factor}_{jT} = \begin{cases} \dfrac{\sum_{j}^{m} wl_{jT}}{LR_{jT}} ; \text{if } LR_{jT} > \sum_{j}^{m} wl_{jT} \\ 1; \text{else} \end{cases}$$

$$wl_{jT} = \frac{DY_{jT}}{\sum_{j}^{m} DY_{jT}} \times LR_{jT}$$

$$LR_{jT} = \frac{DY_{jT}}{ADTV(3months)_{jT}}$$

wl_{jT} = weighted liquidity ratio of company (j)
LR_{jT} = liquidity ratio of company (j)
m = number of companies on the selection list

The weighting cap factors are derived from the adjusted dividend yields:

$$w_i = \frac{\text{adjusted } DY_{it}}{\sum_{j=1}^{N} \text{adjusted } DY_j}$$

w_i = weight
DY_{it} = Dividend Yield of company (i) at time (t)
N = number of index components

Weighting cap factor = (1,000,000,000 x initial weight / closing price of the stock in EUR), rounded to integers.
Weights are capped at a maximum of 10%.

10.4.1. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit
If STOXX becomes aware of a dividend cancellation for the components of the STOXX Maximum Dividend indices, the company will be deleted from the index without replacement with two trading days notice. Dividends whose payment is postponed indefinitely or to a subsequent fiscal year are considered cancelled. In case a company pays its dividends for a fiscal year in tranches, after the first tranche has been paid, the cancellation of one or more remaining tranches or the postponement of their payment to a subsequent fiscal year is not considered a dividend cancellation.

Fast entry: Not applicable.

Spin-offs: Spin-off companies are not added permanently.

10.5. EURO STOXX QUALITY DIVIDEND 50

10.5.1. OVERVIEW

The EURO STOXX Quality Dividend 50 index aims to select 50 high quality, high dividend-paying and low volatility stocks.

Universe:
The index universe is defined by the parent index, the EURO STOXX Index (as observed on the review effective date, i.e. future composition).

Weighting scheme:
The index is weighted according to free-float market capitalization.

Base values and dates:
The following base values and dates apply: 100 on 19 June 2006.

For a complete list please consult the data vendor code sheet on the website[18]. Customized solutions can be provided upon request.

Index types and currencies:
Price, net and gross return in EUR and USD

10.5.2. INDEX REVIEW

Selection list:
All stocks in the base universe are first screened for liquidity. All stocks that have a 3-month Average Daily Trading Ratio (ADTR) of less than 0.25% are excluded from the base universe. If a stock has missing ADTR information, then the company is also removed from the base universe.

The following indicators are then calculated for all remaining stocks in the base universe:

i) 12-month trailing gross dividend yield (DY)
ii) payout ratio
iii) 3-month and 12-month trailing volatility in EUR
iv) 3-year historical net income yield growth rate for all ‘Financials’ (Effective up until September 2020 review, companies that have an ICB industry code of 8000. Effective with September 2020 review, companies that have an ICB industry code of 30 or 35); free cash flow (FCF) yield growth rate for all other companies

All values above are observed as of the cut-off date. Data used for ii) and iv) are from the last reported fiscal year.

If any among the 12-month trailing gross dividend yield, payout ratio, 3-year historical FCF / net income growth rate and both 3-month and 12-month trailing volatility of a stock has missing

[18] http://www.STOXX.com/download/indices/vendor_codes.xls

information, then the company is removed from the base universe. Additionally, if any of the dividend yield, payout ratio, or FCF (or net income for Financials. Effective up until September 2020 review, companies that have an ICB industry code of 8000. Effective with September 2020 review, companies that have an ICB industry code of 30 or 35) yield growth rate of a stock is equal to zero, or below zero in the case of dividend yield and payout ratio, then the company is also removed from the base universe.

Ratios and indicators used in the Selection process:

$$ADTR_t = \frac{3\ month\ ADTV_t}{MCap_t}$$

where,

t cut-off date
ADTV Average Daily Trading Volume
MCap Free-float Market Capitalization

$$Payout\ Ratio_t = \frac{Common\ Dividends_t}{(Net\ Income_t - Preferred\ Dividends_t)}$$

where,

t cut-off date

$$Volatility_t = \sqrt{\frac{1}{k-1}\sum_{i=1}^{k}(r_i - \bar{r})^2}$$

where,

t cut-off date
k number of returns between the cut-off date and:

i) the date 3 months prior to the cut-off date when calculating the 3-month historical volatility; if this is not a trading day, then the next trading day should be considered
ii) the date 12 months prior to the cut-off date when calculating the 12-month historical volatility; if this is not a trading day, then the next trading day should be considered

r_i daily return as of day i in the given time series of k returns
$\bar{r}$ mean of all daily returns r_i in the given time series, calculated as: $\bar{r} = \frac{1}{k}\sum_{i=1}^{k} r_i$

$$FCF_t = Net\ Cash\ Flow_t - Net\ CapEx_t$$

$$FCF\ Growth\ Rate_t = \frac{FCF_t}{MCap_t} - \frac{FCF_{t-3}}{MCap_{t-3}}$$

$$Net\ Income\ Growth\ Rate_t = \frac{Net\ Income_t}{MCap_t} - \frac{Net\ Income_{t-3}}{MCap_{t-3}}$$

where,

t	cut-off date
$t-3$	3 years prior to the cut-off date; if this is not a trading day, then the next trading day should be considered
FCF	Free Cash Flow
Net CapEx	Capital Expenditure on Fixed Assets
MCap	Free-float Market Capitalization

Composition list:
Each stock in the eligible universe is given a standardized score (z-score) for each of the 3 metrics: 12-month historical dividend yield, payout ratio and 3-year FCF (or net income) yield growth rate using the following calculation:

$$z_i = \frac{(x_i - \bar{x})}{\sigma}$$

where:

x_i	value of metric *x* for stock *i*
$\bar{x}$	mean value of the metric *x*
σ	standard deviation of the metric *x*

Each stock is then given an overall score (OS) by taking the sum of the 12-month historical dividend yield z-score, the negative of the payout ratio z-score and the 3-year FCF (or net income) yield growth rate z-score:

$$OS = z_{Dividend\ Yield} - z_{Payout\ Ratio} + z_{FCF\ /\ Net\ Income\ Growth\ Rate}$$

Next, the Equal Strength Ratio and the size of the target list (n) are calculated as follows:

$$ESR = \sqrt{\frac{50}{N}}$$

$$n = Rounddown\ (ESR * N)$$

where:

N	number of stocks for which an overall score can be calculated

The stocks are sorted in descending order based on their overall score, and the top n stocks are selected in order to create the target list. The final selection list is obtained by sorting the stocks in the target list in ascending order in terms of volatility (maximum between the 3-month and 12-month historical volatility).

The final composition is obtained by selecting the top 50 (lowest volatility) stocks in the final selection list with the following constraint:

- Maximum of 15 stocks per ICB industry

Review frequency:
The reviews are conducted on a semi-annual basis in June and December. The review cut-off date for the underlying data is the last calculation day of May and November respectively.

Weighting cap factors:
The index is weighted according to free-float market capitalization subject to a 4% cap per constituent on a semi-annual basis.

10.5.3. ONGOING MAINTENANCE

Replacements: Not applicable.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-off stocks are not added permanently.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com.

11. STOXX OPTIMISED INDICES

11.1. STOXX OPTIMISED INDICES BASED ON STOXX EUROPE 600

11.1.1. OVERVIEW

Two set of indices exist on the basis of STOXX 600:
STOXX Europe 600 Optimised Supersector
STOXX Europe 600 Optimised Market Quartiles

These indices apply a sector-dependent liquidity cap that reduces the weighting of the components, whose average daily turnover, as a fraction of its free-float market capitalization, is below the sector average. The hybrid market capitalization and the liquidity weighting methodology reflect optimized tradability of the STOXX Optimised indices, while retaining the free-float market capitalization weighted across the larger and more liquid components.

Universe: Indices for the following regions as defined in section 4.3 are calculated: Europe

Weighting scheme: Free-float market capitalization with a liquidity scaling factor.
Base value and date: All STOXX Europe 600 Optimised indices: 1000 on December 31, 2000.
Index types and currencies: Price, net return in EUR and USD.

11.1.2. INDEX REVIEW

Component selection
All STOXX Europe 600 stocks excluding the ones from Czech Republic, Greece and Iceland are eligible.
Equity turnover and the availability of funds to borrow are calculated for each eligible company:
Equity turnover: Average Daily Turnover (ADTV) over three months in EUR ending with the fifth trading day after the review cut-off date.
Availability of funds to borrow: Based on averaged data over seven trading days starting with on the fifth trading day of the review cut-off date, as provided by Data Explorers in EUR.

STOXX Optimised Supersector
The 30 least liquid and the 30 hardest to borrow stocks are deleted, starting with the smallest, considering the following conditions:
a. At least ten stocks must remain in the relevant Supersector.
b. The combined free-float market capitalization of the excluded stocks from a particular Supersector must not exceed 20%.

Weighting cap factors
The following capping procedure is applied to Optimised Supersector indices:
1. If the weighting of a component is above the Supersector's weighted average ADTV, it is reduced to that value by introducing a liquidity scaling factor (see Liquidity Scaling Factors).
2. A maximum weight cap factor is applied, based on the number of components (n) in the index:

If n < 25 apply 20%
If 25 < = n < 40 apply 15%
If n > = 40 apply 10%

For the technical index calculation both factors are multiplied and applied as one weighting cap factor.

STOXX Optimised Market Quartile

The 30 least liquid and the 30 hardest to borrow stocks are removed. These are then assigned to one of four thematic baskets which are clustered from the ICB subsectors. Please see the appendix in chapter 0for STOXX Optimised Market Quartiles for further information on subsector assignment to the relevant market quartiles.

Weighting cap factors

The following capping procedure is applied to Optimised Market Quartile indices:
1. If the weighting of a component is above the market quartile’s weighted average ADTV, it is reduced by a liquidity scaling factor (see Liquidity Scaling Factors).
2. A maximum weight cap factor of 10% is applied.

For the technical index calculation both factors are multiplied and applied as one weighting cap factor.

Review frequency: The Optimised indices are reviewed on a quarterly basis.

Derived indices

Region	Index Name
Europe	STOXX Europe 600 Optimised <Supersector>
Eurozone	EURO STOXX Optimised Banks

11.1.3. ONGOING MAINTENANCE

Replacements: Replacements are handled similar to STOXX Europe 600 Sector indices, except for replacements of Greece, Czech Republic or Iceland. A combined factor of 1 is applied to all new components that are added between two reviews.

Fast exit: Not applicable.
Fast entry: Not applicable.

Spin-offs: Spin-offs are treated the same as in STOXX Europe 600 Sector indices.

11. STOXX OPTIMISED INDICES

11.2. STOXX OPTIMISED COUNTRY DR INDICES

11.2.1. OVERVIEW

STOXX Optimised Country DR indices offer a depository receipt version for some of these markets. They use a liquidity scaling factor which aims to improve tradability. The selection is based on market capitalization and minimum liquidity.

Universe
The STOXX Optimised Country DR index universe is defined as all companies that are incorporated in Brazil, India, Mexico, Russia, or China with depository receipt (DR) listings on the LSE, NYSE or NASDAQ Stock exchanges.

STOXX Optimised Country DR indices :
Brazil and Mexico (100 as of September 15, 2000); Russia (as of September 20, 2002); China and India (as of September 19, 2003).

Weighting scheme: The indices are weighted according to free-float market capitalization.
Base value and date: 100 on September 15, 2000.
Index types and currencies: Price, net return, gross return in EUR and USD.

11.2.2. INDEX REVIEW

Component selection
In order to be eligible for index selection, stocks from the relevant universes are screened for the following criteria at the annual review date:
Free-Float market capitalization larger than EUR 180 million for non-components and equal to or larger than EUR 120 million for current components. ADTV over the last 3 months prior to and including the annual review date of at least EUR 1.2 million for non-components and at least EUR 0.7 million for current components.
In case of market events that negatively influence the aggregated liquidity and market capitalization of entire markets, the liquidity requirements can be lowered or the period index review can be postponed to the next quarterly review date. In such cases, the composition remains unchanged, but new weighting factors will be implemented.
If more than one listing per stock qualifies for index inclusion, the listing with the higher market capitalization is chosen. China is represented by Hong Kong listed H-shares and red chips. Foreign shares listed locally on Kuala Lumpur and Thailand stock exchanges are not considered for index inclusion.

The largest 30 stocks in terms of full market capitalization are selected for each index. If fewer than 30 stocks fulfill the liquidity criteria, the index will be calculated with the available number of stocks.

Review frequency: The indices are reviewed annually in September. The review cut-off date is the last trading day in July.

Rebalancing frequency: The indices are rebalanced on a quarterly basis in March, June, September and December by applying the procedure described in the Weighting cap factors section.

Weighting cap factors
The following capping procedure is applied:
1. If the weighting of a component is above the market quartile's weighted average ADTV, it is reduced to that value by introducing a liquidity scaling factor (see Liquidity Scaling Factors).
2. A cap factor of 10% is applied.

For the technical index calculation both factors are multiplied and applied as one weighting cap factor.

Derived indices: Not applicable.

11.2.3. ONGOING MAINTENANCE
Replacements: Stocks deleted from the STOXX Optimised Country indices due to mergers and acquisitions are not replaced.

Fast exit: Companies may be removed due to extraordinary market circumstances.

Fast entry: Not applicable.

Spin-offs: Spin-off companies are not added permanently.

12. STOXX STYLE INDICES

12.1. STOXX TM STYLE INDICES

12.1.1. OVERVIEW

The STOXX Total Market Style Indices represent a broad coverage of companies that have similar growth and value characteristics based on fundamental criteria.

Universe: Depending on the Style index, the eligible universe is defined as the components of one of the following parent indices:

- STOXX Europe Total Market
- STOXX Europe Total Market <Size>

Weighting scheme: The index is weighted according to free-float market capitalization.
Base value and date: 1,000 on June 30, 1997.
Index types and currencies: Price, net return in EUR and USD.

12.1.2. INDEX REVIEW

Component selection

Target coverage: growth and value stocks selected from the STOXX Europe TM Index at the first and third quarterly reviews.

Review procedures:

The style characteristics of each stock are determined by analyzing six factors, out of which two are projected, two current and two historical:

1. Projected price/earnings (P/E) ratio: Based on the closing price at the time of the review and on the mean annual earnings per share (EPS) expected for the next fiscal period, as reported by the Institutional Brokers' Estimate System (IBES). A high projected P/E ratio is associated with the Growth style.
2. Projected earnings growth: Based on the expected three to five year annual increase in operating EPS, as defined by the IBES long-term growth forecast. . A high projected earnings growth is associated with the Growth style.
3. Trailing P/E ratio: Based on the closing price at the time of the review and on the previous quarter's EPS from continuing operations, as reported by IBES. A high trailing P/E ratio is associated with the Growth style.
4. Trailing earnings growth: Based on average annualized EPS growth for the previous 21 quarters, as reported by IBES. A high trailing earnings growth is associated with the Growth style.
5. Price/book (P/B) ratio: Based on the closing price at the time of the review and the book value per share. A high current P/B ratio is associated with the Growth style.
6. Dividend yield: Based on the closing price at the time of the review and the total dividends declared by the company during the previous 12 months. A high current dividend yield is associated with the Value style.

Stocks for which the value of a factor cannot be determined are excluded from the selection. The remaining stocks are ranked for each of the six factors. For each factor, the stocks beyond the 5^{th} and 95^{th} percentiles are assigned the same factor values as the stocks at the 5^{th} and 95^{th} percentiles.

For each stock the values of the six factors are z-scored for normalization.

A multivariate, statistical cluster analysis is conducted to produce five clusters: Strong Growth (SG) and Weak Growth (WG), Strong Value (SV) and Weak Value (WV), and Neutral (NT).
Each style cluster is represented by a certain seed. A seed expresses the representative z-score value to be attained by each z-score of any given security in order for that security to be classified as part of that cluster.
The table below shows the seeds for each style:

Style	Strong Growth	Weak Growth	Neutral	Weak Value	Strong Value
Seed	1	0.2	0	-0.2	-1

The clustering procedure foresees that, for each i^{th} stock, the five Euclidean distances between its six z-scores and each seed value are calculated:

$$\text{distance}_{i,k} = \sqrt{\sum_{j=1}^{6}\left(\text{z-score}_{i,j} - \text{seed}_k\right)^2}$$

The seeds act as style attraction points, hence, the smaller the Euclidean distance of a security's z-scores from a seed, the stronger the belief that that security belongs to the style associated with that seed: each security is thus assigned to the style cluster for which the Euclidean distance is smallest among the five.
To properly reflect the fact that a high dividend yield is typically associated with Value stocks, the sign of the dividend yield z-score is reversed in the calculation.

A set of rules aims to avoid that stocks can change more than one cluster from one review to the next and that larger stocks remain the in Neutral cluster for longer than one review period. The rules are as follows:

All stocks that have been classified into the neutral cluster in the last review, will go into the cluster that they classify for in this review.

All stocks that have been classified into the Weak Value (Weak Growth) cluster in the last review, and would be classified in any Growth (Value) or Neutral cluster in the current review, are reclassified to Neutral.
Stocks that:
1. were classified as Neutral in the last review, and
2. are classified as Neutral in the current review, and
3. weigh at least 0.5% in the STOXX Europe Total Market index

are reclassified as either Weak Value or Weak Growth, depending on which cluster seed they are closer to.

Only the stocks associated with a Growth or Value cluster will be part of the respective Style index, all Neutral stocks are excluded from the selection. Additionally, at the second and fourth quarter reviews of the STOXX Europe TM index the following rules apply:

New stocks added to the STOXX Europe TM index are immediately classified as neutral stocks until the next review of the style indices.

Stocks deleted from the STOXX Europe TM index are immediately deleted from the style indices. Stocks reclassified into different STOXX Europe Total Market Size indices are also immediately reclassified into the corresponding STOXX Europe Total Market Style Size indices.

Review frequency: The indices are reviewed semi-annually in March and September.
Weighting cap factors: No weighting cap factors are applied.
Derived indices: Subset for the Eurozone region as defined in section 4.3.

12.1.3. ONGOING MAINTENANCE

Additions and deletions: New stocks added to the parent indices at the June or December review are immediately classified as Neutral stocks until the next review of the Style indices.
Stocks deleted from the parent indices are immediately deleted from the Style indices.
Stocks reclassified into a different parent <Size> index are also immediately reclassified into the corresponding Style <Size> indices.

Replacements: Stocks deleted from the Style indices are not replaced.

Spin-offs: Spin-offs are added permanently if qualifying for the parent indices as of the latest quarterly review list in terms of free-float market capitalization. A spun-off company is added to the same cluster as the parent company.

12.2. STOXX STRONG STYLE INDICES

12.2.1. OVERVIEW

The STOXX Strong Style indices contain companies that have the highest growth and value scores based on fundamental criteria.

Universe: The eligible universe is defined as the components of the STOXX Europe Total Market index.

Weighting scheme: The index is price-weighted according to the growth and value scores.
Base value and date: 1,000 on September 30, 2001.
Index types and currencies: Price, net return in EUR and USD.

12.2.2. INDEX REVIEW

Component selection

STOXX Europe Strong Growth (Value) 20 Index (10 – 30 buffer rule)

Stocks are screened for a minimum level of liquidity: stocks with 6-month average daily traded value below € 2mn will be excluded. If multiple lines of a stock qualify for the index, the less liquid line is removed.

The style characteristics of each stock are determined by analyzing six factors, out of which two are projected, two current and two historical:

1. Projected price/earnings (P/E) ratio: Based on the closing price at the time of the review and on the mean annual earnings per share (EPS) expected for the next fiscal period, as reported by the Institutional Brokers' Estimate System (IBES). A high projected P/E ratio is associated with the Growth style.
2. Projected earnings growth: Based on the expected three to five year annual increase in operating EPS, as defined by the IBES long-term growth forecast. A high projected earnings growth is associated with the Growth style.
3. Trailing P/E ratio: Based on the closing price at the time of the review and on the previous quarter's EPS from continuing operations, as reported by IBES. A high trailing P/E ratio is associated with the Growth style.
4. Trailing earnings growth: Based on average annualized EPS growth for the previous 21 quarters, as reported by IBES. A high trailing earnings growth is associated with the Growth style.
5. Price/book (P/B) ratio: Based on the closing price at the time of the review and the book value per share. A high current P/B ratio is associated with the Growth style.
6. Dividend yield: Based on the closing price at the time of the review and the total dividends declared by the company during the previous 12 months. A high current dividend yield is associated with the Value style.

Stocks for which the value of a factor cannot be determined are excluded from the selection. The remaining stocks are ranked for each of the six factors. For each factor, the stocks beyond the 5th and 95th percentiles are assigned the same factor values as the stocks at the 5th and 95th percentiles.

For each stock the values of the six factors are z-scored for normalization.

A multivariate, statistical cluster analysis is conducted to produce two clusters: Strong Growth (SG) and Strong Value (SV).
Each style cluster is represented by a certain seed. A seed expresses the representative z-score value to be attained by each z-score of any given security in order for that security to be classified as part of that cluster.
The table below shows the seeds for each style:

Style	Strong Growth	Strong Value
Seed	2	-2

In the clustering procedure the five Euclidean distances between the six z-scores and each seed value are calculated for each i-th stock:

$$\text{distance}_{i,k} = \sqrt{\sum_{j=1}^{6}\left(\text{z-score}_{i,j} - \text{seed}_k\right)^2}$$

Then the growth (value) score is calculated:

$$\text{Growth-score}_i = \frac{\text{distance}_{i,SV}}{\text{distance}_{i,SG} + \text{distance}_{i,SV}} \quad \text{and} \quad \text{Value-score}_i = 1 - \text{Growth-score}_i$$

All stocks ranked 10 or above by their Growth (Value) score on the selection list will be added to the index. The remaining 10 stocks are selected from the largest remaining current stocks ranked between 11 and 30. If the number of stocks selected is still below 20, then the largest remaining stocks are selected until the component count reaches 20.

STOXX Europe Strong Style 40 Index
The STOXX Europe Strong Style 40 Index is the combination of the STOXX Europe Strong Growth 20 and STOXX Europe Strong Value 20 indices.

Review frequency: The indices are reviewed annually in September. The review cut-off date is the last trading day in August.

Weighting cap factors: The component are weighted according to their value and growth score
Initial weight calculation

$$w_i = \frac{S_i}{\sum_{j=1}^{N} S_j}$$

w_i = target weight
S_i = respective value or growth score of company i
S_j = respective value or growth score of company j
N = number of index components

Weighting cap factor = (1,000,000,000 x target weight / closing price of the stock in EUR), rounded to integers.
All components are capped at a maximum weight of 15% annually.

Derived indices

STOXX Europe Strong Growth 20	STOXX Europe Strong Value 20	STOXX Europe Strong Style Composite 40
EURO STOXX Strong Growth 20	EURO STOXX Strong Value 20	EURO STOXX Strong Style Composite Value 40

12.2.3. ONGOING MAINTENANCE

Replacements: A deleted stock in STOXX Strong Style Index is replaced by the highest-ranked non-component on the relevant STOXX Strong Style selection list. The selection list is updated annually. The new company will be added at the same weight as the company being removed.

Spin-offs: Spun-off companies are not added permanently.

12. STOXX STYLE INDICES

12.3. STOXX STRONG QUALITY

12.3.1. OVERVIEW

The STOXX Strong Quality indices select the best companies based on an average ranking of three fundamentals factors (Return on Capital, Current ratio and Company Equity Yield) and fulfilling minimum liquidity criteria.

Universe:
Indices for the following regions as defined in section 4.3 are calculated: Global, Asia/Pacific, Europe, USA. The indices are derived from their regional benchmark indices:
STOXX Global Strong Quality 50 indices based on STOXX Global 1800
STOXX Europe Strong Quality 30 indices based on STOXX Europe 600
STOXX Asia/Pacific Strong Quality 30 based on STOXX Asia/Pacific 600
STOXX USA Strong Quality 50 indices based on all U.S. stocks from the STOXX North America 600
STOXX Nordic Strong Quality 20 indices based on all Nordic stocks from STOXX Europe 600

Base values and dates: 100 on June 23, 2003
For a complete list please consult the data vendor code sheet on the website[19].

Weighting scheme: Weighted according to the free-float market capitalization
Index types and currencies: Price, net return, gross return, all available in EUR and USD.

12.3.2. INDEX REVIEW

Selection list
All stocks in the universe must fulfill the following criteria on the cut-off date to be eligible for the selection list:

» Minimum liquidity criteria: 3 months Average Daily Traded Value (ADTV) of 5 mln EUR for the regional indices for Europe and Asia / Pacific, 10 mln EUR for the Global and U.S. version, and 1 mln EUR for the Nordic version
» Stocks must have a positive and non-constant Return on Capital (ROC) for the past three years, including the current year
» Stocks must have a Current ratio (CR) greater than one
» Stocks must have a Company Excess Yield (EY) greater than 0. The Company Excess Yield (EY) is defined as the difference between the Company Equity Yield (CEY = EBITDA/EV) and a Global Equivalent Corporate Bond Yield (GEBY) measured as the US AAA Corporate Bond Yield (CBY) times 1.5.
EY = CEY – CBY x 1.5 = CEY - GEBY

The eligible stocks are ranked by ROC, CR and EY in descending order and a final rank is calculated as the average of the three rankings. All stocks are sorted by their final rank in ascending order. If two of more stocks have the same rank, they are sorted by ROC (descending order) first, following CR (descending order) and then CEY (descending order).

[19] http://www.STOXX.com/download/indices/vendor_codes.xls

Composition list
The first 50 stocks in the ranking (30 stocks for Europe and Asia, 20 for Nordic) are selected from the selection list for the index composition. No buffer rules apply.
If less than the required number of stocks can be selected, the index will be calculated with the stocks available on the selection list and will have less constituents until the next periodic index review.

Review frequency: The indices are reviewed annually in June. The cut-off date is the last business day of month preceding the review month.

If a company is deleted from the STOXX Benchmark indices between the annual review dates of the STOXX Strong Quality indices, it will remain in the indices until the next annual review if it is still a component of the STOXX Global TMI.

Weighting cap factors: Components are capped at a maximum weight of 10% quarterly. The weighting cap factors are published on the second Friday of the review month using Thursday's closing prices.

12.3.3. ONGOING MAINTENANCE
Replacements A deleted stock is replaced immediately to maintain the fixed number of stocks. The replacement is based on the latest selection list.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: spin-off companies are not added permanently.

12. STOXX STYLE INDICES

12.4. STOXX STRONG BALANCE SHEET

12.4.1. OVERVIEW

The STOXX Strong Balance Sheet Index family reflects companies with a high Altman Z-Score (a quantitative measure of the financial and fundamental health of a company) and minimum liquidity criteria.

Universe: STOXX Global 1800 und regional subsets excluding Financials. Effective up until September 2020 review, the indices are derived from their regional benchmark indices excluding Financials (ICB industry 8000). Effective with September 2020 review, the indices are derived from their regional benchmark indices excluding Financials (ICB industry 30 and 35)

Indices for the following regions as defined in section 4.3 are calculated: Global, Europe, Japan and USA
Effective up until September 2020 review, the indices are derived from their regional benchmark indices excluding Financials (ICB industry 8000). Effective with September 2020 review, the indices are derived from their regional benchmark indices excluding Financials (ICB industry 30 and 35):

STOXX Global Strong Balance Sheet based on STOXX Global 1800
STOXX Europe Strong Balance Sheet based on STOXX Europe 600
STOXX Japan Strong Balance Sheet based on all Japanese companies of the STOXX Global 1800
STOXX USA Strong Balance Sheet based on all U.S. companies of the STOXX Global 1800

Weighting scheme:
» Weighted according to the free-float market capitalization with a 10% maximum capping per constituent
» Price weighted with a weighting factor to achieve an equal weighting (please see chapter 8 for details on the equal-weighting process)

Base values and dates: 100 on September 24, 2007
For a complete list please consult the data vendor code sheet on the website[20].

Index types and currencies: Price, net return, gross return, all available in EUR and USD. The STOXX Japan Strong Balance Sheet indices are also available in JPY.

12.4.2. INDEX REVIEW

Selection list
All stocks in the universe must fulfill the following criteria at the cut-off date to be eligible for the selection list. The cut-off date is the last trading day of the month preceding the review month.

Liquidity criteria:

[20] http://www.STOXX.com/download/indices/vendor_codes.xls

» Only stocks with a 3 months average daily traded value (ADTV) above the threshold are eligible for the selection list.
The threshold is chosen as the maximum of the 5% percentile of all ADTVs per country / regional universe ex financials companies and of a fixed floor defined per country / region as follows:
  - Global and USA: 5mln USD
  - Europe: 3mln EUR
  - Japan: 300mln JPY

Altman Z-Score criteria:
» The Altman Z-Score is observed on the current cut-off date and on the cut-off dates one and two years before
» Companies without an Altman Z-Score or with an Altman Z-Score which has been carried over (same value as in previous year) for longer than one year are excluded from the universe

Altman Z-Score = 1.2 * (Working Capital / Tangible Assets) + 1.4 * (Retained Earnings / Tangible Assets) + 3.3 * (EBIT / Tangible Assets) + 0.6 * (Market Value of Equity / Total Liabilities) + (Sales / Tangible Assets)

Composition list:
All companies with an Altman Z-Score greater 3.5 consecutively on the last current cut-off date and on the cut-off dates one and two years before are selected for the index.

Review frequency: The reviews are conducted on an annual basis in September considering the review results of the STOXX Global 1800 index to capture future component changes. On each quarterly periodic review the free-float market capitalization weighted version is subject to a 10% capping per component and the equal-weighted versions is rebalanced to equal weights.

If a company is deleted from the STOXX Benchmark indices between the annual review dates, it will remain in the STOXX Strong Balance Sheet indices as long as it is still a component of the STOXX Global TMI and until the next annual review.

12.4.3. ONGOING MAINTENANCE
Replacements:
Deleted companies are not replaced.

Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-off companies are not added permanently.

13. STOXX THEME INDICES

13.1. STOXX GLOBAL INFRASTRUCTURE INDICES

13.1.1. OVERVIEW

STOXX Global Extended Infrastructure 100 and STOXX Global Infrastructure Suppliers 50 are Blue Chip indices. The selection of infrastructure-related companies (asset owners or suppliers) is performed by an independent Research Partner. The indices cover the largest components of respective infrastructure sectors.

Universe: The index universe is defined as all stocks from the STOXX Global TMI index that derive at least 50% of the total most recent annual revenues from infrastructure business and/or supplying goods or services to companies from the infrastructure industry.

Infrastructure sectors are based on a proprietary industry classification of our Research Partner Factset and are defined as follows:
Midstream
Wireline
Cable & Satellite
Rail Transportation
Road Transportation
Air Transportation
Water Transportation
Passenger Transportation
Energy Utilities
Water Utilities
Waste Management

STOXX uses FactSet Research Systems granular analysis to determine a company's position within the infrastructure subsectors of its FactSet Revere Business Industry Classification System (FactSet RBICS). FactSet Revere is a sector, supply chain, and geographic risk taxonomy expert.

Weighting scheme: The indices are weighted according to free-float market capitalization

Base value and dates: 1'000 on March 21, 2011.

Index types and currencies: Price and net-return in EUR and USD.

Dissemination calendar: STOXX Americas calendar

13.1.2. INDEX REVIEW

Component selection

In the following sections, the cut-off date for the data provided by the Research Partner is the last calculation day in January.

STOXX Global Extended Infrastructure 100 Index
Target coverage: 100 infrastructure sector leaders from the stocks considered to be infrastructure related companies by the Research Partner. There is a minimum liquidity requirement for

components to be eligible: the 3-month average daily trading value (ADTV) has to be at least of EUR 1 million.

For each of the eleven infrastructure sectors, the stocks are ranked in terms of free-float market capitalization and the largest seven stocks are added to the index. If there are fewer than seven stocks within a sector, only the available stocks that passed the required liquidity filter are added to the index.
All remaining stocks are ranked by free-float market capitalization regardless of their sector.
The largest current components ranked 110 or better which have not been selected in step 1 are added until the component count has been reached.
If the number of stocks is still below the required component count the largest remaining stocks are selected until the components count is reached

STOXX Global Infrastructure Suppliers 50 Index
Target coverage: 50 leaders from the stocks considered to be suppliers of the companies from the infrastructure sector by the Research Partner. There is a minimum liquidity requirement for components to be eligible: the 3-month average daily trading value (ADTV) has to be at least of EUR 1 million.

For each of the eleven infrastructure sectors, the stocks are ranked in terms of free-float market capitalization and the largest four stocks are added to the index. If there are fewer than four stocks within a sector, the available stocks that passed the required liquidity filter are added to the index only.
All remaining stocks are ranked by free-float market capitalization regardless of their sector.
The largest current components ranked 55 or better which have not been selected in step 1 are added until the component count has been reached.
If the number of stocks is still below the required component count the largest remaining stocks are selected until the components count is reached

Review frequency: The indices are reviewed annually in March in line with the STOXX Benchmark index schedule.

Weighting cap factors: A cap of 20% is applied on each of the eleven sectors quarterly. The second largest component of the overall index is subject to maximum weight of 15% at the quarterly review. The weighting cap factors are published on the Wednesday, two trading days prior to quarterly review implementation using Tuesday’s closing prices.

Derived indices: Not applicable.

13.1.3. ONGOING MAINTENANCE

Replacements
Stocks deleted from the STOXX Global TMI are deleted from the STOXX Global Infrastructure indices. A deleted stock is replaced to maintain the fixed number of stocks. The replacement is based on the latest quarterly selection list.
If the number of companies for a certain infrastructure sector goes below seven for the STOXX Global Extended Infrastructure 100 Index or four for the STOXX Global Infrastructure Suppliers 50 Index, the largest stock from this sector is taken from the selection list.
Otherwise the largest stock from the selection list regardless of its sector is added to the index.
Replacements are added with the same weighting cap factor as assigned at the last quarterly review to the specific sector.

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

Fast Exit: Not applicable.
Fast entry: Not applicable.

Spin-Offs: Spin-off companies are not added permanently.

13.2. STOXX GLOBAL BROAD INFRASTRUCTURE

13.2.1. OVERVIEW

The STOXX Global Broad Infrastructure Index is derived from the STOXX Developed and Emerging Markets Total Market (all developed and emerging markets of the STOXX Global Total Market Index). The components are chosen from five infrastructure related synthetic supersectors which in turn, comprise of 17 synthetic sectors and selected by the free-float market capitalization.

Universe: The index universe is defined as all companies listed in developed or emerging markets which are part of the STOXX Global Total Market Index.

Weighting scheme: The indices are weighted according to free-float market capitalization with additional weighting cap factors

Base value and dates: 100 on March 16, 2007.
Index types and currencies: Price, gross return and net return in EUR and USD.

Dissemination calendar: STOXX Americas calendar

13.2.2. INDEX REVIEW

Component selection:
The companies of universe are screened for the following criteria and then sorted by their free-float market capitalization:
» Minimum liquidity criteria: 3-month average daily trading volume (ADTV) greater than one million USD.
» Companies must generate at least 50% of their revenues within the following infrastructure-specific super-sectors / sectors. The infrastructure sectors are based on a proprietary industry classification of a Research Partner and are defined as follows:

  » Communication: cable & satellite, data centers wireless, wireless towers, wireline
  » Energy: energy utilities, midstream energy
  » Government outsourcing / social: correctional facilities, hospitals, postal services
  » Transportation: air transportation, passenger transportation, rail transportation, road transportation, water transportation
  » Utilities: waste management, water utilities

Companies are selected according to their free-float market capitalization under the following constraints:
  » A maximum of 40 index constituents from each of the five super-sectors (communications, energy, transportation, government outsourcing/social, utilities) is allowed to enter the index
  » A maximum number of companies per sector is given by 40/n, with n = number of sectors within each supersector.

Review frequency: The index is reviewed annually in March together with the STOXX Total Market indices. The review cut-off date is the last trading day in January.

Weighting cap factors: To prevent companies, supersectors and countries from dominating the portfolio, the index is subject to a quarterly three-dimensional capping with a maximum weight of

5% on constituent level, 30% on super-sector-level and 40% on country level (please refer to following chapter for a detailed description of the capping procedure).
The weighting cap factors are published on the second Friday of the quarter, one week prior to quarterly review implementation, and calculated using Thursday's closing prices

13.2.3. CAPPING PROCEDURE

The capping-procedure is subject to three steps:

Step 1:

The model aims to equally reduce the weights of all index constituents in order to fulfill the predefined capping criteria. To do so, the initials weights (based on the Free Float mcap) are multiplied by a correction factor that is determined as follows:

$$CF_{min} = \min \begin{cases} CF_{component} = {}^{x}/_{X} \\ CF_{country} = {}^{y}/_{Y} \\ CF_{supersector} = {}^{z}/_{Z} \end{cases}$$

where:

x = maximum component weight
y = maximum country weight
z = maximum super-sector weight
X = largest component weight
Y = largest country weight
Z = largest super-sector weight

Step 2:

In a second step, the altered weights of only those components that do not belong to the group of constituents that led to the cap in step 1 are then multiplied with a second factor UFmin which is determined as follows:

$$UF_{min} = \min \begin{cases} UF_{component} = \frac{x}{X^u} \\ UF_{country} = \min\limits_{i}\left[UF_{country_i}\right] = \min\limits_{i}\left[\frac{(y - Y_i^c)}{(Y_i - Y_i^c)}\right] \\ UF_{supersector} = \min\limits_{j}\left[UF_{supersector_j}\right] = \min\limits_{j}\left[\frac{(z - Z_j^c)}{(Z_j - Z_j^c)}\right] \\ UF_{index} = \frac{(1 - A^c)}{(A - A^c)} \end{cases}$$

where:

x = maximum component weight
y = maximum country weight
z = maximum super-sector weight
X^u = largest (uncapped) component weight

Y_i = weight of all components of country i
Y_i^c = weight of all capped components of country i
Z_j = weight of all components of supersector j
Z_j^c = weight of all capped components of supersector j
A = weight of all components of the index
A^c = weight of all capped components of the index

Step 3:

In a third step, it has to be distinguished between four scenarios:

Scenario 1:
If $UF_{min} = UF_{component}$: The weight of the largest uncapped component has been increased to reach its maximum of x%. Consequently, it will be fixed until the end of the capping procedure.

Scenario 2:
If $UF_{min} = UF_{country_i}$: The weight of country i has been increased to reach its maximum of y% Consequently, it will be fixed until the end of the capping procedure.

Scenario 3:
If $UF_{min} = UF_{supersector_j}$: The weight of super-sector j has been increased to reach its maximum of z% Consequently, it will be fixed until the end of the capping procedure.

Scenario 4:
If $UF_{min} = UF_{index}$: All predefined criteria are met and the capping procedure ends.

In scenarios 1, 2 and 3, step 2 of the above defined capping iteration is reapplied to the uncapped components until scenario 4 occurs.

13.2.4. ONGOING MAINTENANCE

Replacements
A deleted stock is not replaced. Stocks deleted from the STOXX Global TMI are deleted from the STOXX Global Broad Infrastructure index.

Fast Exit: Not applicable.
Fast entry: Not applicable.

Spin-Offs: Spin-off companies are not added permanently.

13.3. STOXX GLOBAL 3D PRINTING INDEX FAMILY

13.3.1. OVERVIEW

The STOXX Global 3D Printing Tradable index aims to select the top 30 companies related to the 3D Printing sector (>1% of revenues) with tradability criteria (Average Daily Traded Value (ADTV), Free-Float Market Capitalization, Weighting Cap Limits and Developed Country status).

The STOXX Global 3D Printing Pureplay index aims select the top 30 companies highly related to the 3D Printing sector (>10% of revenues) with lower tradability criteria (Average Daily Traded Value (ADTV), Free-Float Market Capitalization)

Universe: The index universe is defined as all companies (equity and ADR lisitings) listed in the STOXX investable universe as defined in section 4.2

Weighting scheme:
STOXX Global 3D Printing Tradable: price-weighted with a weightfactor to achieve an equal weighting
STOXX Global 3D Printing Pureplay: Free-Float Market capitalization weighted

Base value and date: 100 on September 17, 2010
Index types and currencies: Price, net return, gross return in EUR and USD.

13.3.2. INDEX REVIEW

Selection and composition list for the STOXX Global 3D Printing Tradable:
The top 50 companies with involvement into 3D Printing are selected from the universe. Companies are excluded if they do not fulfill the following criteria[21]:

» ADTV 3Months > 250,000 EUR.
» Free Float Market Capitalization > 80 mln EUR.
» Revenues from 3D Printing > 1%.
» The assigned country belongs to the developed market countries as defined by STOXX. Please refer to section 4.3 for further details.

The remaining companies are ranked according to the Free Float Market Capitalization. The top 30 companies are selected. In case there are less component in the universe, all eligible companies are selected.

Selection and composition list for the STOXX Global 3D Printing Pureplay:
The top 50 companies with involvement into 3D Printing are selected from the universe. Companies are excluded if they do not fulfill the following criteria[21]:

» ADTV 3 months > 25,000 EUR.
» Free Float Market Capitalization > 10 mln EUR.
» Revenues from 3D Printing > 10%.

The remaining companies are ranked according to the Free Float Market Capitalization. The top 30 companies are selected. In case there are less component in the universe, all eligible companies are selected.

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[21] Revenues provided by Marketline as of the last business day of July; free-float market capitalization for current STOXX components is as of the last business day of July and for new components as provided by Marketline as of the last business day of July.

Review frequency: The index is reviewed annually in September

Weighting cap factors:
STOXX Global 3D Printing: All components are equal-weighted. The weightings are published on the second Friday of each quarter, one week prior to quarterly review implementation using Thursday's closing prices.
Weighting cap factor = (100,000,000,000 x initial weight / closing price of the stock in EUR) and rounded to integers.

STOXX Global 3D Printing Pureplay: the component weights are capped at 20%

Derived indices: Not applicable.

13.3.3. ONGOING MAINTENANCE

Replacements: Deleted stocks are not replaced.

Fast Exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off companies are not added permanently.

13.4. STOXX LOW CARBON

13.4.1. OVERVIEW

The constituents for the STOXX Low Carbon family of indices will be selected from the STOXX Global 1800 universe, excluding coal companies. Companies are selected based on their Carbon Intensity Data (Scope 1 + Scope 2 Greenhouse Gas emissions (GHG) / Revenue ($million)).

The STOXX Low Carbon family of indices consists of the following groups:

- » Low Carbon indices: Global, Regional and Country Low Carbon indices
- » Blue chip indices: Global, Regional and Country ICB Industry Top 50, 100 or 400 indices
- » Reported data indices: Global, Regional and Country Reported Carbon data indices
- » Global ex Countries and ex Regions indices
- » Global and Regional Low Carbon Footprint indices
- » STOXX Global Climate Change Leaders Index

Universe:
All securities from the STOXX Global 1800 index.

Weighting scheme:
Indices are price weighted with a weight factor based on the free-float market capitalization multiplied with the corresponding Z-score carbon intensity factor of each constituent.

Additionally, the Top 50, 100 or 400 indices will be offered with an Equally Weighted version.

A Weight Cap of 5% are applied to all indices.

Base value and date:
100 on 19 December 2011

Index types and currencies:
Price, net and gross return in EUR and USD. Regional indices (e.g. Japan and ex Australia) in JPY and AUD.

13.4.2. INDEX REVIEW

Selection list:
Effective up until September 2020 review, components are selected from the STOXX Global 1800 universe, excluding ICB Code 1771 (Coal). Effective with September 2020 review, components are selected from the STOXX Global 1800 universe, excluding ICB Code 60101040 (Coal).

The indices will be defined by the parent index (see table below):

Underlying Parent Index	Associated Carbon Index
STOXX Global Total Market Index	STOXX Global Climate Change Leaders Index
STOXX Global 1800 index	STOXX Global 1800 Low Carbon index STOXX Europe 600 Low Carbon index

	EURO STOXX 50 Low Carbon index EURO STOXX Low Carbon index STOXX USA Low Carbon index STOXX Japan Low Carbon index STOXX Global Low Carbon Footprint index STOXX Europe Low Carbon Footprint index STOXX Global Reported Low Carbon index STOXX Europe Reported Low Carbon index EURO STOXX Reported Low Carbon index STOXX USA Reported Low Carbon index STOXX Global Low Carbon 100 index STOXX Global Low Carbon 400 index STOXX Europe Low Carbon 50 index STOXX Europe Low Carbon 100 index STOXX USA Low Carbon 50 index STOXX Global Low Carbon 100 Equal Weight index STOXX Global Low Carbon 400 Equal Weight index STOXX Europe Low Carbon 50 Equal Weight index STOXX Europe Low Carbon 100 Equal Weight index STOXX USA Low Carbon 50 Equal Weight index STOXX Global 1800 ex USA Low Carbon index STOXX Global 1800 ex Japan Low Carbon index STOXX Global 1800 ex Australia Low Carbon index STOXX Global 1800 ex Europe Low Carbon index

Component selection:
Components are screened according to their Carbon Intensity as defined:
Carbon Intensity = (Scope 1 + Scope 2 GHG emissions) / Revenue (USD million))

The data consists of both Reported (from CDP: companies voluntarily annually report, amongst others, Scope 1 & 2 GHG emissions) and Estimated data (from ISS-Ethix Climate Solutions, who uses, amongst others, CDP data to estimate GHG emissions with a model developed in cooperation with the Zurich ETH university, for companies that do not report to CDP). Should data not be available for a security, the security will be excluded from the universe.

For the following explanation, please read together with the matrix above.

1. Low Carbon indices: Global, Regional and Country Low Carbon indices:
   - From the Universe, select all companies that have both Reported and Estimated Carbon Intensity data.
2. Blue chip indices: Global, Regional and Country ICB Industry Top 50, 100 or 400 indices.
   - From the Universe, companies are grouped by ICB Industry and all companies that have both Reported and Estimated Carbon Intensity data are selected.
   - Rank the companies in ascending order by Carbon Intensity. Select the top N_{EI} companies by industry with the lowest Carbon Intensity figures to create both

Global, Regional and Country Industry Top 50 / 100 / 400 indices, by the following process for each of the ICB Industries:

$$N_{EI} = \frac{N_{Index}}{N_I}$$

rounded to the lower integer and where:

N_{EI} = number of selectable Equities for Industry I
N_{Index} = required number of Constituent Elements for the index
N_I = number of ICB Industries represented by the Equities

In case the number of equities selected across all Industries is not sufficient to reach the required number of Constituent Elements, the remaining Equities will be selected among those with the highest ranking (i.e. lowest emission intensity), where one constituent at a time is selected from each ICB Industry, starting with the ICB Industry where the next in line company has the lowest emission intensity, then moving to the next ICB Industry and so forth.

3. Reported data indices: Global, Regional and Country Reported Carbon data indices.
    - From the Universe, select only companies that have Reported Carbon Intensity data from CDP.

4. Global ex Countries and ex Regions indices:
    - From the Universe, exclude companies from Countries and Regions as defined in the table above

5. Global and Regional Low Carbon Footprint indices:
    - From the Universe, follow a 3 step process.
    - Step 1: Effective up until Septemeber 2020 review, exclude the following ICB Supersectors: Chemicals (ICB code 1300), Utilities (ICB code 7500), Oil & Gas (ICB code 0500), Construction & materials (ICB code 2300), Travel & Leisure (ICB code 5700), Real Estate (ICB code 8600) and Basic Resources (ICB code 1700): Effective with Septemeber 2020 review, exclude the following ICB Supersectors: Chemicals (ICB code 5520), Utilities (ICB code 6510), Energy (ICB code 6010), Construction & materials (ICB code 5010), Travel & Leisure (ICB code 4050), Real Estate (ICB code 3510) and Basic Resources (ICB code 5510)
    - Step 2: Rank the remaining companies by Carbon Intensity.
    - Step 3: From the remaining universe from step 2, exclude the 10% companies with the highest Carbon Intensities.

6. STOXX Global Climate Change Leaders Index:
    - Components are selected from the CDP A-List (formerly also known as the CDP Climate Performance Leadership) dataset. For more details, see https://www.cdp.net/en-US/Pages/disclosure-analytics.aspx.
    - Since the CDP Climate A-list may contain constituents which fall outside the STOXX Global 1800 universe, the universe has been extended to the STOXX Global Total Market index universe. Should a company from the A-list not be contained within the

STOXX Global Total Market index, it will be excluded and will not be eligible for the index.

Weighting scheme:
Price weighted with a weight factor based on the free-float market capitalization multiplied with the corresponding Z-score carbon intensity factor of each constituent:

Determination of free-float market capitalization weights:

$$w_{it} = \frac{p_{it} \cdot n_{it} \times ff_{it}}{\sum_{i=1}^{n} p_{it} \cdot n_{it} \times ff_{it}}$$

w_{it} = Free Float Market Capitalization weight of company (*i*) at time (*t*)
p_{it} = Price of company (*i*) at time (*t*)
n_{it} = Number of shares of company (*i*) at time (*t*)
ff_{it} = Free-float factor of company (*i*) at time (*t*)
n_{it} = Number of shares

Step 1: For the Low Carbon, blue chip, reported data, global ex countries and ex regions and global and regional low carbon footprint indices:
Calculate the Z-Score for the *sample* (the sample mean & standard deviation are calculated):

$$z_{it} = \frac{x_{it} - \overline{X}_s}{S_s}$$

z_{it} = Z-Score for company (i) at time (t)
x_{it} = Carbon Intensity value for company (i) at time (t)
$\overline{X}_s$ = Mean of the sample
S_s = Standard Deviation of the sample

For the STOXX Global Climate Change Leaders and the EURO STOXX 50 Low Carbon index:
Calculate the Z-Score for the *population* (the population mean & standard deviation are calculated):

$$z_{it} = \frac{x_{it} - \overline{X}_p}{S_p}$$

z_{it} = Z-Score for company (i) at time (t)
x_{it} = Carbon Intensity value for company (i) at time (t)
$\overline{X}_p$ = Mean of the population
S_p = Standard Deviation of the population

Step 2: Free-float market capitalization multiplied with the corresponding Z-score carbon intensity factor of each constituent:
For negative Z-scores (these companies will be over-weighted):

13. STOXX THEME INDICES

$$Wz_{it:z<0} = w_{it} * (1 - z_{it})$$

For positive Z-scores (these companies will be under-weighted):

$$Wz_{it:z\geq 0} = w_{it} * \left(\frac{1}{1 + z_{it}}\right)$$

Step 3: Weights from Step 2 needs to be normalized to 100:

$$W_{it} = \left(\frac{Wz_{it}}{\sum Wz_{it}}\right)$$

Step 4: Calculate the weighting factor for each component:
Weighting factor = W_{it} * (100,000,000,000,000 / closing price of the stock in EUR), rounded to integers.

For the Equally Weighted indices:
All components are equal-weighted. The weighting factors are published on the second Friday of the quarter, one week prior to quarterly review implementation using Thursdays' closing prices.

Weighting Cap factors:
All indices are subject to a 5% capping per component and the equal-weighted versions are rebalanced quarterly to equal weights.

Review frequency:
The components are reviewed annually in December since carbon data only becomes available annually, during October or November, when published by CDP. In the event that CDP is not able to provide data to STOXX by the cut-off date of first week of December preceding the review in December, the review would take place during the following quarterly review in March.
Shares, Free Float, weight factor (based on the free-float market capitalization multiplied with the corresponding Z-score carbon intensity factor) and Cap Factors are reviewed quarterly.

13.4.3. ONGOING MAINTENANCE

Replacements:
Deleted companies are not replaced. If a company is deleted from the STOXX Global 1800 index, but remains in the STOXX Global Total Market index, the stock will not be excluded from the STOXX Low Carbon indices.

Fast exit:
Not applicable.

Fast entry:
Not applicable.

Spin-offs:
A spin-off is added temporarily for one trading day and is then removed from the index.

13.5. STOXX CLIMATE IMPACT AND CLIMATE AWARENESS

13.5.1. OVERVIEW

The STOXX Climate Impact Ex Global Compact and Controversial Weapons and STOXX Climate Impact Ex Global Compact, Controversial Weapons and Tobacco indices will include companies with CDP Performance Bands A to B- (pre-2016 Performance Band A to B). Band A and A- includes companies that are seen as leading companies in terms of climate change: these companies are disclosing particular “actions” which mark them as leaders, as well as high scores across all other levels of the CDP Scoring matrix. Scoring requires detailed company-specific explanations. Band B and B- includes companies that “manage” climate change: companies seek evidence of climate actions implemented and requires company-specific understanding of climate change related issues.

The STOXX Climate Awareness Ex Global Compact and Controversial Weapons and STOXX Climate Awareness Ex Global Compact, Controversial Weapons and Tobacco indices will include companies with a CDP Performance Band A to C- (pre-2016 Performance Band A to C). In addition to the description above of Band A and B, Band C and C- identifies companies who have looked at implications of climate change for, and on, their business and recognizes a high level, contextual knowledge of environmental issues.

All versions will exclude companies that are non-compliant based on the Sustainalytics Global Standards Screening (GSS) assessment or are involved in Controversial Weapons activities, as identified by Sustainalytics. Additionally, a version will be available that adds an additional exclusion for the sub-sector Tobacco (Effective up until Septemeber 2020, ICB Code 3785. Effective with Septemeber 2020, ICB Code 45103010). The Coal sector (Effective up until Septemeber 2020, ICB Code 1771. Effective with Septemeber 2020, ICB Code 60101040) is always excluded from STOXX Low Carbon indices.

Universe:
For the Ex Global Compact Principles and Controversial Weapons indices: all securities from the STOXX Global 1800 index, excluding the Coal sector (Effective up until Septemeber 2020, ICB Code 1771. Effective with Septemeber 2020, ICB Code 60101040). Companies without a CDP Performance Band between A and C- will not be included in the index.

For the Ex Global Compact Principles, Controversial Weapons and Tobacco indices, the universe will be all securities fro]m the STOXX Global 1800 index, excluding the Coal sector (Effective up until Septemeber 2020, ICB Code 1771. Effective with Septemeber 2020, ICB Code 60101040) as well as the Tobacco sector (Effective up until Septemeber 2020, ICB Code 3785. Effective with Septemeber 2020, ICB Code 45103010).

Only companies that will be a constituent of the STOXX Global 1800 index when the selection list is published in November each year will be considered for the annual review performed in December.

Weighting scheme:
Indices are price weighted with a weight factor based on the free-float market capitalization percentage weight multiplied with the corresponding Z-score carbon intensity factor of each constituent.

All indices are subject to a 5% capping per component

Base value and date:
100 on 24 December 2012
Index types and currencies:
Price, net and gross return in EUR and USD.

13.5.2. INDEX REVIEW

Selection list:
For the Climate Impact Ex Global Compact and Controversial Weapons Indices: from the STOXX Global 1800 index, exclude the Coal sector (Effective up until Septemeber 2020, ICB Code 1771. Effective with Septemeber 2020, ICB Code 60101040). For the Climate Impact Ex Global Compact Principles, Controversial Weapons and Tobacco Indices: from the STOXX Global 1800 index, exclude the Coal sector (Effective up until Septemeber 2020, ICB Code 1771. Effective with Septemeber 2020, ICB Code 60101040) and the Tobacco sector (Effective up until Septemeber 2020, ICB Code 3785. Effective with Septemeber 2020, ICB Code 45103010). In both cases, exclude companies that are non-compliant based on the Global Standards Screening assessment or are involved in Controversial Weapons, as identified by Sustainalytics.

For the Climate Awareness Ex Global Compact and Controversial Weapons Indices: from the STOXX Global 1800 index, exclude the Coal sector (Effective up until Septemeber 2020, ICB Code 1771. Effective with Septemeber 2020, ICB Code 60101040). For the STOXX Climate Awareness Ex Global Compact Principles, Controversial Weapons and Tobacco Indices: from the STOXX Global 1800 index, exclude the Coal sector (Effective up until Septemeber 2020, ICB Code 1771. Effective with Septemeber 2020, ICB Code 60101040) and the Tobacco sector (Effective up until Septemeber 2020, ICB Code 3785. Effective with Septemeber 2020, ICB Code 45103010). In both cases, exclude companies that are non-compliant based on the Global Standards Screening assessment or are involved in Controversial Weapons, as identified by Sustainalytics.

Only companies that will be a constituent of the STOXX Global 1800 index when the selection list is published in November each year will be considered for the annual review performed in December.

Component selection:
For the STOXX Climate Impact Ex Global Compact and Controversial Weapons Indices: from the selection list, exclude companies identified as non-compliant based on Sustainalytics Global Standards Screening assessment, or are involved in Controversial Weapons. Select all remaining companies with a CDP Performance Band between A and B-.

For the STOXX Climate Impact Ex Global Compact, Controversial Weapons and Tobacco Indices: from the selection list, exclude companies identified as non-compliant based on Sustainalytics Global Standards Screening assessment, or are involved in Controversial Weapons. Select all remaining companies with a CDP Performance Band between A and B-.

For the STOXX Climate Awareness Ex Global Compact and Controversial Weapons Indices: from the selection list exclude companies identified as non-compliant based on Sustainalytics Global

Standards Screening assessment, or are involved in Controversial Weapons. Select all remaining companies with a CDP Performance Band between A and C-.

For the STOXX Climate Awareness Ex Global Compact, Controversial Weapons and Tobacco Indices: from the selection list exclude companies identified as non-compliant based on Sustainalytics Global Standards Screening assessment, or are involved in Controversial Weapons. Select all remaining companies with a CDP Performance Band between A and C-.

Only companies that will be a constituent of the STOXX Global 1800 index when the selection list is published in November each year will be considered for the annual review performed in December.

Weighting scheme:
Price weighted with a weight factor based on the free-float market capitalization percentage weight multiplied with the corresponding Z-score carbon intensity factor of each constituent:

Step 1: Calculate the Z-Score for the population (the population mean & standard deviation are calculated):

$$z_{it} = \frac{x_{it} - \overline{X}_p}{S_p}$$

z_{it} = Z-Score for company (i) at time (t)
x_{it} = Carbon Intensity value for company (i) at time (t)
$\overline{X}_p$ = Mean of the population
S_p = Standard Deviation of the population

Step 2: Free-float market capitalization percentage weight (as per usual STOXX calculation methodology) multiplied with the corresponding Z-score carbon intensity factor of each constituent:

1) For negative Z-scores (these companies will be over-weighted):
$$Wz_{it:z<0} = w_{it} * (1 - z_{it})$$

2) For positive Z-scores (these companies will be under-weighted):
$$Wz_{it:z\geq 0} = w_{it} * \left(\frac{1}{1 + z_{it}}\right)$$

Step 3: Weights from Step 2 needs to be normalized to 100%:

$$W_{it} = \left(\frac{Wz_{it}}{\sum Wz_{jt}}\right)$$

Step 4: Calculate the weighting factor for each component:
Weighting factor = W_{it} * (100,000,000,000,000 / closing price of the stock in EUR), rounded to integers.

Weighting Cap factors:

All indices are subject to a 5% capping per component.

Review frequency:
The components are reviewed annually in December when data becomes available from CDP. In the event that CDP is not able to provide data to STOXX by the cut-off date of first week of December preceding the review in December, the review would take place during the following quarterly review in March.

Shares, Free Float, weight factor (based on the free-float market capitalization multiplied with the corresponding Z-score carbon intensity factor) and Cap Factors are reviewed quarterly.

13.5.3. ONGOING MAINTENANCE

Replacements:
Deleted companies are not replaced. If a company is deleted from the STOXX Global 1800 index, but remains in the STOXX Global Total Market index, the stock will not be excluded from the relevant index. If a constituent is deleted, it's weight will be distributed among the remaining constituents in proportion to their weight.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent's weight will be distributed among the remaining constituents.

Fast entry:
Not applicable.

Spin-offs:
A spin-off is added temporarily for one trading day and is then removed from the index.

Mergers and takeovers:
Standard STOXX process.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com.

14. STOXX SUSTAINABILITY INDICES

14.1. STOXX EUROPE SUSTAINABILITY INDICES

14.1.1. OVERVIEW

Universe: The index universe is defined by the STOXX Europe 600.

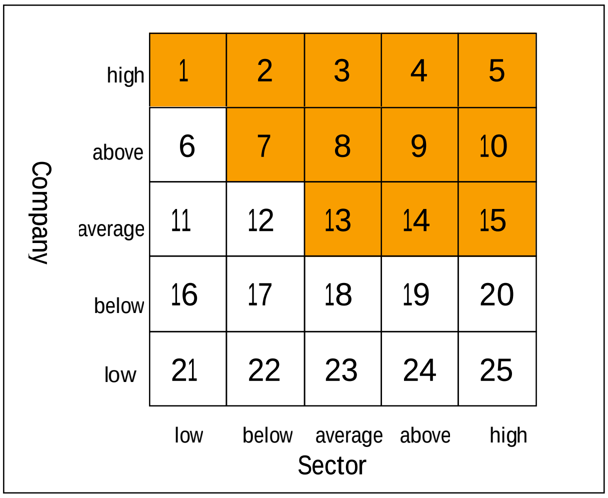
Weighting scheme: The index is free-float market capitalization weighted.
Base value and date: 100 as of 31 December 1998.
Index types and currencies: Price, net return in EUR and USD.
For a complete list please consult the data vendor code sheet on the website[22].

14.1.2. INDEX REVIEW

Component selection

Components are selected from the STOXX Europe 600 indices according to their sustainability rating (combination of company and sector rating). All companies with a positive sustainability rating will be included in the index. A rating is defined as positive, if the combination of the company and the sector rating result in a shaded matrix field of the Sarasin Sustainability Matrix.
In deviation from Bank J. Safra Sarasin's standard approach, STOXX is including tobacco, adult entertainment and defense & armament in the universe for STOXX Europe Sustainability and EURO STOXX Sustainability. These criteria are considered for exclusion in the indices STOXX Europe/ EURO STOXX Sustainability ex AGTAF/ ex AGTAFA respectively.

Sarasin Sustainability Matrix®



Review frequency: The index is reviewed annually in September.

Weighting cap factors: The index is free-float market capitalization weighted without cappings.

[22] http://www.STOXX.com/download/indices/vendor_codes.xls

14. STOXX SUSTAINABILITY INDICES

Derived indices: The EURO STOXX Sustainability Index is a subset of the STOXX Europe Sustainability Index covering only Eurozone countries.

14.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced in the STOXX Sustainability indices.

Fast Exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off companies are not added permanently.

14. STOXX SUSTAINABILITY INDICES

14.2. STOXX EUROPE SUSTAINABILITY EX AGTAF/ EX AGTAFA

14.2.1. OVERVIEW

Universe: The index universe is defined by the STOXX Europe 600 Index excluding the sectors alcohol, gambling, tobacco, armaments, firearms (AGTAF) and adult entertainment (AGTAFA)

Weighting scheme: The index is free-float market capitalization weighted.
Base value and date: 100 on December 31, 1998.
Index types and currencies: Price, net return in EUR and USD.
For a complete list please consult the data vendor code sheet on the website[23].

14.2.2. INDEX REVIEW

Component selection: Components are selected from the STOXX Europe Sustainability indices. Based on the Sarasin industry classification all companies which gain less than 5% of their revenues in the industries alcohol, gambling, tobacco, armaments, firearms (AGTAF) and / or adult entertainment (AGTAFA) are included in the index.
In deviation from Bank J. Safra Sarasin's standard approach, STOXX is including tobacco, adult entertainment and defense & armament in the universe for STOXX Europe Sustainability and EURO STOXX Sustainability. These criteria are considered for exclusion in the indices STOXX Europe/ EURO STOXX Sustainability ex AGTAF/ ex AGTAFA respectively.

Review frequency: The index is reviewed annually in September.
Weighting cap factors: The indices are free-float market capitalization weighted without cappings.

Derived indices: The EURO STOXX Sustainability Index ex AGTAF/ ex AGTFA Index covers only the following countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

14.2.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced in the STOXX Sustainability indices.

Fast Exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off companies are not added permanently.

[23] http://www.STOXX.com/download/indices/vendor_codes.xls

14. STOXX SUSTAINABILITY INDICES

14.3. STOXX SUSTAINABILITY BLUE-CHIPS

14.3.1. OVERVIEW

European sustainable blue-chip companies are included in the STOXX Europe Sustainability 40 Index and Eurozone companies in the EURO STOXX Sustainability 40 Index.

Universe: The indices are derived from the STOXX Europe Sustainability and the EURO STOXX Sustainability indices.

Weighting scheme: The indices are price-weighted.
Base value and date: 100 as of 31 December 1998.
Index types and currencies: Price, net return in EUR and USD.
For a complete list please consult the data vendor code sheet on the website[24].

14.3.2. INDEX REVIEW

Component selection: Components are selected from the STOXX Europe Sustainability / EURO STOXX Sustainability indices. All companies are ranked according to their free-float market capitalization. The top 40 companies are selected, however, only a maximum of five companies per supersector can be included in the index.

Review frequency: The index is reviewed annually in September.

Weighting cap factors: Constituents are weighted according to the value of the company rating (score). The score is normalized by the maximum score of all eligible companies.
A weighting cap factor is calculated as follows: 1.000.000.000 x initial weight / closing price of stock, where the initial weight is calculated as normalized score/ sum of normalized score of each constituent. Each component's weight is than calculated as: closing price (EUR) x weighting factor. Component weight are not capped.

Derived indices: Not applicable.

14.3.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced in the STOXX Sustainability indices.

Fast Exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off companies are not added permanently.

[24] http://www.STOXX.com/download/indices/vendor_codes.xls

14.4. STOXX ESG IMPACT INDICES

14.4.1. OVERVIEW

The STOXX ESG Impact Indices offer a broad market exposure that is tilted towards companies that score better with respect to a small set of environmental, social, and governance (ESG) KPIs. A global and a US version exist.

Universe: The universe are the STOXX Global 1800 Index and the US companies in the STOXX Global 1800 Index respectively.

Weighting scheme: The indices are weighted by free-float market cap combined with a cap factor that depends on a company's aggregate ESG KPI score. All components are subject to a cap of 5%.

Base values and dates: 1000 on May 18, 2016.

Dissemination calendar: STOXX Americas calendar

14.4.2. INDEX REVIEW

Component list and weighting: Effective up until September 2020 review, in a first step, all companies that are non-compliant based on Sustainalytics Global Standards Screening (GSS) assessment, are involved in Controversial Weapons, or are coal miners (ICB Subsector 1771) are excluded from the universe. Effective with September 2020 review, in a first step, all companies that are non-compliant based on Sustainalytics Global Standards Screening (GSS) assessment, are involved in Controversial Weapons, or are coal miners (ICB Subsector 60101040) are excluded from the universe.
Secondly, for all remaining companies, 5 KPIs are determined and standardized by industry[25]. The standardized KPIs are aggregated using a linear combination with coefficients as stated in the table below.

KPI	Coefficient
CDP emission reduction target (binary)	0.4
% of independent board members	0.05
% women on the board	0.3
Policy against child labor (binary)	0.4
Golden 'chute agreement (binary)	-0.3

Thirdly, all companies with an ESG score greater or equal to the median ESG score build up the composition list.

[25] For each company the average KPI within its ICB industry is subtracted and the result is divided by the standard deviation of the KPI within its industry. Afterwards companies without a KPI are assigned the mean (0).

14. STOXX SUSTAINABILITY INDICES

The companies on the composition list are grouped into quintiles by their respective aggregated ESG score and are assigned cap factors ranging from 1.5 (higher score) to 0.5 (lower score) in 0.25 increments.
The companies are weighted by the product of their free-float market cap and the cap factor:

$$w_i = \frac{ffmcap_i \cdot cf_i}{\sum_{j\ in\ comp.list} ffmcap_j \cdot cf_j}$$

For the global version, country weights are capped to not deviate from those of the universe by more than one percentage point (1%).

Components are capped to a maximum weight of 5%.

Review frequency: The indices are reviewed and rebalanced quarterly. The data cut-off date is the last business day of the month preceding the review month.

14.4.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Global 1800 are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-offs are not added permanently.
Mergers and takeovers: The original stock is replaced by the surviving stock.

14. STOXX SUSTAINABILITY INDICES

14.5. STOXX REGIONAL INDUSTRY NEUTRAL ESG AND STOXX REGIONAL EXCLUDING TOBACCO INDUSTRY NEUTRAL ESG INDICES

14.5.1. OVERVIEW

The STOXX Regional Industry Neutral ESG and STOXX Regional Excluding Tobacco Industry Neutral ESG indices track the performance of the leading companies with regard to Environmental, Social and Governance criteria, based on ESG indicators based on a transparent rating model as provided by Sustainalytics.

Universe:
The index universe is defined by all the stocks included in the STOXX Global 1800 Index, as observed on the review effective date. Companies without a rating will not be included in the index.

Weighting scheme:
Free Float Market Cap with a capping algorithm to calculate component weights so that the ICB Industry weight of the index is similar to the ICB Industry weight of the Benchmark.

Base values and dates:
100 on 24 September 2012.

14.5.2. INDEX REVIEW

Selection list:
All securities from the STOXX Global 1800 index. Companies without a rating will not be included in the index.

Before starting with the selection process a set of exclusion criteria are applied.

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

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

The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company

» >10% of voting rights of a company is owned by the involved company

Effective up until September 2020 review, additionally, for the STOXX Europe Excluding Tobacco Industry Neutral ESG and STOXX North America Excluding Tobacco Industry Neutral ESG indices, the sub-sector Tobacco (ICB Code 3785) is also excluded. Effective with September 2020 review, additionally, for the STOXX Europe Excluding Tobacco Industry Neutral ESG and STOXX North America Excluding Tobacco Industry Neutral ESG indices, the sub-sector Tobacco (ICB Code 451030) is also excluded.

Component selection:

- **Regional Unbiased Industry Neutral ESG indices**

Regional Industry Neutral ESG indices for Europe and North America are created by selecting companies with an Environmental (E), Social (S) and Governance (G) score >=50 for each of the E, S & G criteria, from the dataset as provided by Sustainalytics.

For the STOXX Europe Industry Neutral ESG and STOXX North America Industry Neutral ESG all companies fulfilling the requirements are selected.

The STOXX Europe Industry Neutral ESG 200 & 250 and the STOXX North America Industry Neutral ESG 150 & 200 indices are selected from the constituents of the broad indices (STOXX Europe Industry Neutral ESG and STOXX North America Industry Neutral ESG). For each constituent, Sustainalytics provides a Total Rating Score.

For the universe of the broad indices, rank the companies in descending order in terms of the Total Rating Score, i.e. from the highest to the lowest Total Rating Score.

For the Europe versions, select the top 200 and 250 companies. In the event where the 200th or 250th constituents have identical Total Rating Scores, the constituent with the highest free float market capitalization is selected.

For the North America versions, select the top 150 and 200 companies. In the event where the 150th or 200th constituents have identical Total Rating Scores, the constituent with the highest free float market capitalization is selected.

The following versions of the indices are available:

Benchmark Index	Associated ESG Index
STOXX Europe 600 Index	STOXX Europe Industry Neutral ESG STOXX Europe Industry Neutral ESG 200 STOXX Europe Industry Neutral ESG 250
STOXX North America 600 Index	STOXX North America Industry Neutral ESG STOXX North America Industry Neutral ESG 150 STOXX North America Industry Neutral ESG 200

- **Regional Excluding Tobacco Industry Neutral ESG indices**

14. STOXX SUSTAINABILITY INDICES

Effective up until September 2020 review, from the universe, exclude all companies from the sub-sector Tobacco (ICB Code 3785). Effective with September 2020 review, from the universe, exclude all companies from the sub-sector Tobacco (ICB Code 451030). Regional Excluding Tobacco Industry Neutral ESG indices for Europe and North America are created by selecting companies with an Environmental (E), Social (S) and Governance (G) score >=50 for each of the E, S & G criteria, from the dataset as provided by Sustainalytics.

For the STOXX Europe Excluding Tobacco Industry Neutral ESG and STOXX North America Excluding Tobacco Industry Neutral ESG all companies fulfilling the requirements are selected.

The STOXX Europe Excluding Tobacco Industry Neutral ESG 200 & 250 and the STOXX North America Excluding Tobacco Industry Neutral ESG 150 & 200 indices are selected from the constituents of the broad indices (STOXX Europe Excluding Tobacco Industry Neutral ESG and STOXX North America Excluding Tobacco Industry Neutral ESG). For each constituent, Sustainalytics provides a Total Rating Score.

For the universe of the broad indices, rank the companies in descending order in terms of the Total Rating Score, i.e. from the highest to the lowest Total Rating Score.

For the Europe Excluding Tobacco versions, select the top 200 and 250 companies. In the event where the 200th or 250th constituents have identical Total Rating Scores, the constituent with the highest free float market capitalization is selected.

For the North America Excluding Tobacco versions, select the top 150 and 200 companies. In the event where the 150th or 200th constituents have identical Total Rating Scores, the constituent with the highest free float market capitalization is selected.

The following versions of the indices are available:

Benchmark Index	Associated ESG Index
STOXX Europe 600 Index	STOXX Europe Ex Tobacco Industry Neutral ESG STOXX Europe Ex Tobacco Industry Neutral ESG 200 STOXX Europe Ex Tobacco Industry Neutral ESG 250
STOXX North America 600 Index	STOXX North America Ex Tobacco Industry Neutral ESG STOXX North America Ex Tobacco Industry Neutral ESG 150 STOXX North America Ex Tobacco Industry Neutral ESG 200

Weighting scheme:

All components are free float market cap weighted with an capping algorithm which delivers an ICB Industry Neutral weighting compared to the benchmark, on a quarterly basis. The weightings are published on the second Friday of each quarter, one week prior to quarterly review implementation using Thursday’s closing prices.

Determination of free-float market capitalization weights:

14. STOXX SUSTAINABILITY INDICES

$$w_{it} = \frac{p_{it} \times n_{it} \times ff_{it}}{\sum_{i=1}^{n} p_{it} \times n_{it} \times ff_{it}}$$

wit = Free Float Market Capitalization weight of company (i) at time (t)
pit = Price of company (i) at time (t)
nit = Number of shares of company (i) at time (t)
ffit = Free-float factor of company (i) at time (t)
nit = Number of shares

Weighting Cap factors:
A capping algorithm is applied to calculate component weights so that the ICB Industry weight of the index is similar to the ICB Industry weight of the Benchmark.

Review frequency:
The components are reviewed annually in September. Shares, Free Float, and Capping are reviewed quarterly. For the capping procedure, the benchmark is defined as the new composition of the STOXX Europe 600 and STOXX North America 600 which becomes effective on the review date on the 3rd Friday of March, June, September and December.

14.5.3. ONGOING MAINTENANCE

Replacements:
Deleted companies are not replaced. If a company is deleted from the STOXX Global 1800 index, but remains in the STOXX Global Total Market index, the stock will not be excluded from the relevant Regional or Regional Excluding Tobacco ESG index. If a constituents is deleted, it's weight will be distributed among the remaining constituents.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent's weight will be distributed among the remaining constituents.

Fast entry:
Not applicable.

Spin-offs:
A spin-off is added temporarily for one trading day and is then removed from the index.

Mergers and takeovers:
Standard STOXX process.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

14.6. STOXX EUROPE 600 ESG-X INDEX

14.6.1. OVERVIEW

The objective of the STOXX Europe 600 ESG-X index is to reflect the STOXX Europe 600 index with standardized ESG exclusion screens applied for Global Standards Screening, Controversial Weapons, Thermal Coal and Tobacco Producers, with the aim of taking responsible investment criteria into account.

Universe: STOXX Europe 600

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base values and dates: 100 on March 19, 2012.

For a complete list please consult the data vendor code sheet on the website[26]. Customized solutions can be provided upon request.

Index types and currencies: Price, net return and gross return in EUR and USD.

Dissemination calendar: STOXX Europe calendar

14.6.2. INDEX REVIEW

Selection list:
From the universe, a set of exclusion criteria are applied which follow the Global Standards Screening assessment, a set of definitions for Controversial Weapons, Tobacco and Coal.

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

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

The criteria for involvement are:
» Internal production or sale of controversial weapons

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[26] http://www.STOXX.com/download/indices/vendor_codes.xls

» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

Tobacco:
STOXX will exclude companies that Sustainalytics identifies to be tobacco producers (0% revenue threshold).

Thermal Coal:
STOXX will exclude companies that Sustainalytics identifies to have:
»>25% revenues from thermal coal extraction (including thermal coal mining and exploration)
»>25% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants).

Composition list: The composition list will consist of the companies that remain from the selection list once all the exclusion criteria have been applied.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December. The review cut-off date is the last dissemination day of the month preceding the review month.

Weighting cap factors: Components are capped at a maximum weight of 20%.

Derived indices: None.

14.6.3. ONGOING MAINTENANCE

Replacements:
Deleted companies are not replaced.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent's weight will be distributed among the remaining constituents.

Fast entry:
Not applicable.

Spin-offs:
A spin-off is added temporarily for one dissemination day and is then removed from the index.

Mergers and takeovers:
Standard STOXX process.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

14. STOXX SUSTAINABILITY INDICES

14.7. STOXX BENCHMARK ESG-X INDICES

14.7.1. OVERVIEW

The objective of the STOXX Benchamark ESG-X indices is to reflect STOXX Benchmark Indices with standardized ESG exclusion screens applied for Global Standards Screening, Controversial Weapons, Thermal Coal and Tobacco Producers, with the aim of taking responsible investment criteria into account.

STOXX total market ESG-X indices
STOXX Australia Total Market ESG-X
STOXX Germany Total Market ESG-X
EURO STOXX Total Market ESG-X
STOXX Europe Total Market ESG-X
STOXX Developed Markets Total Market ESG-X
STOXX Nordic Total Market ESG-X
EURO STOXX Total Market Large ESG-X
EURO STOXX Total Market Mid ESG-X
STOXX Developed Markets Total Market Large ESG-X
STOXX Developed Markets Total Market Mid ESG-X
STOXX Emerging Markets Total Market Large ESG-X
STOXX Emerging Markets Total Market Mid ESG-X

STOXX country ESG-X indices
STOXX Australia 150 ESG-X
STOXX Canada 60 ESG-X
STOXX Canada 240 ESG-X
STOXX France 90 ESG-X
STOXX Italy 45 ESG-X
STOXX Japan 600 ESG-X
STOXX Singapore 75 ESG-X
STOXX Spain 30 ESG-X
STOXX UK 180 ESG-X
STOXX USA 500 ESG-X
STOXX USA 900 ESG-X

STOXX regional ESG-X indices
EURO STOXX 50 ESG-X
EURO STOXX ESG-X
STOXX Europe 50 ESG-X
STOXX Nordic 30 ESG-X
STOXX North America 600 ESG-X
STOXX Asia/Pacific 600 ESG-X
STOXX Global 1800 ESG-X
STOXX Global 3000 ESG-X
STOXX Developed Markets 2400 ESG-X
STOXX Emerging Markets 50 ESG-X

STOXX Emerging Markets 800 LO ESG-X
STOXX Emerging Markets 1500 ESG-X
EURO STOXX Large ESG-X
EURO STOXX Mid ESG-X
EURO STOXX Small ESG-X
STOXX Europe Large 200 ESG-X
STOXX Europe Mid 200 ESG-X
STOXX Europe Small 200 ESG-X
EURO STOXX Banks ESG-X
STOXX Europe 600 Banks ESG-X

Universe: The index universe is defined by the corresponding STOXX benchmark index.

Base values and dates: 100 on March 19, 2012 for all indices except for the STOXX Emerging Markets ESG-X indices, which have base values of 100 on December 21, 2012

Index types and currencies: Price, net return and gross return in EUR and USD. Local currency versions available for some country indices

Dissemination calendar: STOXX Europe calendar, except for STOXX USA 500 ESG-X Index, which relies on the STOXX Americas Calendar

14.7.2. INDEX REVIEW

Selection list:
From the universe, a set of exclusion criteria are applied which follow the Global Standards Screening assessment, a set of definitions for Controversial Weapons, Tobacco and Coal.

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

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

The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

14. STOXX SUSTAINABILITY INDICES

Tobacco:
STOXX will exclude companies that Sustainalytics identifies to be tobacco producers (0% revenue threshold).

Thermal Coal:
STOXX will exclude companies that Sustainalytics identifies to have:
»>25% revenues from thermal coal extraction (including thermal coal mining and exploration)
»>25% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants).

Composition list: The composition list will consist of the companies that remain from the selection list once all the exclusion criteria have been applied.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December. The review cut-off date is the last dissemination day of the month preceding the review month.

Weighting cap factors: All components are capped at a maximum weight of 20%, except for the EURO STOXX 50 ESG-X components, which are capped at 10%.

Derived indices: None.

14.7.3. ONGOING MAINTENANCE

Replacements:
Deleted companies are not replaced.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent’s weight will be distributed among the remaining constituents.

Fast entry:
Not applicable.

Spin-offs:
A spin-off is added temporarily for one dissemination day and is then removed from the index.

Mergers and takeovers:
Standard STOXX process.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

14.8. EURO STOXX 50 ESG INDEX

14.8.1. OVERVIEW

The objective of the EURO STOXX 50 ESG index is to reflect the EURO STOXX 50 index with standardized ESG exclusion screens applied for Global Standards Screening, Controversial Weapons, Thermal Coal and Tobacco Producers. Furthermore, 10% of companies (based on number of holdings) with the lowest ESG scores are excluded and are replaced by companies with a higher ESG score from the same ICB Supersector as the excluded companies.

Universe: EURO STOXX

Weighting scheme: The indices are weighted according to free-float market capitalization.

Base values and dates: 100 on March 19, 2012.

For a complete list please consult the data vendor code sheet on the website[27]. Customized solutions can be provided upon request.

Index types and currencies: Price, net return and gross return in EUR and USD.

Dissemination calendar: STOXX Europe calendar

14.8.2. INDEX REVIEW

Selection list:
Step 1:
From the EURO STOXX 50 index, exclude 10% of constituents (based on number of holdings) with the lowest ESG Scores. Constituents that are in the index, but do not have an ESG score, remain in the selection and are not considered for the 10% exclusion screen. In the event that companies that qualify for exclusion have the same ESG score, the company / companies with the smallest free float market capitalization(s), is / are excluded.

Step 2:
Apply a set of exclusion criteria to the universe (EURO STOXX, which includes the EURO STOXX 50), which follow the Global Standards Screening assessment, a set of definitions for Controversial Weapons, Tobacco Producers and Thermal Coal.

Global Standards Screening:
STOXX will exclude companies that are non-compliant based on the Sustainalytics Global Standards Screening assessment. Global Standards Screening identifies companies that violate or are at risk of violating commonly accepted international norms and standards, enshrined in the United Nations Global Compact (UNGC) Principles, the Organisation for Economic Co-operation

[27] http://www.STOXX.com/download/indices/vendor_codes.xls

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.

The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

Tobacco Producers:
STOXX will exclude companies that Sustainalytics identifies to be tobacco producers (0% revenue threshold).

Thermal Coal:
STOXX will exclude companies that Sustainalytics identifies to have:
»>25% revenues from thermal coal extraction (including thermal coal mining and exploration)
»>25% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants).

Step 3:
The replacement of excluded companies from Step 1 and Step 2, will be achieved in the following manner:
» Compile the list of companies that are excluded from Step 1 and Step 2; the possibility exists that companies excluded from Step 1 may also feature in the exclusions of Step 2, and will therefore be considered as part of the Step 1 exclusion.
» The exclusion list will contain both the ICB Supersector and ESG score of each company.
» The remaining companies of the screened universe (as per Step 2), are ranked per ICB Supersector in terms of free float market capitalization, from high to low, with each constituent displaying its corresponding ESG score.
» Each excluded company from the exclusion list is replaced by a company from the universe within the same ICB Supersector, where the replacement company has a higher ESG score than the excluded company. In the case where the eligible company / companies have the same ESG score, the company / companies with the highest free float market capitalization, is / are selected.
» In the event where a company with a high ESG score is excluded (mostly applicable to Step 2), and no component is available from the universe pertaining to the corresponding ICB Supersector that has a higher ESG score, the component with the same ESG score, or as close an ESG score to the excluded company as possible, with the highest free float market capitalization, will be selected.
» Each replacement constituent must have an ESG score > 50.

Composition list: The composition list will consist of the companies from the EURO STOXX 50 that remain after the exclusion criteria from Step 1 and Step 2 have been applied, together with the companies which have been selected as replacements from Step 3.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December. The review cut-off date is the last dissemination day of the month preceding the review month.

Weighting cap factors: Components are capped at a maximum weight of 10%.

Derived indices: None.

14.8.3. ONGOING MAINTENANCE

Replacements:
A deleted constituent is replaced immediately to maintain the fixed number of constituents. In keeping with the philosophy of the index, the replacement company must pass the criteria as described in “Step 2” of the Selection List in section 14.8.2 Index Review above.
In case of merger and acquisition where a blue-chip stock is involved, the original stock is replaced by the new stock. If a stock is deleted from the EURO STOXX in between the regular review dates but is still a component of the STOXX Regional TMI, then this stock will remain in the EURO STOXX 50 ESG index until the next regular review.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent will be replaced, following the process as described in “Step 3” of the Selection List in section 14.8.2 Index Review above, which will lead to a re-weighting of constituents’ weights.

Fast entry:
Not applicable.

Spin-offs:
Each spin-off stock qualifies for addition if it lies within the upper buffer (ranks 1 – 40) on the latest selection list for the index. The spin-off replaces the lowest ranked stock in that index as determined by the selection list.

Qualifying spin-off stocks are added in sequence:
» The largest qualifying spin-off stock replaces the original stock in the index.
» The next qualifying spin-off stock replaces the lowest ranked stock in the index.
» Likewise for the other qualifying spin-off stocks.

Mergers and takeovers:
Standard STOXX process.

14. STOXX SUSTAINABILITY INDICES

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

14.9. STOXX BENCHMARK ESG-X EX NUCLEAR POWER INDICES

14.9.1. OVERVIEW

The objective of the STOXX Benchmark ESG-X ex Nuclear Power Indices is to reflect STOXX Benchmark Indices with standardized ESG exclusion screens applied for Global Standards Screening, Controversial Weapons, Thermal Coal, Tobacco Producers and Nuclear Power, with the aim of taking responsible investment criteria into account.

STOXX country ESG-X ex Nuclear Power indices
STOXX Germany Total Market ESG-X ex Nuclear Power
STOXX USA 500 ESG-X ex Nuclear Power

STOXX regional ESG-X ex Nuclear Power indices
EURO STOXX ESG-X ex Nuclear Power
STOXX Europe 600 ESG-X ex Nuclear Power
STOXX Global 1800 ESG-X ex Nuclear Power

Universe: The index universe is defined by the corresponding STOXX benchmark ESG-X index.

Base values and dates: 100 on March 19, 2012.

Index types and currencies: Price, net return and gross return in EUR and USD.

Dissemination calendar: STOXX Europe calendar, except for STOXX USA 500 ESG-X ex Nuclear Power Index, which relies on the STOXX Americas Calendar

14.9.2. INDEX REVIEW

Selection list:

From the universe, a set of Nuclear Power exclusionary criteria are applied.

Nuclear Power:
STOXX will exclude companies that Sustainalytics identifies as having:
»>5% revenues from nuclear power production:
- Utilities that own/operate nuclear power generators
  Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power

»>5% revenues from nuclear power supporting products / services, including:
- Design and construction of nuclear power plants
- Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls
- Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;

- Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate

»>5% revenues from nuclear power distribution, including:

- The resale or distribution of electricity generated from nuclear power;
- This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix
  Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

Composition list: The composition list will consist of the companies that remain from the selection list once all the exclusion criteria have been applied.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December. The review cut-off date is the last dissemination day of the month preceding the review month.

Weighting cap factors: All components are capped at a maximum weight of 20%.

Derived indices: None.

14.9.3. ONGOING MAINTENANCE

Replacements:
Deleted companies are not replaced.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent's weight will be distributed among the remaining constituents.

Fast entry:
Not applicable.

Spin-offs:
A spin-off is added temporarily for one dissemination day and is then removed from the index.

Mergers and takeovers:
Standard STOXX process.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

14. STOXX SUSTAINABILITY INDICES

14.10. EURO STOXX ESG-X SELECT DIVIDEND 30 INDEX

14.10.1. OVERVIEW

The EURO STOXX ESG-X Select Dividend 30 index is derived from the EURO STOXX ESG-X index and selects 30 stocks which represent the highest-yielding stocks relative to their home markets in the respective benchmark index. The EURO STOXX ESG-X Index applies standardized ESG exclusion screens for Global Standard Screening, Controversial Weapons, Thermal Coal and Tobacco Producers, with the aim of taking responsible investment criteria into account.

Universe: EURO STOXX ESG-X

Weighting scheme: The index is price-weighted with a weighting factor based on the dividend yield.

Base values and dates: EURO STOXX ESG-X Select Dividend 30 Index: 100 on March 16, 2012.

Index types and currencies: Price, net and gross return in AUD, CAD, CHF, EUR, GBP, JPY and USD.

Dissemination calendar: STOXX Europe calendar

14.10.2. INDEX REVIEW

Selection list:
1. For the EURO STOXX ESG-X Select Dividend 30 index the components of the EURO STOXX ESG-X index and its secondary share lines are eligible.

2. Companies are screened for the following criteria:
- » Indicated annualized dividend (applies for components and non-components)
- » Non-negative dividend growth rate over the past five years (applies for non-components only)
- » Dividend payments in four out of five calendar years (applies for non-components only)
- » Non-negative payout ratio (applies for components and non-components)
- » Payout ratio of less than or equal to 60% (applies for non-components only)
- » A minimum level of liquidity, as described in the following section (applies for non-components only)
- » For companies that have more than one share line, the line with the higher dividend yield is chosen. If any of the share lines is a component, then the component share line is chosen.

3. To obtain the selection list all eligible companies are ranked according to an outperformance factor that is calculated as follows:
Net dividend yield of the company versus the net dividend yield of the corresponding home market defined on an index basis.

Liquidity screening for non-components
Depending on the belonging region of the index, the following parameters are considered:

Region	Threshold (EUR)	ADTV days
Eurozone	1,000,000,000	3

After defining N as the fixed number of components in the index, each i^{th} non-component stock is considered eligible - in terms of liquidity - if the following inequality holds:

$$ADTVi > \left(\frac{Threshold}{N}\right)\frac{1}{ADTV\ days}$$

where $ADTV_i$ represents the Average Daily Traded Value of the i^{th} non-component stock over the 3-month period ending on the month prior to the respective months of March, June, September and December.

Composition list:
EURO STOXX ESG-X Select Dividend 30
Coverage: the 30 highest-yielding companies relative to their home market (STOXX Regional/Country TMI) are selected from EURO STOXX ESG-X (plus secondary lines).

» Outperformance factor calculation: Net dividend yield of the company divided by the maximum of (STOXX Country TMI net dividend yield; EURO STOXX TMI net dividend yield) - 1

» Component selection: All current components ranked from 1 to 60 in the selection list will remain in the index. If the number of stocks is below 30, the highest ranked non-components are added until there are enough stocks.

Review frequency: The EURO STOXX ESG-X Select Dividend 30 index is reviewed on an annual basis in March.

Weighting cap factors: The factors are calculated based on net-dividend yields.

Weight determination:

$$w_i = \frac{\frac{D_i}{p_i}}{\sum_{j=1}^{N} \frac{D_j}{p_j}}$$

w_i	weight of company i
D_i	net dividend of company i
p_i	closing price of company i
D_j	net dividend of company j
p_j	closing price of company j
N	number of index components

Weighting cap factor = (1,000,000,000 x w_i / closing price of stock in EUR), rounded to integers.

The weighting factors are published on the second Friday in March, one week prior to quarterly review implementation using Thursday’s closing prices.

For the EURO STOXX ESG-X Select Dividend 30 index an additional cap factor of 15% applies. All weighting cap factors are reviewed quarterly.

14.10.3. ONGOING MAINTENANCE

Replacements: To maintain the number of components constant, a deleted stock is replaced with the highest-ranked non-component on the selection list. The selection list is updated on a quarterly basis according to the review component selection process.

If a company is deleted from the EURO STOXX ESG-X index between the EURO STOXX ESG-X Select Dividend 30 annual review dates, but is still a component of the EURO STOXX Total Market ESG-X, the stock will remain in the EURO STOXX ESG-X Select Dividend 30 index until the next annual review, provided that it still meets the requirements for the EURO STOXX ESG-X Select Dividend 30 index.

Fast exit:
If STOXX becomes aware of dividend data changes for the components of the EURO STOXX ESG-X Select Dividend 30 index the following index adjustments may occur. The timing of the index adjustment depends on the changes in the dividend data:

» If the company cancels one of its dividends: the company will be deleted from the index, the replacement announced immediately, implemented two trading days later and become effective the next trading day. The case of dividend cancellation does not apply to dividends whose payment is postponed within the same fiscal year. Dividends whose payment is postponed indefinitely or to a subsequent fiscal year are considered cancelled. In case a company pays its dividends for a fiscal year in tranches, after the first tranche has been paid, the cancellation of one or more remaining tranches or the postponement of their payment to a subsequent fiscal year is treated as a lowering of dividend.

» If the company lowers its dividend: the company will remain in the index until the next selection list is available. If the company is ranked above the lower buffer on this selection list (e.g. ranked from 1 to 60 for the EURO STOXX ESG-X Select Dividend 30 Index), it is retained. If it falls below the lower buffer (e.g. ranked 61 or below for the EURO STOXX ESG-X Select Dividend 30 Index), it is removed and replaced by the highest-ranked non-component on that selection list. The changes will be announced on the 5th trading day of the month together with the selection list and become effective on the first trading day after the third Friday of the month. The weight factors for the new components will be published on the quarterly underlying data announcement based on previous day closing prices.

In addition, If a component of the EURO STOXX ESG-X Select Dividend 30 is not a component of the EURO STOXX Total Market ESG-X after its quarterly review, that company is removed and replaced by the highest-ranked non-component on the next available selection list. The changes will be announced on the 5th trading day of the month together with the selection list and become effective on the first trading day after the third Friday of the month. The weight factors for the new components will be published on the quarterly underlying data announcement based on previous day closing prices.

Fast entry: Not applicable

Spin-offs: Spin-off stocks are not considered for immediate addition in the EURO STOXX ESG-X Select Dividend 30 index. If the original company has a significantly lower dividend after the spin-off, then its status will be reviewed for fast exit.

Mergers and takeovers: The original stock is replaced by the surviving stock, if it is ranked at or above the lower buffer limit of the current EURO STOXX ESG-X Select Dividend 30 selection list. If the stocks of the surviving company fall below the lower buffer limit, the original stocks are replaced with the highest-ranked non-component on the selection list.

Weighting factor calculation: Replacements are added with a weight corresponding to their dividend yield on the current selection list. The new component's dividend yield is weighted against the dividend yields of all companies of the index composition:

$$w_i = \frac{\frac{D_i}{p_i}}{\sum_{j=1}^{N} \frac{D_j}{p_j}}$$

w_i weight of replacement company i
D_i net dividend of replacement company i on cut-off date of current selection list
p_i closing price of replacement company i on cut-off date of current selection list
D_j net dividend of company j in the new index composition, on cut-off date of current selection list
p_j closing price of company j in the new index composition, on cut-off date of current selection list
N number of index components

$$wf_{it} = \frac{\frac{\sum_{j=1}^{N-k} wf_{jt} \cdot p_{jt} \cdot cf_{jt}}{(1 - \sum_{h=1}^{k} w_h)} \cdot w_i}{p_{it}}$$

wf_{it} new weighting factor of replacement i at time t
k number of replacements
t date of closing price for weighting factor calculation
N-k remaining index components (previous index composition minus the deleted companies)
wf_{jt} weighting factor of index component j at time t
p_{jt} price of index component j at time t
cf_{jt} weighting cap factor of index component j at time t
w_i weight of replacement company i
p_{it} price of replacement company i at time t

The remaining current components stay in the index with unchanged weighting factors.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

15. STOXX FAITH-BASED INDICES

15.1. STOXX EUROPE CHRISTIAN INDEX

15.1.1. OVERVIEW

The STOXX Europe Christian Index is designed to provide European equity market availability to investors who seek equity ownership in alignment with the moral and social teachings of the Christian religion (social, environmental, ethical and economic responsibility).

Universe: STOXX Europe 600

Weighting scheme: The index is weighted according to free-float market capitalization.

Base value and date: 100 on December 31, 2004.

Index types and currencies: Price and net return in EUR and USD.

15.1.2. INDEX REVIEW

Component selection
From the universe, a set of exclusion criteria are applied which follow the Global Standards Screening assessment, a set of definitions for Controversial Weapons as well as Product Involvement in certain areas of business (see table below).

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

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

The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

Product Involvement:
Furthermore, STOXX will exclude companies that Sustainalytics identifies to have revenues above the following thresholds, generated in the following areas of business:

Area of involvement	% Revenue Threshold
Pornography	5%
Small arms (civilian customers)	5%
Military contracting weapons	5%
Tobacco production	25%
Tobacco distribution	25%
Birth control, Abortion and HESC	0%
Gambling	25%

Composition list: The composition list will consist of the companies that remain from the selection list once all the exclusion criteria have been applied.

Review frequency: The STOXX Europe Christian index is reviewed on a semi-annual basis in June and December. The review cut-off date is the last dissemination day of the month preceding the review month.

Weighting cap factors: Components are capped at a maximum weight of 20%.

15.1.3. ONGOING MAINTENANCE

Deleted companies are not replaced.

Fast exit:
Not applicable.

Fast entry:
Not applicable.

Spin-offs:
A spin-off is added temporarily for one dissemination day and is then removed from the index.

Mergers and takeovers:
Standard STOXX process.

Corporate Actions:
All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

16. STOXX RISK BASED INDICES

16.1. STOXX MINIMUM VARIANCE AND MINIMUM VARIANCE UNCONSTRAINED INDICES

16.1.1. OVERVIEW

The STOXX Minimum Variance indices are based on benchmark indices, including the STOXX Global 1800 index, regional and country indices, but weighting will be done via a minimum variance optimization. The index family is designed as a strategic overlay on the existing global family of market-cap weighted STOXX indices. The aim will be to have these covering major regions, and then most major countries, still at the benchmark level.

Universe: The components of the STOXX Global 1800 Minimum Variance and STOXX Global 1800 Minimum Variance Unconstrained indices are selected from the STOXX Global 1800 index. Similarly, other STOXX [region] [number] Minimum Variance indices are derived from other STOXX [region] [number] benchmark indices.

Weighting scheme: The indices are price weighted according to a minimum variance optimization

Base values and date: 100 on May 04, 2012

Index types and currency: Price, net and gross return in EUR and USD. Further currency version for local countries available.
For a complete list please consult the data vendor code sheet on the website[28].

16.1.2. INDEX REVIEW

Component selection and weighting cap-factors:
The indices are derived from the STOXX regional country benchmark indices. Axioma’s Second-Order Cone with Branch-and-Bound Optimisation process is used.

For each benchmark index, there will be two different types of minimum variance overlays. The first will aim to optimize the portfolio with respect to variance, while not modifying other attributes (other factors, country/industry exposure) too much. That way the Minimum Variance index will be very similar to the parent benchmark index but with reduced variance, suitable for investors seeking a better benchmark or an improved version of a benchmark. The second version will have more loosely stated constraints and will aim seek to obtain a more raw minimum variance portfolio, suitable for investors seeking either an even superior benchmark or a good strategy index. Due to the optimization process the Minimum Variance indices may have less constituents than the original index.

The following indices use a revised optimization model for the Minimum Variance (“Tracking error constrained”) methodology:

[28] http://www.STOXX.com/download/indices/vendor_codes.xls

16. STOXX RISK BASED INDICES

Name
STOXX China A 900 Minimum Variance
STOXX Emerging Markets 800 LO Minimum Variance

Constraint	**Minimum Variance Unconstrained**	**Minimum Variance ("Regular")**	**Minimum Variance ("Tracking error constrained")**
Individual capping	4.5% / 8% / 35% Minimum 3 bps in post-processing	4.5% / 8% / 35% Minimum 3 bps in post-processing	4.5% / 8% / 35% Max(2%, weight in parent) Minimum 3 bps in post-processing
Effective number of assets	30% of parent benchmark	30% of parent benchmark	60% of parent benchmark
Rebalancing and max. turnover	Monthly, 5%	Quarterly, 7.5%	Quarterly, 5%
Country/industry exposure	None	Within 5% of parent benchmark	Within 5% of parent benchmark
Factor exposure (except Size/Volatility)	None	Within 0.25 std. dev. of parent benchmark	Within 0.25 std. dev. of parent benchmark
Tracking error	None	None	Within 5% w.r.t. parent benchmark
Max. number of names	None	None	Less or equal to Max(Min(Names in parent / 4, 500), 80)

Individual capping
We apply constraints such that maximum weights (5%/10%/40%) are not exceeded, whereby a component cannot have a weight more than 10%, and the sum of all those who have at least 5% cannot exceed 40%. By applying tighter constraints, we reduce the chance of breaching these figures, and reduce the gravity of the breaches if and when they occur.
The tracking error constrained version's methodology in addition limits the individual weights to the greater of the company's weight in the corresponding parent benchmark or 2%.

Effective number of assets
The effective number of assets of an index is the value, H, defined as:

$$H = \frac{1}{\sum w^2}$$

which gives an accurate measure of the number of assets that affect a portfolio. The number of components in an index that is weighted by optimisation must be defined along those lines as otherwise, we force the optimization to have many component with insignificant weights.
The constraint is defined as follows for the Unconstrained and regular index:

$$H_{MinVar} \geq H_{Base} \cdot 30\%$$

For the tracking error constrained version it is defined as:

$$H_{MinVar} \geq H_{Base} \cdot 60\%$$

Maximum turnover
The Unconstrained version has a 5% one-way turnover constraint, or 10% two-way. This means up to 5% of the portfolio is sold in order to purchase other components (absolute maximum annual turnover is 120%).

The regular versions have 7.5% one-way or 15% two-way (absolute maximum annual turnover is 60%).

The tracking error constrained version have 5% one-way or 10% two-way (absolute maximum annual turnover is 40%).

Minimum liquidity requirement
Recognizing that minimum variance portfolios may sometimes prefer to hold slightly less liquid stocks, the minimum liquidity requirement ensures that there is no material buildup in illiquid positions in certain segments of the portfolio.

The weighted average days-to-trade d_s for a given group of holdings S are defined as:

$$d_S = \sum_{i \in S} w_i \cdot \frac{h_i}{ADV_i}$$

where $h_i = w_i \cdot N$ represents the holdings for stock i and ADV_i represents its average 20-day average daily volume.

Stocks in the benchmark index are ranked by trading volume, and liquidity constraints are imposed on stocks in the two least liquid quintiles. For each of these quintiles Q, the weighted average days to trade of the positions therein is required to be no more than 10 times the weighted average days to trade of the same stocks held at corresponding benchmark weights.

$$\sum_{i \in Q} w_i \cdot \frac{w_i \cdot N}{ADV_i} \leq \gamma \cdot \sum_{i \in Q} b_i \cdot \frac{b_i \cdot N}{ADV_i}$$

Each position value has been rewritten in terms of the portfolio notional value N.
The parameter γ is set to 10.
b_i represents weights in the corresponding capitalization-weighted benchmark index.

Countries, Industries and Factors exposure
These constraints are not applied to the Unconstrained version.
The exposure to each country and industry is summed up for the parent benchmark index, and the percentage exposure of the Minimum Variance index has to be within 5% of those numbers.
The parent index' exposure to each factor is computed and the Minimum Variance is constrained to be within a quarter standard deviation of that.
These constraints make sure the Minimum Variance index is closely related in structure to the parent index, except for risk. Size is redundant as the parent index is a benchmark index excluding micro caps and most small caps.

Tracking error
The tracking error constrained version's tracking error is limited to a maximum of 5% with the exception of the Emerging Market version which has a 7% limit.

Maximum number of names
The tracking error constrained version's number of names in the index is limited to:

$$|\mathrm{MV}| \leq \mathrm{Max}\left(\mathrm{Min}\left(\frac{|\mathrm{BM}|}{4}, 500\right), 80\right)$$

where
|MV| = number of names in the Minimum Variance index
|BM| = number of names in the corresponding parent benchmark index

Review frequency
The Unconstrained versions are reviewed monthly (implementation of all changes after the close of the third Friday and effective the next trading day), all other indices rebalance quarterly, in sync with the parent index (implementation after the close of the third Friday and effective the next trading day in March, June, September and December).

Derived indices: Not applicable.

16.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not added permanently.

16. STOXX RISK BASED INDICES

16.2. STOXX CHINA A 900 MINIMUM VARIANCE UNCONSTRAINED AM

16.2.1. OVERVIEW

The STOXX China A 900 Minimum Variance Unconstrained AM (Accessible Market) index represents the shares available to foreign investors through Northbound Trading segments of the Shanghai-Hong Kong Stock Connect or Shenzhen-Hong Kong Stock Connect programs of its parent index STOXX China A 900 Minimum Variance Unconstrained.

Universe: The index universe is defined by the parent index, STOXX China A 900 Minimum Variance Unconstrained.

Weighting scheme: The indices are price weighted according to a minimum variance optimization.

Base values and dates: 100 on May 4, 2012

Index types and currencies: Price, net return, and gross return in EUR, USD, and CNY.

16.2.2. INDEX REVIEW

Composition list: The data cut-off date is the second Friday. All components of the STOXX China A 900 Minimum Variance Unconstrained index implemented on the following Friday that, as of the cut-off day, are eligible for Northbound trading (for both buying and selling) on either Shanghai Connect or Shenzhen Connect[29] build up the composition list.

Review frequency: The index is reviewed monthly in line with its parent index. Starting with the April 2019 review, in case the implementation date falls on a day on which Northbound trading via Stock Connect at the Hong Kong Exchange is not available the implementation day is postponed to the next dissemination day when Northbound trading is available.

Weighting cap factors: Weighting cap factors of the parent index are used.

16.2.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not added permanently. They will be deleted at the close of the day they start to trade with traded price being available.

Mergers and takeovers: The surviving stock remains in the index.

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[29] An updated list is available on https://www.hkex.com.hk/eng/market/sec_tradinfra/chinaconnect/Eligiblestock.htm

Corporate Actions: All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

16.3. STOXX LOW RISK WEIGHTED

16.3.1. OVERVIEW

The STOXX Low Risk Weighted Indices select and weight companies from their respective benchmark indices and provide access to a low volatility portfolio.

Universe
STOXX Europe Low Risk Weighted 100, 200, 300 selected from STOXX Europe 600
EURO STOXX Low Risk Weighted 50, 100, 150 selected from EURO STOXX
EURO STOXX 50 Low Risk Weighted 30, 50 selected from EURO STOXX 50
STOXX USA Low Risk Weighted 300 selected from STOXX USA 900
STOXX Japan Low Risk Weighted 300 selected from STOXX Japan 600

Weighting scheme: Price-weighted with a weighting factor based on the inverse of the 12-month volatility with 10% component capping.
Base value and dates: For STOXX USA Low Risk Weighted 300 and STOXX Japan Low Risk Weighted 300: 100 on March 18, 2002. For all others: 100 on January 31, 2011.
Index types and currencies: For STOXX Japan Low Risk Weighted 300: price, net return and gross return in EUR and JPY. For all others: price, net return and gross return in EUR and USD.

16.3.2. INDEX REVIEW

Component selection
At cut-off date of the quarterly review month for all components of the respective benchmark the 12-month historical volatility is calculated on component level.
All components are ranked from lowest to highest volatility and depending on the target number of index constituents, the top ranked components are selected for the index.
Although a 12-month historical volatility is used for the selection of the constituents, a 12-month index membership is not required.

Review frequency: The index is reviewed on a quarterly basis, in line with the STOXX Benchmark indices.

Weighting and capping factors: The weighting factors are calculated based on the inverse of the 12-month historical volatility, as follows:

$$w_i = \frac{\frac{1}{\sigma_i}}{\sum_{j=1}^{N} \frac{1}{\sigma_j}}$$

w_i =weight of component (i)
σ_i historical 12 month volatility of component (i)
Weighting cap factor = (100,000,000,000 x initial weight / closing price of the stock in EUR), rounded to integers
Additionally components are capped at a maximum weight of 10% quarterly.

16.3.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast Exit: Not applicable.
Fast entry: Not applicable.
Spin-Offs: Spin-off stocks are not added permanently.

16. STOXX RISK BASED INDICES

16.4. STOXX EUROPE LOW BETA HIGH DIVIDEND 50

16.4.1. OVERVIEW

The index is tracking 50 companies out of STOXX Europe 600 with the lowest beta to the EURO STOXX 50 and which have a higher dividend yield than the EURO STOXX 50 index

Universe: All companies of the STOXX Europe 600 as it will be effective at the periodic index review in December

Weighting scheme: Price weighted with a weighting factor based on the average daily traded value – (ADTV) over three months. Maximum weights are capped at 5% for each components

Base values and dates: 100 on December 31, 2002
Index types and currencies: Price, net return, gross return in EUR and USD

16.4.2. INDEX REVIEW

Selection list

All stocks in the universe must fulfill the following criteria at the cut-off date, the last trading day in November, to be eligible for the selection list:

» A price history of at least one year prior to the cut-off date
» A 3 months average daily traded value (ADTV) of at least 5mln EUR
» A net dividend yield greater than the EURO STOXX 50 net dividend yield measured over 12 months

$$NDY_{iT} = \frac{\sum D_{it}(1 - taxrate_t)}{p_{iT}}$$

NDY_{iT} = Dividend Yield of company i at the cut-off date T
D_{it} = dividend of company i at time t where T – 12 months < t ≤ T
taxratet = Taxrate of the home country of company i prevailing at time t
p_{iT} = closing price of company i at the cut-off date T

$$NDY_{\text{EURO STOXX 50}} = 1\text{Y perf}_{\text{EURO STOXX 50 Ret Return}} - 1\text{Y perf}_{\text{EURO STOXX 50 Price}}$$

» All stocks are ranked by the beta[30] over 12 months against the EURO STOXX 50 in ascending order. Positive and negative beta values are included. If two stocks have the same beta, the one with the largest 3 months ADTV will have the best rank

Composition list

The 50 highest ranked stocks from the selection list are chosen for the index composition (the one with lowest beta). No buffer rules are applied. From each country a maximum of 8 stocks can be selected

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[30] The formulas for statistical calculations are available in the STOXX Statistical Calculation Guide under http://www.stoxx.com/indices/rulebooks.html

16. STOXX RISK BASED INDICES

Review frequency
The index composition is reviewed annually in December. All changes are implemented on the third Friday and effective the next trading day following the STOXX periodic review calendar.
The cut-off date for the selection list and the ADTV data to calculate the weights is the last business day of the month preceding the review month. The selection list is produced annually.

Weighting and capping factors:
Weight of company i is calculated as following:

$$w_i = \frac{3M\ ADTV\ EUR_i}{\sum_{j=1}^{50} 3M\ ADTV\ EUR_j}$$

where the denominator is the sum of 3 months ADTV in EUR of all the 50 companies within the index.
Weighting cap factor = (1,000,000,000 x initial weight / closing price of the stock in EUR), rounded to integers

The final components weights are capped at 5% each quarter.

16.4.3. ONGOING MAINTENANCE

Replacements:
A deleted company is replaced with highest ranked non-component from the selection list and added with weight of the leaving company (weight in = weight out)

If one company is excluded from the STOXX Europe 600 between review dates, but remains in the STOXX Global TMI, this company will not be excluded from the STOXX Europe Low Beta High Div 50 Index.

Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: A spin-off is added temporarily for one trading day and is then removed from the index.

16. STOXX RISK BASED INDICES

16.5. STOXX SHARPE RATIO INDICES

16.5.1. OVERVIEW

The STOXX Sharpe Ratio indices include stocks from the respective benchmarks that have the highest Sharpe ratios, while excluding those with low dividend yields and low liquidity.

Universe: STOXX Global 1800 for the Global version, STOXX [Region] 600 for the regional versions (Europe, North America, Asia/Pacific)

Weighting scheme: The indices are price-weighted with a weighting factor based on the inverse of their historical one year volatility

Base values and dates: 100 on Dec 31, 2004
Index types and currencies: Price, net and gross return in EUR and USD
For a complete list please consult the data vendor code sheet on the website[31].

16.5.2. INDEX REVIEW

Selection list:
At the cutoff date, every stocks from the starting universe is screened for liquidity and the gross dividend yield. Stocks are excluded if:

- Their average daily traded value over six month (ADTV 6M) is below 1 mln EUR (below 5mln for the Global version)
- Their gross dividend yield is not in the top 20% of the universe

In case, less than 50 (100 for the global version) stocks are passing the criteria, the gross dividend yield threshold is loosened to have at least 50 (100) companies (the best 50 /100 stocks by gross dividend yield) on the selection list.

If more than 50 (100) stock pass the initial screening for each stock the Sharpe Ratio is calculated as following and all stocks are ranked according to their Sharpe Ratio value:

$$Sharpe\ ratio_i = \frac{(1Y\ return\ in\ EUR_i - Max[0;\ GC\ Pooling\ 12M\ in\ EUR_i])}{Volatility\ of\ the\ EUR\ price_i}$$ [32]

In case the GC pooling value is not available at the calculation time, the most recent value is used.

Composition list:
The highest ranked 50 stocks are selected for inclusion for the regional version (the highest ranked 100 stocks for the global version).

[31] http://www.STOXX.com/download/indices/vendor_codes.xls
[32] Derived from Sharpe (1966) “reward-to-variability ratio”

16. STOXX RISK BASED INDICES

Review frequency: The reviews are conducted on a quarterly basis. The review cut-off date for the underlying data is the last trading day of the month preceding the review.

Weighting and capping factors: The weighting factors are calculated based on the inverse of the 12-month historical volatility, as follows:

$$w_i = \frac{\frac{1}{\sigma_i}}{\sum_{j=1}^{N} \frac{1}{\sigma_j}}$$

w_i weight of component (i)
σ_i historical 12 month volatility of component (i)
Weighting cap factor = (100,000,000 x initial weight / closing price of the stock i in EUR), rounded to integers
Additionally components are capped at a maximum weight of 10% quarterly.

16.5.3. ONGOING MAINTENANCE

Replacements: A deleted company is replaced with highest ranked non-component from the selection list and added with weight of the leaving company (weight in = weight out). A company excluded from the parent index but not from the STOXX Total Market index will not be excluded from the STOXX Sharpe ratio indices

Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: A spin-off is added temporarily for one trading day and is then removed from the index

16. STOXX RISK BASED INDICES

16.6. STOXX SELECT INDICES

16.6.1. STANDARD STOXX SELECT INDICES

16.6.1.1. OVERVIEW

The STOXX Select family of indices measures the performance of stocks with low volatility and high dividend yield. The index family is derived from regional standard benchmark and thematic indices. The components are weighted by the inverse of the volatility.

Universe: The index universe is defined by the parent index as of the review effective date.

Parent Index/Universe	STOXX Select Index
STOXX Global 1800	STOXX Global Select 100 EUR
STOXX Global 1800	STOXX Global Select 100 USD
STOXX Europe 600	STOXX Europe Select 50 EUR
STOXX North America 600	STOXX North America Select 50 USD
STOXX North America 600	STOXX North America Select 50 EUR
STOXX Asia/Pacific 600	STOXX Asia/Pacific Select 50 JPY
STOXX Asia/Pacific 600	STOXX Asia/Pacific Select 50 EUR
STOXX Nordic Total Market	STOXX Nordic Select 30 SEK
EURO STOXX	EURO STOXX Select 50 EUR
STOXX Emerging Markets 1500	STOXX Emerging Markets Select 100 EUR
STOXX Emerging Markets 1500	STOXX Emerging Markets Select 100 USD
STOXX Emerging Markets 1500 excluding Pakistani stocks	STOXX Emerging Markets ex PK Select 100 EUR
STOXX Emerging Markets 1500 excluding Pakistani stocks	STOXX Emerging Markets ex PK Select 100 USD
STOXX USA 900	STOXX USA Select 50 USD
STOXX Japan 600	STOXX Japan Select 50 JPY
STOXX Canada Total Market	STOXX Canada Select 30 CAD
STOXX Global ESG Leaders	STOXX Global ESG Leaders Select 50 EUR
STOXX Global ESG Leaders	STOXX Global ESG Leaders Select 50 USD
All European stocks from the Global ESG Leaders	STOXX Europe ESG Leaders Select 30 EUR
STOXX Europe Sustainability	STOXX Europe Sustainability Select 30 EUR
STOXX Europe Christian	STOXX Europe Christian Select 30 EUR
STOXX Europe True Exposure 50%	STOXX Europe True Exposure 50% Select 30 EUR
STOXX Europe True Exposure 50%	STOXX Europe True Exposure 50% Select 30 USD
All stocks from the STOXX Europe 600 but not in STOXX Europe True Exposure 50%	STOXX Europe International Exposure Select 30 EUR
All stocks from the STOXX Europe 600 but not in STOXX Europe True Exposure 50%	STOXX Europe International Exposure Select 30 USD
STOXX Global ESG Social Leaders	STOXX Global ESG Social Leaders Select 30 EUR
All European stocks from the STOXX Global ESG Social Leaders	STOXX Europe ESG Social Leaders Select 30 EUR
STOXX Global ESG Environmental Leaders	STOXX Global ESG Environmental Leaders Select 30 EUR
All European stocks from the STOXX Global ESG Environmental Leaders	STOXX Europe ESG Environmental Leaders Select 30 EUR
STOXX Global ESG Governance Leaders	STOXX Global ESG Governance Leaders Select 30 EUR

All European stocks from the STOXX Global ESG Governance Leaders	STOXX Europe ESG Governance Leaders Select 30 EUR
All stocks from the STOXX Global Broad Infrastructure, STOXX Global Infrastructure Extended 100 and STOXX Global Infrastructure Suppliers 50 indices	STOXX Global Infrastructure Select 30 EUR
All stocks from the STOXX Global Broad Infrastructure, STOXX Global Infrastructure Extended 100 and STOXX Global Infrastructure Suppliers 50 indices	STOXX Global Infrastructure Select 30 USD
STOXX Global 1800 Industry Health Care	STOXX Global Health Care Select 30 EUR
STOXX Global 1800 Industry Health Care	STOXX Global Health Care Select 30 USD
STOXX Global 1800 Industry Technology	STOXX Global Technology Select 30 EUR
STOXX Global 1800 Industry Technology	STOXX Global Technology Select 30 USD

Weighting scheme: The indices are price-weighted with a weighting factor based on the inverse of their historical volatility (maximum between their 3-month and 12-month historical volatility)

Base values and dates: 100 on March 22, 2004 for the STOXX Global Infrastructure Select 30, STOXX Global Health Care Select 30 and STOXX Global Technology Select 30 indices. 100 on June 18, 2007 for the STOXX Emerging Markets ex PK Select indices. 100 on June 21, 2004 for all the others.
Index types and currencies: Price, net and gross return
For a complete list, please consult the data vendor code sheet on the website[33].

16.6.1.2. INDEX REVIEW

Selection list:

The review cut-off date is the last trading day of the month preceding the review month of the index.

All stocks in the relevant base universe are screened for their 12-month historical dividend yield. If the value is not available for a stock, the company is removed from the base universe. Additionally, if there are more than 10% of trading days suspension, the stock is excluded:

$$Min\ Number\ of\ Price\ Observations_{Period} = Number\ of\ Trading\ Days_{Period} \times 0.9$$

For the following base indices a liquidity screening is applied and the remaining stocks compose the Eligible Universe:

Base index	3 Months ADTV Threshold
STOXX Emerging Markets 1500	EUR 1 Mln / USD 1 Mln
STOXX USA 900	USD 1 Mln
STOXX Japan 600	JPY 100 Mln

33 http://www.STOXX.com/download/indices/vendor_codes.xls

16. STOXX RISK BASED INDICES

STOXX Canada Total Market	CAD 1 Mln
STOXX Nordic Total Market	SEK 10 Mln
STOXX Global Infrastructure Select 30	EUR 3 Mln / USD 3 Mln

Composition list:

The following Equal Strength Ratio is calculated

$$ESR = \sqrt{\frac{x}{N}}$$

where,

N Number of stocks in the Eligible Universe

x Number of stocks in the final index

All stocks from the Eligible Universe are sorted in ascending order in terms of volatility (maximum between the 3-month and 12-month historical volatility in the currency of the final index) and companies are selected based on the ESR:

$$number\ of\ companies\ to\ select\ (Volatility\ screen) = round\ down\ of\ (ESR \times N)$$

All selected stocks are ranked in descending order in terms of dividend yield and the highest ranked x stocks are selected for the final index. In case of identical dividend yields, priority goes to the stock with the lowest volatility from the volatility screen.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December.

Weighting and capping factors: The weighting factors are calculated based on the inverse of their historical volatility. The weights are based on the prices of the Thursday prior to the second Friday of the review month:

$$w_i = \frac{\frac{1}{\sigma_i}}{\sum_{j=1}^{N} \frac{1}{\sigma_j}}$$

w_i weight of component (i)

σ_i Maximum between the historical 12-months and 3-months volatility of component, based on prices converted to the index currency (i)

Weighting cap factor = (1,000,000,000 x initial weight / closing price of the stock in EUR), rounded to integers

Additionally, components are capped at a maximum weight of 10%.

16. STOXX RISK BASED INDICES

16.6.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-off stocks are not added permanently to the index.
Corporate Actions: All component are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com.

16. STOXX RISK BASED INDICES

16.6.2. STOXX LOW CARBON SELECT INDICES

16.6.2.1. OVERVIEW

The STOXX Low Carbon Select family of indices measures the performance of low carbon emissions stocks with low volatility and high dividend yield. The components are weighted by the inverse of their volatility.

Universe: Effective up until September 2020 review, the index universe is defined by the parent index as of the review effective date, excluding ICB Code 1771 (Coal). Effective with September 2020 review, the index universe is defined by the parent index as of the review effective date, excluding ICB Code 60101040 (Coal).

Parent Index/Universe	STOXX Select Index
STOXX Global 1800	STOXX Global Low Carbon Select 100 EUR
EURO STOXX	EURO STOXX Low Carbon Select 50 EUR
STOXX Europe 600	STOXX Europe Low Carbon Select 50 EUR
All US stocks from the STOXX Global 1800	STOXX USA Low Carbon Select 50 USD

Weighting scheme: The indices are price-weighted with a weighting factor based on the inverse of their historical volatility (maximum between their 3-month and 12-month historical volatility)

Base values and dates: 100 on June 21, 2004
Index types and currencies: Price, net and gross return
For a complete list please consult the data vendor code sheet on the website[34].

16.6.2.1. INDEX REVIEW

Selection list:

The review cut-off date is the last trading day of the month preceding the review month of the index. The review in March, June and September will use the same carbon intensity score as the one used in the last December review.

All stocks in the relevant base universe are screened for their Carbon Intensity (reported and estimated) and 12-months historical dividend yield. If one or more values are not available for a stock, the company is removed from the base universe. Additionally, if there are more than 10% of trading days suspension, the stock is excluded:

$$Min\ Number\ of\ Price\ Observations_{Period} = Number\ of\ Trading\ Days_{Period} \times 0.9$$

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

[34] http://www.STOXX.com/download/indices/vendor_codes.xls

The data consists of both Reported (from CDP: companies voluntarily reporting on annual basis, amongst others, Scope 1 & 2 GHG emissions) and Estimated data (from ISS-Ethics Climate Solutions, who uses, amongst others, CDP data to estimate GHG emissions with a model developed in cooperation with the Zurich ETH university, for companies that do not report to CDP).

Composition list:

The following Equal Strength Ratio is calculated

$$ESR = \sqrt[3]{\frac{x}{N}}$$

where,

N Number of stocks in the Eligible Universe
x Number of stocks in the final index

In each of the 10 ICB industries(effective with September 2020 review, in each of the 11 ICB industries), all stocks are sorted in ascending order in terms of Carbon Intensity and companies are selected based on the ESR:

$$\text{number of companies to select in industry A (Carbon Intensity screen)} \\ = \text{round down of } (\text{ESR} \times \text{N}_\text{A})$$

where,

A one of the 10 ICB industries(Effective with September 2020 review, one of the 11 ICN industries)
N_A Number of stocks in the Eligible Universe from industry A

All selected stocks are sorted in ascending order in terms of volatility (maximum between the 3-month and 12-month historical volatility in the currency of the final index) and companies are selected based on the ESR.

$$\text{number of companies to select (Volatility screen)} = \text{round down of } (\text{ESR}^2 \times \text{N})$$

All selected stocks are ranked in descending order in terms of dividend yield and the highest ranked x stocks are selected for the final index. If two stocks have the same carbon intensity, priority goes to the stock with the highest dividend yield. In case of identical dividend yields, priority goes to the stock with the lowest volatility from the volatility screen.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December.

Weighting and capping factors: The weighting factors are calculated based on the inverse of their historical volatility. The weights are based on the prices of the Thursday prior to the second Friday of the review month

$$w_i = \frac{\frac{1}{\sigma_i}}{\sum_{j=1}^{N} \frac{1}{\sigma_j}}$$

w_i weight of component (i)

16. STOXX RISK BASED INDICES

σ_i Maximum between the historical 12-month and 3-month volatility of component (i), based on prices converted to the index currency

Weighting cap factor = (1,000,000,000 x initial weight / closing price of the stock in EUR), rounded to integers

Additionally, components are capped at a maximum weight of 10%.

16.6.2.2. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-off stocks are not added permanently to the index.
Corporate Actions: All component are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com.

16.7. STOXX DIVERSIFICATION SELECT INDICES

16.7.1. STANDARD STOXX DIVERSIFICATION SELECT INDICES

16.7.1.1. OVERVIEW

The STOXX Diversification Select family of indices measure the performance of stocks with low correlation, low volatility and high dividend yield. The index family is derived from regional standard benchmark and thematic indices. The components are weighted by the inverse of the volatility.

Universe: The index universe is defined by the parent index as of the review effective date.

Parent Index/Universe	STOXX Diversification Select Index
STOXX Global 1800	STOXX Global Diversification Select 100 EUR
STOXX Global 1800	STOXX Global Diversification Select 100 USD
STOXX Europe 600	STOXX Europe Diversification Select 50 EUR
STOXX North America 600	STOXX North America Diversification Select 50 USD
STOXX North America 600	STOXX North America Diversification Select 50 EUR
STOXX Asia/Pacific 600	STOXX Asia/Pacific Diversification Select 50 JPY
STOXX Asia/Pacific 600	STOXX Asia/Pacific Diversification Select 50 EUR
STOXX Nordic Total Market	STOXX Nordic Diversification Select 30 SEK
EURO STOXX	EURO STOXX Diversification Select 50 EUR
STOXX Emerging Markets 1500	STOXX Emerging Markets Diversification Select 100 EUR
STOXX Emerging Markets 1500	STOXX Emerging Markets Diversification Select 100 USD
STOXX USA 900	STOXX USA Diversification Select 50 USD
STOXX Japan 600	STOXX Japan Diversification Select 50 JPY
STOXX Canada Total Market	STOXX Canada Diversification Select 30 CAD
STOXX Global ESG Leaders	STOXX Global ESG Leaders Diversification Select 50 EUR
STOXX Global ESG Leaders	STOXX Global ESG Leaders Diversification Select 50 USD
All European stocks from the Global ESG Leaders	STOXX Europe ESG Leaders Diversification Select 30 EUR
STOXX Europe Sustainability	STOXX Europe Sustainability Diversification Select 30 EUR
STOXX Europe Christian	STOXX Europe Christian Diversification Select 30 EUR
STOXX Europe True Exposure 50%	STOXX Europe True Exposure 50% Diversification Select 30 EUR
STOXX Europe True Exposure 50%	STOXX Europe True Exposure 50% Diversification Select 30 USD
All stocks from the STOXX Europe 600 but not in STOXX Europe True Exposure 50%	STOXX Europe International Exposure Diversification Select 30 EUR
All stocks from the STOXX Europe 600 but not in STOXX Europe True Exposure 50%	STOXX Europe International Exposure Diversification Select 30 USD
STOXX Global ESG Social Leaders	STOXX Global ESG Social Leaders Diversification Select 30 EUR
All European stocks from the STOXX Global ESG Social Leaders	STOXX Europe ESG Social Leaders Diversification Select 30 EUR
STOXX Global ESG Environmental Leaders	STOXX Global ESG Environmental Leaders Diversification Select 30 EUR
All European stocks from the STOXX Global ESG Environmental Leaders	STOXX Europe ESG Environmental Leaders Diversification Select 30 EUR

STOXX Global ESG Governance Leaders	STOXX Global ESG Governance Leaders Diversification Select 30 EUR
All European stocks from the STOXX Global ESG Governance Leaders	STOXX Europe ESG Governance Leaders Diversification Select 30 EUR

Weighting scheme: The indices are price-weighted with a weighting factor based on the inverse of their historical volatility (maximum between their 3-month and 12-month historical volatility)

Base values and dates: 100 on June 21, 2004
Index types and currencies: Price, net and gross return
For a complete list please consult the data vendor code sheet on the website[35].

16.7.1.2. INDEX REVIEW

Selection list:

The review cut-off date is the last trading day of the month preceding the review month of the index.

All stocks in the relevant base universe are screened for their 12-months historical dividend yield. If the value is not available for a stock, the company is removed from the base universe. Additionally, if there are more than 10% of trading days suspension, the stock is excluded:

$$Min\ Number\ of\ Price\ Observations_{Period} = Number\ of\ Trading\ Days_{Period} \times 0.9$$

For the following base indices, a liquidity screening is applied and the remaining stocks compose the Eligible Universe:

Base index	3 Months ADTV Threshold
STOXX Emerging Markets 1500	EUR 1 Mln / USD 1 Mln
STOXX USA 900	USD 1 Mln
STOXX Japan 600	JPY 100 Mln
STOXX Canada Total Market	CAD 1 Mln
STOXX Nordic Total Market	SEK 10 Mln

Composition list:

The following Equal Strength Ratio is calculated

$$ESR = \sqrt[3]{\frac{x}{N}}$$

where,

[35] http://www.STOXX.com/download/indices/vendor_codes.xls

N Number of stocks in the Eligible Universe
x Number of stocks in the final index

All stocks from the Eligible Universe are sorted in ascending order in terms of correlation (average of the 12-month correlation of one stock with all other stocks of the Eligible Universe in the currency of the final index) and companies are selected based on the ESR.

$$number\ of\ companies\ to\ select\ (Correlation\ screen) = round\ down\ of (ESR \times N)$$

All stocks from the Eligible Universe are sorted in ascending order in terms of volatility (maximum between the 3-month and 12-month historical volatility in the currency of the final index) and companies are selected based on the ESR.

$$number\ of\ companies\ to\ select\ (Volatility\ screen) = round\ down\ of\ (ESR^2 \times N)$$

All selected stocks are ranked in descending order in terms of dividend yield and the highest ranked x stocks are selected for the final index. In case of identical average correlation, priority goes to the stock with the highest dividend yield. In case of identical dividend yields, priority goes to the stock with the lowest volatility from the volatility screen.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December.

Weighting and capping factors: The weighting factors are calculated based on the inverse of their historical volatility The weights are based on the prices of the Thursday prior to the second Friday of the review month

$$w_i = \frac{\frac{1}{\sigma_i}}{\sum_{j=1}^{N} \frac{1}{\sigma_j}}$$

w_i weight of component (i)
σ_i Maximum between the historical 12-month and 3-month volatility of component (i), based on prices converted to the index currency

Weighting cap factor = (1,000,000,000 x initial weight / closing price of the stock in EUR) rounded to integers

Additionally, components are capped at a maximum weight of 10%.

16.7.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-off stocks are not added permanently to the index.

Corporate Actions: All component are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com.

16.7.2. STOXX LOW CARBON DIVERSIFICATION SELECT INDICES

16.7.2.1. OVERVIEW

The STOXX Low Carbon Diversification Select family of indices measure the performance of low carbon emissions stocks with low correlation, low volatility and high dividend yield. The components are weighted by the inverse of the volatility.

Universe: Effective up until September 2020 review, the index universe is defined by the parent index as of the review effective date, excluding ICB Code 1771 (Coal). Effective with September 2020 review, the index universe is defined by the parent index as of the review effective date, excluding ICB Code 60101040 (Coal).

Parent Index/Universe	STOXX Diversification Select Index
STOXX Global 1800	STOXX Global Low Carbon Diversification Select 100 EUR
EURO STOXX	EURO STOXX Low Carbon Diversification Select 50 EUR
STOXX Europe 600	STOXX Europe Low Carbon Diversification Select 50 EUR
All US stocks from the STOXX Global 1800	STOXX USA Low Carbon Diversification Select 50 USD

Weighting scheme: The indices are price-weighted with a weighting factor based on the inverse of their historical volatility (maximum between their 3-month and 12-month historical volatility)

Base values and dates: 100 on June 21, 2004
Index types and currencies: Price, net and gross return
For a complete list please consult the data vendor code sheet on the website[36].

16.7.2.1. INDEX REVIEW

Selection list:

The review cut-off date is the last trading day of the month preceding the review month of the index. The review in March, June and September will use the same carbon intensity score as the one used for the last December review.

All stocks in the relevant base universe are screened for their Carbon Intensity (reported and estimated) and 12-month historical dividend yield. If one or more values are not available for a stock, the company is removed from the base universe. Additionally, if there are more than 10% of trading days suspension, the stock is excluded:

$$Min\ Number\ of\ Price\ Observations_{Period} = Number\ of\ Trading\ Days_{Period} \times 0.9$$

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

[36] http://www.STOXX.com/download/indices/vendor_codes.xls

16. STOXX RISK BASED INDICES

The data consists of both Reported (from CDP: companies voluntarily annually report, amongst others, Scope 1 & 2 GHG emissions) and Estimated data (from ISS-Ethix Climate Solutions, who uses, amongst others, CDP data to estimate GHG emissions with a model developed in cooperation with the Zurich ETH university, for companies that do not report to CDP).

The following Equal Strength Ratio is calculated

$$\mathrm{ESR} = \sqrt[4]{\frac{\mathrm{x}}{\mathrm{N}}}$$

where,

N Number of stocks in the Eligible Universe

x Number of stocks in the final index

In each of the 10 ICB industries(effective with September 2020 review, in each of the 11 ICB industries), all stocks are sorted in ascending order in terms of Carbon Intensity (Reported and Estimated) and companies are selected based on the ESR.

$$\text{number of companies to select in industry A (Carbon Intensity screen)} = \text{round down of } (\mathrm{ESR} \times \mathrm{N_A})$$

where,

A one of the 10 ICB industries(Effective with September 2020 review, one of the 11 ICB industries)

$\mathrm{N_A}$ Number of stocks in the Eligible Universe from industry A

All selected stocks are sorted in ascending order in terms of correlation (average of the 12-month correlation of one stock with all other stocks of the Eligible Universe in the currency of the final index) and companies are selected based on the ESR.

$$\text{number of companies to select (Correlation screen)} = \text{round down of}(\mathrm{ESR}^2 \times \mathrm{N})$$

All selected stocks are sorted in ascending order in terms of volatility (maximum between the 3-Months and 12-Months historical volatility in the currency of the final index) and companies are selected based on the ESR.

$$\text{number of companies to select (Volatility screen)} = \text{round down of } (\mathrm{ESR}^3 \times \mathrm{N})$$

All selected stocks are ranked in descending order in terms of dividend yield and the highest ranked x stocks are selected for the final index. If two stocks have the same carbon intensity, priority goes to the stock with the highest dividend yield. In case of identical dividend yields, priority goes to the stock with the lowest volatility from the volatility screen. In case of identical volatilities, priority goes to the stock with the lowest average correlation from the correlation step.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December.

Weighting and capping factors: The weighting factors are calculated based on the inverse of their historical volatility. The weights are based on the prices of the Thursday prior to the second

Friday of the review month $w_i = \frac{\frac{1}{\sigma_i}}{\sum_{j=1}^{N} \frac{1}{\sigma_j}}$

w_i weight of component (i)
σ_i Maximum between the historical 12-month and 3-month volatility of component (i), based on prices converted to the index currency

Weighting cap factor = (1,000,000,000 x initial weight / closing price of the stock in EUR), rounded to integers

Additionally components are capped at a maximum weight of 10%.

16.7.2.1. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-off stocks are not added permanently to the index.
Corporate Actions: All component are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com.

16.8. EURO STOXX ESG-X & EX NUCLEAR POWER SINGLE FACTOR INDICES

16.8.1. OVERVIEW

The EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices are constructed on the EURO STOXX index with standardized ESG exclusion screens applied for Global Standards Screening, Controversial Weapons, Thermal Coal, Nuclear Power and Tobacco Producers. The objective is to extract the following factor risk premia: Value (Earnings Yield and Value), Quality (Leverage and Profitability) and Medium-term Momentum, while controlling for risk and focusing on tradability. The weighting is determined by a single-factor optimization process.

Universe: EURO STOXX

Weighting scheme: The index is price weighted according to a minimum variance optimization

Base values and dates: 100 on March 19, 2012

Index types and currencies: Price, net and gross return in EUR and USD.
For a complete list please consult the data vendor code sheet on the website[37].

Dissemination calendar: STOXX Europe

16.8.2. INDEX REVIEW

Component selection and weighting cap-factors:
From the universe, a set of exclusion criteria are applied which follow the Global Standards Screening assessment, a set of definitions for Controversial Weapons, Thermal Coal, Nuclear Power and Tobacco.

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

[37] http://www.STOXX.com/download/indices/vendor_codes.xls

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.

The criteria for involvement are:
» Internal production or sale of controversial weapons (0% revenue threshold)
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

Thermal Coal:
STOXX will exclude companies that Sustainalytics identifies as having:
»>25% revenues from thermal coal extraction (including thermal coal mining and exploration)
»>25% power generation capacity from coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operate coal-fired power plants).

Nuclear Power:
STOXX will exclude companies that Sustainalytics identifies as having:
»>25% revenues from nuclear power production:
- » Utilities that own/operate nuclear power generators;
- » Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power.

»>25% revenues from nuclear power supporting products / services, including:
- Design and construction of nuclear power plants;
- Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls;
- » Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
- » Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate.

»>25% revenues from nuclear power distribution, including:
- · The resale or distribution of electricity generated from nuclear power;
- » This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix.
  Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power.

Tobacco:
STOXX will exclude companies that Sustainalytics identifies as tobacco producers (0% revenue threshold).

The EURO STOXX ESG-X & Ex Nuclear Power Single Factor optimization is performed using Axioma's Portfolio Optimization software. This portfolio construction tool includes a Second-Order Cone optimization engine as well as a Branch-and-Bound algorithm for combinatorial problems that has been specialized for financial problems.

Risk predictions are made using Axioma's European, Medium-Horizon, Equity Fundamental Factor Risk Model.

16. STOXX RISK BASED INDICES

The EURO STOXX ESG-X & Ex Nuclear Power Single Factor index may have less constituents than the original index.

Constraint	**Single Factor Model**
Individual capping	4.5% / 8% / 35%
Effective number of assets	At least 30% of parent benchmark
Rebalancing and max. turnover	Quarterly, 7.5%
Country / Industry / Sector exposure	Within 5% of parent benchmark
Factor exposures	
Value (Earnings Yield and Value)	For EURO STOXX ESG-X & Ex Nuclear Power Value Index, Earnings Yield and Value are each at least 0.25 cross sectional standard deviations greater than parent benchmark. For other EURO STOXX ESG-X & Ex Nuclear Power Single Factor Indices, within 0.05 cross sectional standard deviations of the parent benchmark.
Quality(Leverage and Profitability)	For EURO STOXX ESG-X & Ex Nuclear Power Quality Index, Profitability is at least 0.25 cross sectional standard deviations greater than the parent benchmark and Leverage is 0.25 cross sectional standard deviations less than the parent benchmark. For other EURO STOXX ESG-X & Ex Nuclear Power Single Factor Indices, within 0.05 cross sectional standard deviations of the parent benchmark.
Medium-Term Momentum	For EURO STOXX ESG-X & Ex Nuclear Power Momentum Index, Medium-Term Momentum is at least 0.25 cross sectional standard deviations greater than parent benchmark. For other EURO STOXX ESG-X & Ex Nuclear Power Single Factor Indices, within 0.05 cross sectional standard deviations of the parent benchmark.
Size	At least as large as parent benchmark and less than within 0.05 cross sectional standard deviations of the parent benchmark.
Market Sensitivity	Within 0.05 cross sectional standard deviations of the parent benchmark.
Volatility	Within 0.05 cross sectional standard deviations of the parent benchmark.
Tracking error	None
Max. number of names	None

The cross-sectional standard deviation is computed as the standard deviation of factor exposures across assets in the Axioma risk model estimation universe as of the rebalance date (market close on the 2nd Friday of the Review Month).

Individual capping

STOXX aims to build the index such that constituent weights fulfil the 5% / 10% / 40% diversification rule, whereby a component cannot weigh more than 10%, and the weights sum of all those weighing at least 5% cannot exceed 40%. By applying the tighter constraints of 4.5% / 8% / 35%, STOXX aims to reduce the chance of breaching the above mentioned levels and to reduce the gravity of the breaches if and when they occur.

Effective number of assets

The effective number of assets of an index is the value, H, defined as:

$$\mathrm{H} = \frac{1}{\sum \mathrm{w}^2}$$

where w is the weight in each portfolio asset. H gives an accurate measure of the number of assets that affect a portfolio. The number of holdings in an index that is weighted by optimisation should be constrained along those lines as well, as otherwise, the portfolio may hold an overly concentrated portfolio, with holdings with insignificant weights.

The constraint is defined as follows for the Unconstrained index:

$$\mathrm{H}_{Multi\,Factor} \geq \mathrm{H}_{\mathrm{Base}} \cdot 30\%$$

Maximum turnover

The EURO STOXX ESG-X Ex Nuclear Power Single Factor indices have a 7.5% one-way turnover constraint, or 15% two-way turnover. This means up to 7.5% of the portfolio is sold in order to purchase other components (with the aim of having a maximum annual turnover of 60%).

Minimum liquidity requirement

Recognizing that minimum variance portfolios may prefer to hold slightly less liquid stocks, the minimum liquidity requirement ensures that there is no material buildup in illiquid positions in the portfolio.

The weighted average days-to-trade d_s for a given group of holdings S are defined as:

$$d_S = \sum_{i \in S} w_i \cdot \frac{h_i}{MDTV_i}$$

where $h_i = w_i \cdot N$ represents the holdings for stock i and $MDTV_i$ represents its 60-day median daily traded value.

Stocks in the benchmark index are ranked by traded value, and liquidity constraints are imposed on stocks in the two least liquid quintiles. For each of these quintiles Q, the weighted average days to trade of the positions (w_i) therein is required to be no more than 3 times the weighted average days to trade of the same stocks held at corresponding benchmark weights (b_i).

$$\sum_{i \in Q} w_i \cdot \frac{w_i \cdot N}{MDTV_i} \leq \gamma \cdot \sum_{i \in Q} b_i \cdot \frac{b_i \cdot N}{MDTV_i}$$

Each position value has been rewritten in terms of the portfolio notional value N (since the term appears in both sides of the inequality constraint, it cancels out and the actual value is irrelevant). The parameter γ is set to 3.

16. STOXX RISK BASED INDICES

b_i represents weights in the corresponding capitalization-weighted benchmark index weight.

Country, Industry and Sector exposure
The exposure to each country, industry and sector is summed up for the parent benchmark index, and the percentage exposure of the EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices have to be within 5% of those values. These constraints make sure the Single Factor indices are closely related in structure to the parent index, except for risk.

Factor exposures
The parent index' exposure to each factor is computed and the EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices are constrained to be within a quarter standard deviation of that. The factor exposures for each asset are determined by Axioma's European, Medium-Horizon, Equity Fundamental Factor Risk Model, which gives factor exposures as Z scores.

- **Value (Earnings Yield and Value)**
  For EURO STOXX ESG-X & Ex Nuclear Power Value index, the percentage exposure to Value and Earnings Yield are each at least 0.25 standard deviations greater than the parent benchmark.

  For the other EURO STOXX ESG-X & Ex Nuclear Power Single Factor Indices, the percentage exposure to Earnings Yield and Value are within 0.05 standard deviations of the parent benchmark.

  Value gives a measure of how fairly a stock is priced within the market. It is calculated as book-to-price. Book-to-price is calculated as the ratio of common equity to average 30-calendar-day total issuer market capitalization. The calculation uses the most recently reported annual common equity value

  Earnings yield is calculated as a combination of three parts realized to one part forecast earnings-to-price. Realized earnings to price is calculated as the most recently reported annual net income value, divided by the average total issuer market capitalization computed over the last 30 calendar days. Forecast earnings-to-price is calculated as forward-looking earnings estimate, divided by the average total issuer market capitalization computed over the last 30 calendar days. Research has indicated that the combination of these two factors is particularly effective at capturing the risk premium associated with Value.

- **Quality (Leverage and Profitability)**
  For EURO STOXX ESG-X & Ex Nuclear Power Quality index, the percentage exposure to Leverage is at least 0.25 standard deviations less than the parent benchmark and the percentage exposure to Profitability is at least than 0.25 standard deviations greater than the parent benchmark.

  For the other EURO STOXX ESG-X & Ex Nuclear Power Single Factor Indices, the percentage exposure to Leverage and Profitability are within 0.05 standard deviations of the parent benchmark.

16. STOXX RISK BASED INDICES

Leverage provides a measure of a company's exposure to debt levels. It is calculated as the equal-weighted average of the descriptors, debt-to-assets and debt-to-equity. Both descriptors are standardized prior to summation. Debt-to-assets is calculated as the ratio of long-term and short-term debt to total assets, where total assets are computed as the most recently reported value from annual reports. Debt-to-equity is calculated as the ratio of long-term and short-term debt to common equity, where common equity is computed as the average of the four most recently reported values from annual reports.

Profitability of a company is a measure of the company's profitability, and it is often associated with the quality of the company. Profitability is constructed as a linear combination of the return-on-equity, return-on-assets, cash-ow-to-assets, cash-ow-to-income, gross margin, and sales-to-assets descriptors. Return-on-equity is calculated as the most recently reported annual earnings values, divided by the average of the two most recently reported annual common equity values. Return-on-assets is calculated as the most recently reported annual earnings values, divided by the average of the two most recently reported annual total assets values. Cash-flow-to-assets is calculated as the most recently reported annual operating cash flow divided by the average of the two most recently reported annual total assets values. Cash-flow-to-income is calculated as the average of the two most recently reported annual operating cash flows divided by the average of the two most recently reported annual income values. Gross margin is calculated as net sales (sales minus the cost of goods sold), divided by sales. Both the numerator and the denominator values are computed as the most recently reported annual values. Sales-to-assets is calculated as the most recently reported annual sales values, divided by the most recently reported annual total assets values.

- **Medium-term Momentum**
  For EURO STOXX ESG-X & Ex Nuclear Power Momentum index, the percentage exposure to Medium-Term Momentum is at least 0.25 standard deviations greater than the parent benchmark.

  For the other EURO STOXX ESG-X & Ex Nuclear Power Single Factor Indices, the percentage exposure to Medium-Term Momentum is within 0.05 standard deviations of the parent benchmark.

  Medium-Term Momentum gives a measure of a stock's past performance over the medium term. It is defined as an asset's cumulative return over the last 250 trading days, with the last 20 trading days progressively down weighted (approximately the past year excluding the past month). To improve the stability of exposures, the return histories used to calculate the exposures are weighted by a trapezoidal weighting scheme instead of an equal weighting scheme.

- **Size**
  The percentage exposure of the EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices is no less than the parent benchmark exposure and less than 0.05 standard deviations greater than the parent benchmark exposure.

  Size differentiates large and small stocks and is defined as the natural logarithm of the total issuer market capitalization, averaged over the last month. Issuer market capitalization is computed as the product of the total shares outstanding and closing price, summed over all issues common to the issuer.

- **Market Sensitivity**
  The percentage exposure of the EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices is within 0.05 standard deviations of the parent benchmark exposure.

  Market Sensitivity is a measure of an asset's performance relative to that of the overall market, based on historical data. It is calculated by regressing the historical time series of an asset's return against the European market return and an intercept term. Two years of weekly returns are used for the regression. To improve the stability of exposures, the return histories used to calculate the exposures are weighted by a trapezoidal weighting scheme instead of equal weighting.

- **Volatility**
  The percentage exposure of the EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices is within 0.05 standard deviations of the parent benchmark exposure.

  Volatility gives a measure of an asset's relative volatility over time according to its historical behavior. It is calculated as the square-root of the 125-day average of the asset's absolute return divided by the cross-sectional volatility of the market. The Volatility factor is fully orthogonalized to the Market Sensitivity factor. To improve the stability of exposures, the return histories used to calculate the exposures are weighted by a trapezoidal weighting scheme instead of equal weighting.

Tracking error
This constraint is not applicable to the EURO STOXX ESG-X & Ex Nuclear Power Single Factor indices.

Review frequency
The index is reviewed quarterly in line with the parent index (implementation after the close of the third Friday and effective the next dissemination day in March, June, September and December).

The review cut-off date is the last dissemination day of the month preceding the review month. The review cut-off date for Axioma data is the second Friday of the review month.

Derived indices: Not applicable.

16.8.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not added permanently.

16. STOXX RISK BASED INDICES

16.9. EURO STOXX ESG-X & EX NUCLEAR POWER MINIMUM VARIANCE UNCONSTRAINED INDEX

16.9.1. OVERVIEW

The Objective of the EURO STOXX ESG-X & Ex Nuclear Power Minimum Variance Unconstrained index is to reflect the EURO STOXX index with standardized ESG exclusion screens applied for Global Standards Screening, Controversial Weapons, Thermal Coal, Nuclear Power and Tobacco Producers, with weighting determined by a minimum variance optimization.

Universe: EURO STOXX

Weighting scheme: The index is price weighted according to a minimum variance optimization

Base values and dates: 100 on March 19, 2012

Index types and currencies: Price, net and gross return in EUR and USD.
For a complete list please consult the data vendor code sheet on the website[38].

Dissemination calendar: STOXX Europe

16.9.2. INDEX REVIEW

Component selection and weighting cap-factors:
From the universe, a set of exclusion criteria are applied which follow the Global Standards Screening assessment, a set of definitions for Controversial Weapons, Thermal Coal, Nuclear Power and Tobacco.

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.

[38] http://www.STOXX.com/download/indices/vendor_codes.xls

16. STOXX RISK BASED INDICES

The criteria for involvement are:
» Internal production or sale of controversial weapons (0% revenue threshold)
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

Thermal Coal:
STOXX will exclude companies that Sustainalytics identifies as having:
»>25% revenues from thermal coal extraction (including thermal coal mining and exploration)
»>25% power generation capacity from coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operate coal-fired power plants).

Nuclear Power:
STOXX will exclude companies that Sustainalytics identifies as having:
»>25% revenues from nuclear power production:
- » Utilities that own/operate nuclear power generators;
  Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power.

»>25% revenues from nuclear power supporting products / services, including:
- Design and construction of nuclear power plants;
- Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls;
- Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
- » Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate.

»>25% revenues from nuclear power distribution, including:
- · The resale or distribution of electricity generated from nuclear power;
- · This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix.
  Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power.

Tobacco:
STOXX will exclude companies that Sustainalytics identifies as tobacco producers (0% revenue threshold).

The EURO STOXX ESG-X & Ex Nuclear Power Minimum Variance optimization is performed using Axioma's Portfolio Optimization software. This portfolio construction tool includes a Second-Order Cone optimization engine as well as a Branch-and-Bound algorithm for combinatorial problems that has been specialized for financial problems.

Risk predictions are made using Axioma's European, Medium-Horizon, Equity Fundamental Factor Risk Model.

The EURO STOXX ESG-X & Ex Nuclear Power Minimum Variance Unconstrained index aims to obtain a pure minimum variance portfolio, suitable for investors seeking either a superior benchmark or a good strategy index. The Minimum Variance Unconstrained index may have less constituents than the original index.

Constraint	Minimum Variance Unconstrained
Individual capping	4.5% / 8% / 35%
Effective number of assets	At least 30% of parent benchmark
Rebalancing and max. turnover	Quarterly, 7.5%
Country/industry exposure	None
Factor exposure	None
Tracking error	None
Max. number of names	None

Individual capping
STOXX aims to build the index such that constituent weights fulfil the 5% / 10% / 40% diversification rule, whereby a component cannot weigh more than 10%, and the weights sum of all those weighing at least 5% cannot exceed 40%. By applying the tighter constraints of 4.5% / 8% / 35%, STOXX aims to reduce the chance of breaching the above mentioned levels and to reduce the gravity of the breaches if and when they occur.

Effective number of assets
The effective number of assets of an index is the value, H, defined as:

$$\mathrm{H} = \frac{1}{\sum \mathrm{w}^2}$$

where w is the weight in each portfolio asset. H gives an accurate measure of the number of assets that affect a portfolio. The number of holdings in an index that is weighted by optimization should be constrained along those lines as well, as otherwise, the portfolio may hold an overly concentrated portfolio, with holdings with insignificant weights.

The constraint is defined as follows for the Unconstrained index:

$$\mathrm{H}_{\mathrm{MinVar}} \geq \mathrm{H}_{\mathrm{Base}} \cdot 30\%$$

Maximum turnover
The EURO STOXX ESG-X & Ex Nuclear Power Minimum Variance Unconstrained index has a 7.5% one-way turnover constraint, or 15% two-way turnover. This means up to 7.5% of the portfolio is sold in order to purchase other components (with the aim of having a maximum annual turnover of 60%).

Minimum liquidity requirement
Recognizing that minimum variance portfolios may prefer to hold slightly less liquid stocks, the minimum liquidity requirement ensures that there is no material buildup in illiquid positions in the portfolio.

The weighted average days-to-trade d_s for a given group of holdings S are defined as:

$$d_S = \sum_{i \in S} w_i \cdot \frac{h_i}{MDTV_i}$$

where $h_i = w_i \cdot N$ represents the holdings for stock i and $MDTV_i$ represents its 60-day median daily traded value.

Stocks in the benchmark index are ranked by traded value, and liquidity constraints are imposed on stocks in the two least liquid quintiles. For each of these quintiles Q, the weighted average days to trade of the positions (w_i) therein is required to be no more than 10 times the weighted average days to trade of the same stocks held at corresponding benchmark weights (b_i).

$$\sum_{i \in Q} w_i \cdot \frac{w_i \cdot N}{MDTV_i} \leq \gamma \cdot \sum_{i \in Q} b_i \cdot \frac{b_i \cdot N}{MDTV_i}$$

Each position value has been rewritten in terms of the portfolio notional value N (since the term appears in both sides of the inequality constraint, it cancels out and the actual value is irrelevant). The parameter γ is set to 10.
b_i represents weights in the corresponding capitalization-weighted benchmark index weight.

Country, Industry, Sector and Factor exposures
These constraints are not applicable to the EURO STOXX ESG-X & Ex Nuclear Power Minimum Variance Unconstrained index.

Tracking error
This constraint is not applicable to the EURO STOXX ESG-X & Ex Nuclear Power Minimum Variance Unconstrained index.

Review frequency
The index is reviewed quarterly in line with the parent index (implementation after the close of the third Friday and effective the next dissemination day in March, June, September and December).

The review cut-off date is the last dissemination day of the month preceding the review month.
The review cut-off date for Axioma data is the second Friday of the review month.

Derived indices: Not applicable.

16.9.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not added permanently.

16.10. STOXX GLOBAL LOW RISK WEIGHTED DIVERSIFIED 200 INDEX

16.10.1. OVERVIEW

The STOXX Global Low Risk Weighted Diversified 200 Index selects and weighs companies from STOXX Global 1800 and provides access to a low volatility portfolio. Industry, country and stock capping controls are applied in the selection process to ensure diversification.

Universe: STOXX Global 1800

Weighting scheme: The indices are price-weighted with weighting factors based on the inverse of the 12-month price volatility with single stock, industry and country capping

Base values and dates: 100 on December 20, 2002

For a complete list please consult the data vendor code sheet on the website[39]. Customized solutions can be provided upon request.

Index types and currencies: Price, net and gross return in EUR and USD

Dissemination calendar: STOXX Europe Calendar

16.10.2. INDEX REVIEW

Selection list:
At cut-off date of the quarterly review month, the 12-month historical price volatility in USD is calculated on component level for the new components of the respective benchmark that would be effective on the review effective date. The free-float market capitalization for the parent benchmark used in the selection below is calculated based on the most recent data as known to STOXX at the cut-off date for these new components. A component must have at least 12-month of trading history to be eligible for the index.

All components are ranked from the lowest to highest volatility and the top ranked 200 components are selected for the index based on the selection criteria which are derived based on the following constraints:

1. Component weight constraints
   a. The minimum component weight is 5 bps
   b. The maximum component weight is the minimum of (2%, 25 times the parent benchmark component weight)

[39] http://www.STOXX.com/download/indices/vendor_codes.xls

16. STOXX RISK BASED INDICES

2. Country weight constraints
    a. For countries with weights above 2.5% in the parent benchmark, country weights can deviate by +/- 5% against the parent benchmark
    b. For countries with weights equal or less than 2.5% in the parent benchmark, country weights are capped at 3 times their weight in the parent benchmark

3. Industry weight constraints
   Effective up until September 2020 review, the industry groups are based on the ICB Classification system, following the categorization below:

Grouping	ICB codes
Oil & Gas	Industry 0001
Basic Materials	Industry 1000
Industrials	Industry 2000
Consumer Goods	Industry 3000
Health Care	Industry 4000
Consumer Services	Industry 5000
Telecommunications	Industry 6000
Utilities	Industry 7000
Financials	Supersectors 8300, 8500, and 8700
Real Estate	Supersector 8600
Technology	Industry 9000

    a. The maximum industry group weight is 25%

Effective with September 2020 review, the industry groups are based on the ICB Classification system, following the categorization below:

Grouping	ICB codes
Energy	Industry 60
Basic Materials	Industry 55
Industrials	Industry 50
Consumer Staples	Industry 45
Healthcare	Industry 20
Consumer Discretionary	Industry 40
Telecommunications	Industry 15
Utilities	Industry 65
Financials	Industry 30
Real Estate	Industry 35
Technology	Industry 10

    a. The maximum industry group weight is 25%

The selection process to obtain the 200 components will fulfil the following requirements below.
1. The parent benchmark component weight be at least 0.2 bps.

16. STOXX RISK BASED INDICES

2. First, ensure the minimum weight requirements can be met. Starting from the top ranking low volatility components, a component is selected into the index until both these conditions are satisfied:
   a. the number of components by country is greater equal than the minimum country weight*100, and
   b. the sum of the maximum component weights of components by country is greater than the minimum country weight constraint

3. When the minimum weight requirements are satisfied, the remaining top ranking low volatility components are selected into the index until the number of selected components reaches 200 based on the following criteria:
   a. the number of components by country is less than the maximum country weight*200, and
   b. the number of components by industry is less than the maximum industry weight*200

Review frequency: The index is reviewed on a quarterly basis, in line with the STOXX Global 1800

Weighting and capping factors:
Target weights calculations: The target weights are calculated based on the inverse of the 12-monthly historical price volatility, as follows:

$$w_i = \frac{\frac{1}{\sigma_i}}{\sum_{j\, in\, comp\, list}^{N} \frac{1}{\sigma_j}}$$

w_i = weight of component (i)
σ_i = historical 12-months price volatility of component (i) in USD
N = number of components in the index

Capped weights calculations: The capped weights w_i are derived from the target weights via an iterative process that minimises the relative squared difference between the target weights and the capped weights while maintaining the single component, country and industry group weight constraints.

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their weight in the index.

Weight factor calculation:

$$WeightFactor_i = \frac{cw_i}{p_i} \cdot 100{,}000{,}000{,}000$$

rounded down to the closest integer where:
cw_i = capped weight of company *i* as described above

p_i = close price in EUR of company *i* on the Thursday prior to the second Friday of the review month.

16.10.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced. Deletions from the corresponding universe (STOXX Global 1800 Index), which remain in the STOXX Global Total Market Index are not deleted from the index.

Fast exit: Not applicable

Fast entry: Not applicable

Spin-offs: Spin-off companies are not added permanently.

Corporate Actions: All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

17. STOXX EXPOSURE INDICES

17.1. STOXX TRUE EXPOSURE INDICES

17.1.1. OVERVIEW

The STOXX True Exposure indices provide investors with exposure to companies that generate a substantial portion of their revenues inside their home region.

Universe: The universe is given by the components of the corresponding benchmark indices (see table below).

Weighting scheme: The indices are weighted by free-float market capitalization multiplied with the corresponding exposure factor. All components are subject to a cap of 5%.

$$w_i = \frac{ffmcap_i \cdot exposure_i}{\sum_{j\ in\ comp.list} ffmcap_j \cdot exposure_j}$$

Details on how the exposure parameter is calculated can be found in chapter 17.1.4.

Base values and dates: 100 on September 24, 2007.

17.1.2. INDEX REVIEW

Component list and selection:

At the cut-off date based on the universe companies that generate at least the defined minimum share of revenues in the respective “home region” are selected into the index. The revenue information is based on most recent annual reports. If the underlying universe does not include a liquidity criterion a three months average daily traded value filter of EUR 1 million is applied. In addition companies that only report a single revenue number (see chapter 17.1.4, case 4) are excluded.

In order to control the turnover a buffer-rule is applied. Current components are removed from the index only if their exposure falls below the threshold.

Index	Home/Universe	Exposure threshold for additions (%)	Exposure threshold for deletion (%)
EURO STOXX True Exposure	EURO STOXX	50, 75	40, 65
STOXX True Exposure Asia/Pacific	STOXX Asia/Pacific 600	50, 75	40, 65
STOXX True Exposure Australia	STOXX Australia 150	50, 75	40, 65
STOXX True Exposure Canada	STOXX Canada 240	50, 75	40, 65
STOXX True Exposure Europe	STOXX Europe 600	50, 75	40, 65
STOXX True Exposure Japan	STOXX Japan 600	50, 75	40, 65
STOXX True Exposure North America	STOXX North America 600	50, 75	40, 65
STOXX True Exposure UK	STOXX UK 180	50, 75	40, 65
STOXX True Exposure USA	STOXX USA 900	50, 75	40, 65

Review frequency:

The index composition including the revenue exposure factor is reviewed annually in September based on most recent available data at the cut-off date at the end of August. The needed data

points are updated in the third quarter of each calendar year. Hereby, company revenues data related to the most recent fiscal period. For macroeconomic data points, e.g. exports of commodities and services, GDPs and imports, the previous calendar year's figures are taken into account. In case a macroeconomic data point is not available, the most recent data is used for calculations.
In addition, the indices are rebalanced and capped quarterly.

Weighting cap factors: The components are capped based on the exposure factor. In case the weight exceeds 5% an additional capping to 5% is applied.

17.1.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Global TMI are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-offs are not added permanently.
Mergers and takeovers: The original stock is replaced by the surviving stock.

17.1.4. EXPOSURE PARAMETER

In a first step the raw revenue break down data per company is standardized (i.e. translated to predefined countries and regions). In order to calculate the percentage of the revenue exposure of a company to a single country which was not necessarily reported in a first step, the regions need to be split into countries. In a second step a metric is needed that assigns a certain percentage to a country within a region (e.g. how much of revenues which were assigned to Europe come from Germany).

In order to calculate the respective exposures, revenues have to be broken down to the country level. Hereby four cases need to be distinguished:

Case 1: The company already reports revenues broken down to the country level

The share of total revenues TR_i generated in country c is determined by dividing the ratio of the reported country revenues $S_{i,c}$ and total revenues.

$$x_{i,c} = \frac{S_{i,c}}{TR_i}$$

Case 2: Revenues are reported on a regional level (while the reported region does not include the company's home country)

In case revenues are reported solely on a more aggregated (i.e. regional) level, the respective country revenues are determined based on export relations between the reporting company's home country's industry's exports to all countries of the respective region. Hereby, exports comprise exported goods and services.

In order to link exported goods and services to companies, a mapping of goods and services to ICB Supersectors has been conducted. The respective table including the mapping can be found at the end of the document.

The revenues of company i (located in country H and belonging to industry J) that are generated in country c of region R is calculated as:

$$S_{i,c_R} = \frac{EXP_{H,J,c_R}}{\sum_{c_R}^{C} EXP_{H,J,c_R}} S_{i,R}$$

where $S_{i,R}$ indicates the revenues of company i generated in region R, and EXP_{H,J,c_R} indicates the exports from company i's home country's (H) industry J to country c of region R.

In case disaggregated commodity and services data is not available for a given home-country – region combination, the estimation is done based on a country (no longer country and industry specific) approach.

If i denotes the company and H denotes this company's home country, then the revenues S_{i,c_R} generated by company i located in country H that are generated in country c_R of region R is be calculated as follows:

$$S_{i,c_R} = \frac{EXP_{H,c_R}}{\sum_{c_R}^{C} EXP_{H,c_R}} S_{i,R}$$

where $S_{i,R}$ indicates the revenues of company i generated in region R. EXP_{H,c_R} indicates the exports from country H to country c_R of region R. $\sum_{c_R}^{C} EXP_{H,c_R}$ indicates the sum of exports from country H to all countries c in region R.

The share of total revenues TR_i generated in country c_R is then again determined by dividing the ratio of the estimated country revenues $S_{i,c}$ and total revenues.

$$x_{i,c_R} = \frac{S_{i,c_R}}{TR_i}$$

Case 3: Revenues are reported on a regional level (while the reported region includes the company's home country)

In case the reported region does include the reporting company's home country, the portion of revenues that is assumed to be generated in company i's home country H may first be extracted from the revenues of company i generated in region R.

The home country portion $S_{i,H}$ is calculated as follows:

$$S_{i,H} = \left(1 - \frac{\sum_{c_R}^{C} EXP_{H,c_R}}{\sum_{c_R}^{C} EXP_{H,c_R} + GDP_H - EXP_{H,V} + IMP_{H,V}}\right) S_{i,R}$$

where GDP_H indicates the gross domestic product of company i's home country H, $EXP_{H,V}$ indicated the exports from the home country H of company i to the rest of the world V, and $IMP_{H,V}$ indicated the imports from the rest of the world V to company i's home country H.

The corresponding share of total revenues being generated locally is determined as follows:

$$x_{i,H} = \frac{S_{i,H}}{TR_i}$$

The portion of revenues $S_{i,K}$ generated in the reported home region K outside of reporting company i's home country H is then calculated as:

$S_{i,K} = S_{i,R} - S_{i,H}$.

Finally, the remaining country revenues are again determined as follows:

$$S_{i,c_R} = \frac{EXP_{H,J,c_R}}{\sum_{c_R}^{C} EXP_{H,J,c_R}} S_{i,K}.$$

Again, in case disaggregated commodity and services data is not available for a given home-country – region combination, the estimation is done based on a country (no longer country and industry specific) approach:

$$S_{i,c_R} = \frac{EXP_{H,c_R}}{\sum_{c_R}^{C} EXP_{H,c_R}} S_{i,K}.$$

Following the above described procedure, share of total revenues being generated locally is determined as follows:

$$x_{i,c_R} = \frac{S_{i,c_R}}{TR_i}$$

Case 4: Revenues are reported for the entire world

In this case a company only reports a single revenue number for the entire world W, without any further breakdown to a country or lower regional level, a methodology similar to that explained above may be applied to break down revenues to a per country level.
The home portion of total reported revenues is determined by separating the home country portion:

$$S_{i,H} = \left(1 - \frac{EXP_{H,V}}{GDP_H + IMP_{H,V}}\right) S_{i,W}$$

With the corresponding revenue share being:

$$x_{i,H} = \frac{S_{i,H}}{TR_i}$$

where $S_{i,W}$ indicates revenues of company i generated in the world W.

17. STOXX EXPOSURE INDICES

Again, the portion of revenues generated locally may alternatively be determined as the average share of local revenues determined across all those companies NH from country H in the data sample that directly report their local revenues, as was described above.
The portion of revenues generated in the “rest of the world” V is calculated as:

$S_{i,V} = S_{i,W} - S_{i,H}$.

Finally, the remaining country revenues may be determined as follows:

$$S_{i,c_V} = \frac{EXP_{H,J,c_V}}{\sum_{c_V}^{C} EXP_{H,J,c_V}} S_{i,V}$$

where EXP_{H,J,c_V} indicates the exports from company i’s home country’s (H) industry J to country c in the rest of the world V.

Following the procedure outlined in case 2 and 3, in case disaggregated commodity and services data is not available for a given home-country – region combination, the estimation is done based on a country (no longer country and industry specific) approach:

$$S_{i,c_V} = \frac{EXP_{H,c_V}}{\sum_{c_V}^{C} EXP_{H,c_V}} S_{i,V}$$

With the corresponding revenue shares being:

$x_{i,c_V} = \frac{S_{i,c_V}}{TR_i}$.

17.2. STOXX INTERNATIONAL EXPOSURE INDICES

17.2.1. OVERVIEW

The STOXX International Exposure indices provide investors with exposure to companies that generate a substantial portion of their revenues outside their home region.

Universe: The universe is given by the components of the corresponding benchmark indices the EURO STOXX and STOXX Japan 600 respectively.

Weighting scheme: The indices are weighted by free-float market capitalization multiplied with the corresponding exposure factor. All components are subject to a cap of 5%.

$$w_i = \frac{\text{ffmcap}_i \cdot \text{exposure}_i}{\sum_{j \text{ in comp.list}} \text{ffmcap} \cdot \text{exposure}}$$

Details on how the exposure parameter is calculated can be found in chapter Exposure Parameter.

Base values and dates: 100 on September 24, 2007.

For a complete list please consult the data vendor code sheet on the website[40]. Customized solutions can be provided upon request.

Index types and currencies: Price, net return, gross return in EUR, USD, GBP for the Eurozone and JPY for Japanese version

17.2.2. INDEX REVIEW

Component list and selection:
At the cut-off date based on the universe companies that generate at least the defined minimum share of revenues in the respective "target region" are selected into the index. The revenue information is based on most recent annual-reports

In order to control the turnover in the index the selection is subject to a buffer-rule on a component level. Current components are removed from the index only if their exposure falls below the threshold:

Index	Universe	Target Region	Exposure threshold for additions (%)	Exposure threshold for deletion(%)
EURO STOXX International Exposure	EURO STOXX	Global ex Eurozone	50	40

40 http://www.STOXX.com/download/indices/vendor_codes.xls

STOXX Japan International Exposure	STOXX Japan 600	Global ex Japan	50	40

Review frequency:
The index-composition including the revenue-exposure factor is reviewed annually in September based on most recent available data at the cut-off date at the end of August. The needed data-points are updated in the third quarter of each calendar year. Hereby, company-revenues data relates to the most recent fiscal period. For macroeconomic data points, e.g. exports of commodities and services, GDPs and imports, the previous calendar years' figures are taken into account. In case a macroeconomic data-point is not available, the most recent data is used for the calculations
The underlying free-float factors and the number of shares are updated in line with the quarterly review-frequency of the respective parent index.

Weighting cap factors: The components are capped based on the exposure factor. In case the weight exceeds 5% an additional capping to 5% is applied.

17.2.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently.

Mergers and takeovers: The original stock is replaced by the surviving stock.

17.2.4. EXPOSURE PARAMETER

The raw revenue break-down data per company is provided by Capital IQ and standardized. In order to calculate the percentage of the revenue exposure of a company to a single country which was not necessarily reported in a first step, the regions need to be split into countries. In a second step a metric is needed that assigns a certain percentage to a country within a region (e.g. how much of revenues which were assigned to Europe come from Germany).

In order to calculate the respective exposures, revenues have to be broken down to the country level and hereby four cases need to be distinguished:

Case 1: The company already reports revenues broken down to the country level

The share of total revenues TR_i generated in country c is determined by dividing the ratio of the reported country revenues $S_{i,c}$ and total revenues.

$$x_{i,c} = \frac{S_{i,c}}{TR_i}$$

Case 2: Revenues are reported on a regional level (while the reported region does not include the company's home country)

17. STOXX EXPOSURE INDICES

In case revenues are reported solely on a more aggregated (i.e. regional) level, the respective country revenues are determined based on export relations between the reporting company's home country and all countries of the respective region. Hereby, exports comprise exported goods and services.

If i denotes the company and H denotes this company's home country, then the revenues S_{i,c_R} generated by company i located in country H that are generated in country c_R of region R is be calculated as follows:

$$S_{i,c_R} = \frac{EXP_{H,c_R}}{\sum_{c_R}^{C} EXP_{H,c_R}} S_{i,R}$$

where $S_{i,R}$ indicates the revenues of company i generated in region R. EXP_{H,c_R} indicates the exports from country H to country c_R of region R. $\sum_{c_R}^{C} EXP_{H,c_R}$ indicates the sum of exports from country H to all countries c in region R.

The share of total revenues TR_i generated in country c_R is then again determined by dividing the ratio of the estimated country revenues $S_{i,c}$ and total revenues.

$$x_{i,c_R} = \frac{S_{i,c_R}}{TR_i}$$

Case 3: Revenues are reported on a regional level (while the reported region includes the company's home country)

In case the reported region does include the reporting company's home country, the portion of revenues that is assumed to be generated in company i's home country H may first be extracted from the revenues of company i generated in region R.

The home country portion $S_{i,H}$ is calculated as follows:

$$S_{i,H} = \left(1 - \frac{\sum_{c_R}^{C} EXP_{H,c_R}}{\sum_{c_R}^{C} EXP_{H,c_R} + GDP_H - EXP_{H,V} + IMP_{H,V}}\right) S_{i,R}$$

where GDP_H indicates the gross domestic product of company i's home country H, $EXP_{H,V}$ indicated the exports from the home country H of company i to the rest of the world V, and $IMP_{H,V}$ indicated the imports from the rest of the world V to company i's home country H.

The corresponding share of total revenues being generated locally is determined as follows:

$$x_{i,H} = \frac{S_{i,H}}{TR_i}$$

The portion of revenues $S_{i,K}$ generated in the reported home region K outside of reporting company i's home country H is then calculated as:

$S_{i,K} = S_{i,R} - S_{i,H}$.

Finally, the remaining country revenues are again determined as follows:

$S_{i,c_R} = \frac{EXP_{H,c_R}}{\sum_{c_R}^{C} EXP_{H,c_R}} S_{i,K}$.

Following the above described procedure, share of total revenues being generated locally is determined as follows:

$$x_{i,c_R} = \frac{S_{i,c_R}}{TR_i}$$

Case 4: Revenues are reported for the entire world

In this case a company only reports a single revenue number for the entire world W, without any further breakdown to a country or lower regional level, a methodology similar to that explained above may be applied to break down revenues to a per country level.
The home portion of total reported revenues is determined by separating the home country portion:

$$S_{i,H} = \left(1 - \frac{EXP_{H,V}}{GDP_H + IMP_{H,V}}\right) S_{i,W}$$

With the corresponding revenue share being:

$$x_{i,H} = \frac{S_{i,H}}{TR_i}$$

where $S_{i,W}$ indicates revenues of company i generated in the world W.

Again, the portion of revenues generated locally may alternatively be determined as the average share of local revenues determined across all those companies NH from country H in the data sample that directly report their local revenues, as was described above.
The portion of revenues generated in the “rest of the world” V is calculated as:

$S_{i,V} = S_{i,W} - S_{i,H}$.

Finally, the remaining country revenues may be determined as follows:

$$S_{i,c_V} = \frac{EXP_{H,c_V}}{\sum_{c_V}^{C} EXP_{H,c_V}} S_{i,V}$$

With the corresponding revenue shares being:

$x_{i,c_V} = \frac{S_{i,c_V}}{TR_i}$.

17.3. STOXX EMERGING MARKETS EXPOSED INDICES

17.3.1. OVERVIEW

The STOXX Emerging Markets Exposed (EM Exposed) indices are a subset of the STOXX Global 1800. Constituents are selected and weighted based on their exposure towards emerging markets.

Universe:
The index universe is based on the STOXX Global 1800 and the following regions as defined in section 4.3 are calculated: Global (developed) and Europe.

Weighting scheme: The index is weighted according to free-float market capitalization.

Base value and dates: 100 on March 19, 2007.

Index types and currencies: EUR, USD as Price, Net, and Gross Return.

17.3.2. INDEX REVIEW

Selection list
» All companies within the universe are screened for their exposure to the emerging markets (as defined in chapter 4.3)
» The exposure is calculated using the same formulas as described in chapter 17.1.4
» Red Chips as well as Chinese companies listed in Hong Kong, but operating in Mainland China are excluded from the universe

Composition list
» The composition is determined based on the exposure to emerging markets
» All companies on the selection list with an exposure towards emerging markets higher than 33% are selected

Weighting Scheme:
The weight of each component is calculated using the company’s free-float market capitalization and the exposure to emerging markets as following:

$$\text{Weight}_i = \frac{\text{EM Exposure}_i \times \text{Free Float Market Capitalization}_i}{\sum_{i=1}^{n} \left(\text{EM Exposure}_i \times \text{FreeFloatMarketCapitalization}_i\right)}$$

Review frequency: The index is reviewed annually in September.

Weighting cap factors: The components are capped based on the exposure factor.

17.3.3. ONGOING MAINTENANCE

Replacements: No replacements.

Fast Exit: Not applicable.

Fast entry: Not applicable.

17. STOXX EXPOSURE INDICES

Spin-Offs: Spin-Offs are not added permanently.

18. STOXX THEMATIC INDICES

18.1. STOXX GLOBAL ARTIFICIAL INTELLIGENCE INDEX

18.1.1. OVERVIEW

Derived from the STOXX® Developed & Emerging Markets Total Market Index, the STOXX® Global Artificial Intelligence Index is comprised of companies that are positively exposed to artificial intelligence (AI). AI is the science of creating computing programs that mimic – as closely as possible – the patterns of learning, growth and mastery exhibited in human intelligence. As AI develops, these companies are positioned to take advantage of the long-term trend towards automation, which may have a substantial impact on their revenue in the future.
Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial positive AI exposure.

Universe: The index universe is defined as all stocks from the STOXX Developed and Emerging Total Market index.

Weighting scheme: The indices are weighted proportionally to the free-float market cap of selected stocks multiplied by the aggregate revenue exposure of each stock to the Sectors listed below.

Base values and dates: 100 on 18 June 2012.

Index types and currencies: Price, net return, gross return in EUR and USD.

18.1.2. INDEX REVIEW

For each STOXX Global Artificial Intelligence Index the companies in the index universe are screened for all of the following criteria (applied in the order in which they are listed):

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than one million EUR
» **Revenues:** more than 50% of revenues over the past year generated within the aggregate of the RBICS sectors associated with AI (see table below)
» **Multiple share lines:** in case a company is present with multiple listings in an index, only the most liquid share line will be kept

List of RBICS sectors associated with AI for the purposes of constituent selection:

- Programmable Logic Device Semiconductors (551020351510)
- Video Multimedia Semiconductors (551020401525)
- Other Programmable Logic and ASIC Semiconductors (551020351010)
- Microprocessor (MPU) Semiconductors (551020302510)
- Imaging Laboratories (351515151510)
- Communication and Collaboration Content Sites (552010351015)
- Web Search Sites and Software (552010351520)
- Web Navigation Sites and Software (552010351510)
- Business Intelligence Software (552015151510)
- Machine Vision and Quality Control Manufacturing (401020202010)
- Data Storage Drives and Peripherals (551520201010)
- Data Storage Media (551520201510)
- Multi-Type Data Storage Hardware Makers (551520202510)
- Colocation and Data Center Services (552010201010)
- Data Transport Carrier Services (601010301015)

- Disk Storage Systems (551520202010)
- Information Storage Systems (551520202015)
- Other Memory Semiconductors (551020251510)
- Networking Semiconductors (551020401010)
- Flash Memory Semiconductors (551020251010)
- Other Nonvolatile Memory Semiconductors (551020251015)

Review frequency: The index composition is reviewed annually in June. The review cut-off date is the last trading day of the preceding May. The index Weighting Cap Factors are recalculated quarterly in March, June, September and December.

Weighting cap factors: Index weighting cap factors are recalculated quarterly in March, June, September and December. They are published on the second Friday of each of those months and based on the stocks' prices of the preceding Thursday.

Initial weight calculation:

$$w_i = \frac{ae_i \cdot ff_i}{\sum_j ae_j \cdot ff_j}$$

ae_i is the sum of all exposures of company *i* to the sectors that are included in the index;
ff_i is the free float market capitalization of company *i*

Capped weight calculation
The capped weights (cw_i) are derived from the initial weights via an iterative process that seeks to maintain the following conditions:

- The sum of all weights above 4.5% should not exceed 35%
- No single weight should exceed 8%

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their current weight in the index.

In the event that 19 or fewer securities are included in the index, the capped weights for all securities will be equal to 1/n where n is the number of securities included in the index.

Weight factor calculation

$$wcf_i = \frac{cw_i}{p_i} \times 10{,}000{,}000{,}000$$

rounded to the closest integer and where:
cw_i is the capped weight of company i as described above
p_{s_i}= close price in EUR of company i on the Thursday preceding the second Friday of the review month
wcf_i= weighting cap factor of company i

18.1.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Developed & Emerging TMI are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently.

Mergers and takeovers: The original stock is replaced by the surviving stock.

18.2. STOXX GLOBAL DIGITAL SECURITY INDEX

18.2.1. OVERVIEW

The STOXX Global Digital Security Index is comprised of companies from selected countries exposed to a defined theme: Digital Security. This includes firms which are involved in the transmission, safeguarding and/or handling of sensitive data and/or access control of secure locations (e.g. data centers). These companies, or components of their business lines, are positioned to benefit from long-term structural trends driving economic change and which, in the future, may have a substantial impact on their performance.

Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial exposure to the respective themes.

The indices are also taking ESG considerations into account. Companies that are non-compliant with the Global Standards Screening (GSS) or are involved in Controversial Weapons activities, or display a Severe (Category 5) Controversy Rating, as identified by Sustainalytics, are excluded. Additional exclusion filters are incorporated, screening companies for involvement in Weapons (Small Arms and Military Contracting), Unconventional Oil & Gas (Arctic Oil and Gas Exploration, Oil Sands and Shale Energy), Conventional Oil & Gas, Thermal Coal, Nuclear Power and Tobacco.

Universe: The index universe is defined as all stocks from the STOXX Global Total Market index.

Weighting scheme: The index constituents are weighted according to adjusted equal weights. Weight factors are published on the second Friday of the Review month and based on the stocks' prices of the preceding Thursday.

Base values and dates: 1000 on 18 June 2012

Index types and currencies: Price, Net and Gross Return in EUR and USD

Dissemination calendar: STOXX Europe calendar

18.2.2. INDEX REVIEW

In order to be included in the STOXX Global Digital Security Index, the companies in the index universe are screened for all of the following criteria:

» **Country classification:** stocks classified as belonging to the eligible countries list

» **Minimum liquidity:** 3-month median daily traded volume (MDTV) greater than one million EUR

» **Minimum size:** free-float market capitalization greater than 200 million EUR

» **Revenues:** more than 50% of revenues generated within the sectors associated with the Digital Security theme. Within each individual index, the threshold is lowered to 45% for current components.

STOXX uses FactSet Research Systems granular analysis to determine a company's position within the subsectors of its FactSet Revere Business Industry Classification System (FactSet RBICS). FactSet Revere is a sector, supply chain, and geographic risk taxonomy expert.

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

» **Controversial Weapons**: STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons
The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.
The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

» **Product Involvement**: STOXX will exclude companies that Sustainalytics identifies to have

- **Weapons:**
  i) Small Arms:
  »>0% revenues from manufacturing and selling assault weapons to civilian customers
  »>10% revenues from manufacturing and selling small arms to military / law enforcement customers
  »>5% revenues from manufacturing and selling key components of small arms
  »>5% revenues from retail and/or distribution of assault weapons
  »>5% revenues from retail and/or distribution of small arms (non-assault weapons)
  »>0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers
  ii) Military Contracting:
  »>10% revenues from manufacturing military weapons systems and/or integral, tailor made components of these weapons
  »>10% revenues from tailor made products and/or services that support military weapons

- **Unconventional Oil & Gas:**
  i) Arctic Oil and Gas Exploration:
  »>0% revenues Oil & Gas exploration & extraction in Arctic regions
  »>10% significant ownership (extraction) of a company that is involved in Oil & Gas exploration & extraction in Arctic regions
  ii) Oil Sands:
  »>0% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day
  »>10% significant ownership of a company that is involved in extraction of oil sands
  iii) Shale Energy:
  »>0% revenues from shale energy exploration and/or production
  »>10% significant ownership of a company that is involved in shale energy exploration and/or production

- **Conventional Oil & Gas:**
  »>0% revenues from oil and gas exploration, production, refining, transportation and/or storage
  This category evaluates oil and gas related activities' share of total company's revenue. Assessments are made for producers, refiners, transporters, and companies engaged in storage (proxy: revenues).
  »>10% significant ownership of a company that is involved in exploration, production, refining, transportation and storage of oil and/or gas
  »>25% revenues from providing tailor-made products and services that support oil and gas exploration, production, refining, transportation and storage (proxy: revenues)
  »>25% revenues from generating electricity from oil and/or gas (proxy: generating capacity)

- **Thermal Coal:**
  »>0% revenues from thermal coal extraction (including thermal coal mining and exploration)
  »>10% significant ownership of a company that is involved in the extraction of thermal coal
  »>0% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants)
  »>10% significant ownership of a company that is involved in the generating electricity from thermal coal

- **Nuclear Power:**
  »>25% revenues from nuclear power production:
  - Utilities that own/operate nuclear power generators
    Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power

  »>25% revenues from nuclear power supporting products / services, including:
  - Design and construction of nuclear power plants
  - Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls
  - Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
  - Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate

  »>25% revenues from nuclear power distribution, including:
  - The resale or distribution of electricity generated from nuclear power;
  - This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix
    Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

- **Tobacco:**
  »>0% revenues from manufacturing tobacco products
  »>10% significant ownership of a company that is involved in the manufacturing tobacco products
  »>0% revenues from supplying tobacco-related products/services

»>10% significant ownership of a company that is involved in supplying tobacco-related products/services
»>0% revenues from the distribution and/or retail sale of tobacco products.
»>10% significant ownership of a company that is involved in distribution and/or retail sale (>10% total revenues) of tobacco products.

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

If information on any of the above fields is missing for a company, then it is excluded from the eligible universe.

The STOXX Global Digital Security Index aims to have a minimum number of 80 constituents at each review. If the screening process above described results to be too restrictive, the revenue filter is progressively lowered in steps of 5% for the index, to a minimum of 30%, until the number of constituents is equal to or greater than 80 (i.e. all stocks which pass the lowered threshold are added to the index).

The eligible countries are defined as follows:

Australia	Japan	Brazil	Peru
Austria	Netherlands	Chile	Philippines
Belgium	New Zealand	China (B, H shares, Red Chips)	Poland
Canada	Norway	Colombia	South Africa
Denmark	Portugal	Czech Republic	Taiwan
Finland	Singapore	Egypt	Thailand
France	Spain	Greece	Turkey
Germany	Sweden	Hungary	
Hong Kong	Switzerland	India	
Ireland	United Kingdom	Indonesia	
Israel	United States	Korea	
Italy		Malaysia	
		Mexico	

The included FactSet RBICS sectors are:

Nr.	Digital Security L6 RBICS sectors
01	Access Systems Manufacturing
02	Aerospace and Defense IT Services
03	Alarm Systems Manufacturing
04	Carrier Core (Backbone) Equipment

05	Carrier Edge Network Management Equipment
06	Closed Circuit Television (CCTV) Systems/Products
07	Colocation and Data Center Services
08	Customer Premises Network Security Equipment
09	Diversified Electronic Security Equipment
10	Diversified IT Infrastructure Software
11	Document Management Software
12	Electronic Security Identification Equipment
13	Electronic System Security Equipment
14	Enterprise Security Management Software
15	Fixed Microwave Systems Equipment
16	General Analog and Mixed Signal Semiconductors
17	General Carrier Edge (Access) Equipment
18	General Information Technology (IT) Consulting
19	General Infrastructure and Network Consulting
20	General Internet and Online Services
21	General Security Services
22	Government IT Services
23	Healthcare IT Services
24	Inspection and Detection Systems Manufacturing
25	Mixed Building/Physical Security Equipment Makers
26	Monitoring and Control Sensor/Instrument Products
27	Network Administration Software
28	Network Security Access Policy Software
29	Network Security Software
30	Other Local Area Networking Equipment
31	Other Network Software
32	Other Wide Area Networking (WAN) Equipment
33	Point-of-Sale (POS) Terminal Manufacturing
34	Security and Identification Semiconductors
35	Security and Management Consulting
36	Security Systems Services
37	Wireless and Wi-Fi Equipment
38	Wireline Equipment

Review frequency: The index is reviewed annually in June. The review cut-off date for the observation of the parent index, liquidity, size, revenues and ESG information is the last index dissemination day in May. Furthermore, on a quarterly basis in September, December and March, current components are screened for their Controversy Rating. The cut-off date for this exercise is the last dissemination day of August, November and February respectively. If a current component is observed to have a Category 5 Controversy Rating, it is removed from the index, effective on the next dissemination day following the 3rd Friday of the month. If no current component has been assessed as such, no further capping applies.

Weighting cap factors: Components are weighted by adjusted equal weight with a multiplier set as $L = 5$. This is achieved by following steps 1-5 below. Weight factors are calculated annually in

18. STOXX THEMATIC INDICES

June. They are published on the second Friday of June, based on the stocks' closing prices of the preceding Thursday.

Step1:
The companies in the portfolio are sorted by their free-float market capitalization in ascending order, and their initial weight is defined as:

$$w_i = \frac{ffmcap_i}{\sum_{j \text{ in comp list}}^{N} ffmcap_j}$$

where:

$ffmcap_i$	the free-float market capitalization of company i on the Thursday preceding the second Friday of the review month
N	the number of companies in the index

The companies are also assigned a rank from 1, for the company with the lowest free-free float market capitalization, to N, for the one with the highest.

For the purposes of the above weight calculation, if a company is present with multiple listings in the portfolio, then the issuer's weight is calculated by summing the free-float market capitalization of all its listings, and only one rank is assigned to it.

Step 2:
An iterative process takes place where for each company in the ranking list formed in step 1, a cumulative weight is calculated such that:

$$Sw_i = (N - n_i) * w_i + \sum_{1}^{n_i} w_j$$

where:

w_i	the initial weight calculated for company i
n_i	the ranking assigned to company i
$\sum_{1}^{n_i} w_j$	the sum of weights (as calculated in step 1) of the companies ranking from 1 to n_i
N	the number of companies in the corresponding thematic index

Step 3:
The company with rank Z, is identified as the first one in the ranking list where the cumulative weight, exceeds the inverse of the multiplier, i.e. $Sw_z \geq 1/L$.

Step 4:
A normalization factor W_Z is calculated, such that:

$$W_Z = w_Z - \frac{Sw_z - \frac{1}{L}}{N - Z + 1}$$

Step 5:
The final weights are calculated as follows:

18. STOXX THEMATIC INDICES

$$fw_i = \begin{cases} w_i * L \text{ , if } n_i < Z \\ W_Z * L \text{ , if } n_i \geq Z \end{cases}$$

Furthermore, in the case where a company is present with multiple listings in the portfolio, then the final weight calculated for the company, is allocated to each share line according to its free-float market capitalization.

Finally, the weighting factors are calculated such that:

$$wf_{i,ki} = \frac{fw_{i,k}}{p_{i,k}} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer and where:

$p_{i,k}$ close price of share line k of company i on the Thursday preceding the second Friday of the review month

$wf_{i,k}$ weight factor of share line k of company i.

18.2.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Global Total Market index are deleted from the STOXX Global Digital Security Index. Any deleted stocks are not replaced.

Fast Exit: Not applicable.

Fast entry: Not applicable.

Spin-Offs: Spin-off companies are not added permanently.

18. STOXX THEMATIC INDICES

18.3. STOXX GLOBAL FINTECH INDEX

18.3.1. OVERVIEW

The STOXX® Global Fintech Index is comprised of companies associated with financial technology (fintech). These businesses use technology to change how financial services are offered to end customers, and/or to boost the competitive edge of traditional financial services providers by improving efficiencies and driving new products and solutions. As the evolution of fintech progresses, and its support from governments and regulators increases, these companies are well-positioned to benefit from the long-term trend towards fintech, which may have a substantial impact on their revenues in the future.
Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial fintech exposure.

Universe: The STOXX Developed and Emerging Total Market index, as observed on the review effective date defines the index universe.

Weighting scheme: The index is weighted proportionally to the free-float market cap of the selected stocks multiplied by the aggregate revenue exposure of each stock to the sectors listed below.

Base values and dates: 100 on June 18, 2012

Index types and currencies: Price, net return, gross return in EUR, USD and JPY

Dissemination calendar: STOXX Europe calendar

18.3.2. INDEX REVIEW

All companies in the index universe are screened for all of the following criteria (applied in the order in which they are listed):

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than one million EUR
» **Revenues:** more than 50% of revenues over the past year generated within the aggregate of the RBICS sectors associated with Fintech (see table below)
» **Multiple share lines:** in case a company is present with multiple listings, only the most liquid share line is considered

List of RBICS sectors associated with Fintech for the purposes of constituent selection:

- Alternative Exchanges and ECNs (302010252510)
- Automated Teller Machines (ATMs) (303010153010)
- Automated Teller Machines (ATMs) Hardware Makers (551510201010)
- Blockchain Technology (303015101040)
- Commercial Bank and Credit Union Software (303015101010)
- Commodities Trading Services (302010252010)
- Credit and Information Bureaus (101015103010)
- Cryptocurrency Trading/Exchanges (303010153030)
- Diversified Brokerage Services (302010251010)
- Diversified Enterprise Resource Planning Software (552015153015)
- Electronic Payment Processing (303010153015)
- Finance and Banking Systems Production (551510201015)
- Finance Information and News Media and Sites (552010101025)
- Financial and Compliance ERP Software (552015153020)

- Institutional Brokerage Services (302010251015)
- Institutional Financial and Research Content Sites (552010301025)
- Insurance Software (303015101015)
- Investment Management/Brokerage Software (303015101020)
- Issuance and Securitization Services (302010251515)
- Market Makers and Specialists (302010251020)
- Mixed Electronic Transaction Processing (303010153020)
- Money Transfer Services (303010153025)
- Multi-Type Financial Data Content Providers/Sites (552010301030)
- Other Finance Industry Software (303015101025)
- Payment Processing Software (303015101030)
- Point-of-Sale (POS) Terminal Manufacturing (551510101510)
- Retail Brokerage Services (302010251035)
- Retail Industry Software (201515301010)
- Securities Exchanges (302010252515)
- Trade Execution Services (302010251040)
- Trading Software (303015101035)

Review frequency: The index composition is reviewed annually in June. The review cut-off date is the last dissemination day of the preceding month.

Weighting cap factors: Index weighting cap factors are calculated quarterly in March, June, September and December. They are published on the second Friday of each of these months, based on the stocks' prices of the preceding Thursday.

Initial weight calculation:

$$w_i = \frac{ae_i \cdot ff_i}{\sum_j ae_j \cdot ff_j}$$

,where:

ae_i the sum of all exposures of company *i* to the sectors associated with fintech

ff_i the free float market capitalization of company *i*, calculated using close price in EUR on the Thursday preceding the second Friday of the review month

Capped weight calculation

The capped weights (cw_i) derive from the initial weights via an iterative process that seeks to maintain the following conditions:

- The sum of all weights above 4.5% should not exceed 35%
- No single weight should exceed 8%

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their current weight in the index.

In the event that 19 or fewer securities are included in the index, the capped weights for all securities will be equal to 1/n where n is the number of securities included in the index.

Weight factor calculation

18. STOXX THEMATIC INDICES

$$wcf_i = \frac{cw_i}{p_i} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer, where:

wcf_i weighting cap factor of company i
cw_i capped weight of company i as described above
p_i close price in EUR of company i on the Thursday preceding the second Friday of the review month

18.3.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Developed & Emerging Total Market Index are not replaced.

Fast exit: Not applicable

Fast entry: Not applicable

Spin-offs: Spin-offs are not added permanently.

Mergers and takeovers: The original stock is replaced by the surviving stock.

18.4. STOXX GLOBAL ELECTRIC VEHICLES & DRIVING TECHNOLOGY INDEX

18.4.1. OVERVIEW

The STOXX Global Electric Vehicles & Driving Technology Index is comprised of companies from selected countries exposed to a defined theme: electric vehicles and assisted-driving technologies. This includes firms which are involved in the manufacturing of electric and autonomous vehicles, battery suppliers for electric vehicles, and other suppliers in the electric and autonomous vehicle manufacturers' supply chain. These companies, or components of their business lines, are expected to benefit from long-term structural trends driving economic change and which, in the future, may have a substantial impact on their performance.

Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial exposure to the respective themes. In addition, the index uses Factset's supply chain relationship data, which exposes business relationship interconnections among companies, providing pure exposure to the theme.

The index is also taking ESG considerations into account. Companies that are non-compliant with the Global Standards Screening (GSS) or are involved in Controversial Weapons activities, or display a Severe (Category 5) Controversy Rating, as identified by Sustainalytics, are excluded. Additional exclusion filters are incorporated, screening companies for involvement in Weapons (Small Arms and Military Contracting), Unconventional Oil & Gas (Arctic Oil and Gas Exploration, Oil Sands and Shale Energy), Conventional Oil & Gas, Thermal Coal, Nuclear Power and Tobacco.

Universe: The index universe is defined as all stocks from the STOXX Global Total Market index.

Weighting scheme: The index constituents are weighted according to adjusted equal weights. Weight factors are published on the second Friday of the Review month and based on the stocks' prices of the preceding Thursday.

Base values and dates: 1000 on 18 June 2012

Index types and currencies: Price, Net and Gross Return in EUR and USD

Dissemination calendar: STOXX Europe calendar

18.4.2. INDEX REVIEW

STOXX uses FactSet Research Systems granular analysis to determine a company's position within the subsectors of its FactSet Revere Business Industry Classification System (FactSet RBICS). FactSet Revere is a sector, supply chain, and geographic risk taxonomy expert.

At the review cut-off date an iterative process takes place to derive three groups of stocks that will compose the final index: Electric Vehicle Manufacturers, Electric Vehicle Battery Suppliers and Electric Vehicle Manufacturers' Supply Chain. The following steps are followed in the exact order as noted.

18. STOXX THEMATIC INDICES

Initially, companies with more than 50% of aggregate revenues generated within the L6 RBICS sectors listed below, are grouped and tagged as "potential Electric Vehicle Manufacturers". The threshold is lowered to 45% for current components. Companies from this pre-selection list will at a later step be screened for eligibility to be included in the final "Electric Vehicle Manufacturers" selection list.

Nr.	Potential Electric Vehicle Manufacturers
1	Alternative Energy Car Manufacturers
2	Autonomous Control Transit Production
3	Autonomous Control Truck Production
4	Commercial and Public Service Vehicles Makers
5	Conventional Engine Car Manufacturers
6	Diversified Consumer Vehicle Manufacturing
7	Heavy Duty Trucks and Trailers Makers
8	Multi-Type Car Manufacturers
9	Other Commercial Transportation Equipment Makers

Similarly, companies with more than 50% of revenues generated within the RBICS sector "Heavy-Duty and High-End Batteries Manufacturing" are grouped and tagged as "potential Electric Vehicle Battery Suppliers". The threshold for current components is 45% for this group also.

Consequently, all companies in the "potential Electric Vehicle Battery Suppliers" pre-selection list, are screened for their customers, and if they are supplying companies which fall in the "potential Electric Vehicle Manufacturers" pre-selection list, then these companies are included in the final "Electric Vehicle Battery Suppliers" selection list.

Similarly, companies from the "potential Electric Vehicle Manufacturers" pre-selection list that are customers of companies in the "potential Electric Vehicle Battery Suppliers" pre-selection list, are also included in their corresponding selection list: "Electric Vehicle Manufacturers".

Moreover, two additional screenings are applied to the remaining companies in the "potential Electric Vehicle Manufacturers" pre-selection list. If a company is highlighted as not being a customer of any "potential Electric Vehicle Battery Suppliers", then it is only admitted in the "Electric Vehicle Manufacturers" selection list if:

- It has more than 50% of aggregate revenues generated within the following sectors (45% in the case of current components):
  - Alternative Energy Car Manufacturers
  - Autonomous Control Transit Production
  - Autonomous Control Truck Production

, or:

- It has more than 0% of revenues generated within:
  - Heavy-Duty and High-End Batteries Manufacturing

Finally, all companies that are suppliers of "Electric Vehicle Manufacturers", and have more than 50% of aggregate revenues generated within the sectors below, are included in the "Electric Vehicle Manufacturers' Supply Chain" selection list. Once again, the threshold stands at 45% for current components.

Nr.	Potential Electric Vehicle Manufacturers' Supply Chain
1	Auto Exterior Comfort/Safety/Electronics Products
2	Auto Interior Comfort/Safety/Electronics Products
3	Automotive and Marine Electronics Manufacturing
4	Conventional Flat Panel Display Equipment
5	Diversified Electrical/Power System Manufacturing

18. STOXX THEMATIC INDICES

6 Diversified Semiconductors
7 Electric Motors Manufacturing
8 Electrical Systems and Equipment Manufacturing
9 Electronic Interconnect Components
10 Electronic Materials Manufacturing
11 Fuse Passive Electronic Components
12 General Analog and Mixed Signal Semiconductors
13 Global Positioning Systems (GPS) Manufacturing
14 Heavy-Duty and High-End Batteries Manufacturing
15 Image Sensor and Image Capture Semiconductors
16 Microprocessor (MPU) Semiconductors
17 Monitoring and Control Sensor/Instrument Products
18 Motion Control and Precision Motors Manufacturing
19 Multi-Type Motor Vehicle Parts Manufacturers
20 Optoelectronics Electronic Components
21 Other Auto Comfort, Safety and Electronic Products
22 Other Communications Semiconductors
23 Other Discrete Semiconductors
24 Other Electric Motors and Motion Control Products
25 Other Industrial Electrical Product Manufacturing
26 Other Module and Subassembly Electronic Components
27 Other Optoelectronics Discrete Semiconductors
28 Other Passive Electronic Components
29 Other Power Analog and Mixed Signal Semiconductors
30 Other Processor Semiconductors
31 Pan-Powertrain and Chassis Manufacturing
32 Peripheral Semiconductors
33 Power Module and Subassembly Electronic Components
34 Powertrain and Chassis Thermal Management Products
35 Powertrain Manufacturing
36 Programmable Logic Device Semiconductors
37 Specialty Analog and Mixed Signal Semiconductors
38 Vehicle Autonomous Control Electronics Makers
39 Vehicle Autonomous Control Software
40 Video Multimedia Semiconductors

In order to be included in the STOXX Global Electric Vehicles & Driving Technology Index, the companies in the three selection lists ("Electric Vehicle Manufacturers", "Electric Vehicle Battery Supplier" and "Electric Vehicle Manufacturers' Supply Chain") are screened for all of the following criteria:

» **Country classification:** stocks classified as belonging to the eligible countries list

» **Minimum liquidity:** 3-month median daily traded volume (MDTV) greater than one million EUR

» **Minimum size:** free-float market capitalization greater than 200 million EUR

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

» **Controversial Weapons**: STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons
The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.
The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

» **Product Involvement**: STOXX will exclude companies that Sustainalytics identifies to have

- **Weapons:**
  i) **Small Arms:**
  »>0% revenues from manufacturing and selling assault weapons to civilian customers
  »>10% revenues from manufacturing and selling small arms to military / law enforcement customers
  »>5% revenues from manufacturing and selling key components of small arms
  »>5% revenues from retail and/or distribution of assault weapons
  »>5% revenues from retail and/or distribution of small arms (non-assault weapons)
  »>0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers
  ii) **Military Contracting:**
  »>10% revenues from manufacturing military weapons systems and/or integral, tailor made components of these weapons
  »>10% revenues from tailor made products and/or services that support military weapons

- **Unconventional Oil & Gas:**
  i) **Arctic Oil and Gas Exploration:**
  »>0% revenues Oil & Gas exploration & extraction in Arctic regions
  »>10% significant ownership (extraction) of a company that is involved in Oil & Gas exploration & extraction in Arctic regions
  ii) **Oil Sands:**
  »>0% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day
  »>10% significant ownership of a company that is involved in extraction of oil sands
  iii) **Shale Energy:**
  »>0% revenues from shale energy exploration and/or production
  »>10% significant ownership of a company that is involved in shale energy exploration and/or production

- **Conventional Oil & Gas:**
  »>0% revenues from oil and gas exploration, production, refining, transportation and/or storage
  This category evaluates oil and gas related activities' share of total company's revenue. Assessments are made for producers, refiners, transporters, and companies engaged in storage (proxy: revenues).
  »>10% significant ownership of a company that is involved in exploration, production, refining, transportation and storage of oil and/or gas
  »>25% revenues from providing tailor-made products and services that support oil and gas exploration, production, refining, transportation and storage (proxy: revenues)

»>25% revenues from generating electricity from oil and/or gas (proxy: generating capacity)

- **Thermal Coal:**
  »>0% revenues from thermal coal extraction (including thermal coal mining and exploration)
  »>10% significant ownership of a company that is involved in the extraction of thermal coal
  »>0% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants)
  »>10% significant ownership of a company that is involved in the generating electricity from thermal coal

- **Nuclear Power:**
  »>25% revenues from nuclear power production:
  - Utilities that own/operate nuclear power generators
    Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power

  »>25% revenues from nuclear power supporting products / services, including:
  - Design and construction of nuclear power plants
  - Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls
  - Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
  - Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate

  »>25% revenues from nuclear power distribution, including:
  - The resale or distribution of electricity generated from nuclear power;
  - This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix
    Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

- **Tobacco:**
  »>0% revenues from manufacturing tobacco products
  »>10% significant ownership of a company that is involved in the manufacturing tobacco products
  »>0% revenues from supplying tobacco-related products/services
  »>10% significant ownership of a company that is involved in supplying tobacco-related products/services
  »>0% revenues from the distribution and/or retail sale of tobacco products.
  »>10% significant ownership of a company that is involved in distribution and/or retail sale (>10% total revenues) of tobacco products.

» **Controversy Ratings**: STOXX will exclude companies that Sustainalytics identifies to have a Controversy Rating of Category 5 (Severe).
Sustainalytics assesses companies' involvement in incidents with negative environmental, social and governance (ESG) implications. Controversy involvement is one key measure of ESG performance. A controversy is defined as an event or aggregation of events relating to

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

If information on any of the above fields is missing for a company, then it is excluded from the eligible universe.

The STOXX Global Electric Vehicles & Driving Technology Index aims to have a minimum number of 80 constituents at each review. If the screening process described above results in being too restrictive, the revenue filter for the “potential Electric Vehicle Battery Suppliers” is progressively lowered in steps of 5%, and the selection process is repeated until the number of constituents is equal to or greater than 80. If for a threshold of 5%, the process still returns less than 80 components, then all companies with a revenue exposure above 0% are considered as “potential Electric Vehicle Battery Suppliers”, and the selection process is repeated.

If again the process returns less than 80 companies, the revenue filters for both “potential Electric Vehicle Manufacturers” and “potential Electric Vehicle Manufacturers’ Supply Chain” are then progressively lowered in steps of 5%, in a similar way as explained above, until the minimum number of companies is met.

During the iterative process explained above, the revenue thresholds for current components, are correspondingly lowered for all groups, just so they are 5% lower than the threshold set for non-components.

The eligible countries are defined as follows:

Australia	Japan	Brazil	Mexico
Austria	Netherlands	Chile	Peru
Belgium	New Zealand	China (B, H shares, Red Chips)	Philippines
Canada	Norway	Colombia	Poland
Denmark	Portugal	Czech Republic	South Africa
Finland	Singapore	Egypt	Taiwan
France	Spain	Greece	Thailand
Germany	Sweden	Hungary	Turkey
Hong Kong	Switzerland	India	
Ireland	United Kingdom	Indonesia	
Israel	United States	Korea	
Italy		Malaysia	

Review frequency: The index is reviewed annually in June. The review cut-off date for the observation of the parent index, liquidity, size, revenues, supply chain relationship and ESG information is the last index dissemination day in May. Furthermore, on a quarterly basis in September, December and March, current components are screened for their Controversy Rating. The cut-off date for this exercise is the last dissemination day of August, November and February respectively. If a current component is observed to have a Category 5 Controversy Rating, it is removed from the index, effective on the next dissemination day following the 3rd Friday of the month. If no current component has been assessed as such, no further capping applies.

18. STOXX THEMATIC INDICES

Weighting cap factors: Components are weighted by adjusted equal weight with a multiplier set as $L = 5$. This is achieved by following steps 1-5 below. Weight factors are calculated annually in June. They are published on the second Friday of June, based on the stocks' closing prices of the preceding Thursday.

Step1:
The companies in the portfolio are sorted by their free-float market capitalization in ascending order, and their initial weight is defined as:

$$w_i = \frac{\text{ffmcap}_i}{\sum_{j \text{ in comp list}}^{N} \text{ffmcap}_j}$$

where:

ffmcap_i	the free-float market capitalization of company i on the Thursday preceding the second Friday of the review month
N	the number of companies in the index

The companies are also assigned a rank from 1, for the company with the lowest free-free float market capitalization, to N, for the one with the highest.

For the purposes of the above weight calculation, if a company is present with multiple listings in the portfolio, then the issuer's weight is calculated by summing the free-float market capitalization of all its listings, and only one rank is assigned to it.

Step 2:
An iterative process takes place where for each company in the ranking list formed in step 1, a cumulative weight is calculated such that:

$$Sw_i = (N - n_i) * w_i + \sum_{1}^{n_i} w_j$$

where:

w_i	the initial weight calculated for company i
n_i	the ranking assigned to company i
$\sum_{1}^{n_i} w_j$	the sum of weights (as calculated in step 1) of the companies ranking from 1 to n_i
N	the number of companies in the corresponding thematic index

Step 3:
The company with rank Z, is identified as the first one in the ranking list where the cumulative weight, exceeds the inverse of the multiplier, i.e. $Sw_z \geq 1/L$.

Step 4:
A normalization factor W_Z is calculated, such that:

$$W_Z = w_Z - \frac{Sw_z - \frac{1}{L}}{N - Z + 1}$$

Step 5:

The final weights are calculated as follows:

$$fw_i = \begin{cases} w_i * L \text{ , if } n_i < Z \\ W_Z * L \text{ , if } n_i \geq Z \end{cases}$$

Furthermore, in the case where a company is present with multiple listings in the portfolio, then the final weight calculated for the company, is allocated to each share line according to its free-float market capitalization.

Finally, the weighting factors are calculated such that:

$$wf_{i,ki} = \frac{fw_{i,k}}{p_{i,k}} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer and where:

$p_{i,k}$ close price of share line k of company i on the Thursday preceding the second Friday of the review month

$wf_{i,k}$ weight factor of share line k of company i.

18.4.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Global Total Market index are deleted from the STOXX Global Electric Vehicles & Driving Technology Index. Any deleted stocks are not replaced.

Fast exit: Not applicable

Fast entry: Not applicable

Spin-offs: Spin-off companies are not added permanently.

18. STOXX THEMATIC INDICES

18.5. STOXX GLOBAL SHARING ECONOMY DRIVERS INDEX

18.5.1. OVERVIEW

The STOXX® Global Sharing Economy Drivers Index is comprised of companies that are prominent disruptors in the Sharing Economy trend.

Sharing Economy is an economic model that is based on acquiring, providing or sharing access to goods and services via community based platforms. The shared resources are reusable and required for a temporary use, leading to extensive and productive use of underutilized resources. The index selects companies that are the major drivers in this area.

Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial Sharing Economy Drivers exposure. Furthermore, STOXX will exclude companies that Sustainalytics considers non-compliant based on Sustainalytics Global Standards Screening (GSS) assessment or companies that Sustainalytics identifies to be involved with controversial weapons.

Universe: The STOXX Developed and Emerging Total Market index, as observed on the review effective date defines the index universe.

Weighting scheme: The index is weighted proportionally to the free-float market cap of the selected stocks multiplied by the aggregate revenue exposure of each stock to the sectors listed below.

Base values and dates: 100 on June 18, 2012

Index types and currencies: Price, net return, gross return in EUR, USD and JPY

Dissemination calendar: STOXX Europe calendar

18.5.2. INDEX REVIEW

All companies in the index universe are screened for all of the following criteria (applied in the order in which they are listed):

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than one million EUR
» **Revenues:** more than 50% of revenues over the past year generated within the aggregate of the RBICS sectors associated with Fintech (see table below)
» **Multiple share lines:** in case a company is present with multiple listings, only the most liquid share line is considered

List of RBICS sectors associated with Sharing Economy Drivers for the purposes of constituent selection:

- Construction and Mining Machinery Distributors (401520101515)
- Consumer Electronics and Appliance Rental (202515101510)
- Education Information and News Media and Sites (552010101020)
- Educational Support Services (502510101010)
- Food Delivery Services (151010202010)
- Industrial Equipment Leasing Services (303010101515)
- Internet Department Stores (501015103010)

- Media Download and Streaming Digital Content Sites (552010351030)
- Other Automotive Equipment Rental (201510201010)
- Other Leasing Services (303010101525)
- Other Post-Secondary Education (502510101515)
- Parking Facility Services (101020101035)
- Passenger Car Rental (201510201015)
- Real Estate Classifieds and Directories Sites (552010101040)
- Travel Agencies (151010302010)
- Travel Publishers (151010302510)
- Truck, Trailer and Recreational Vehicle Rental (201510201020)

Finally, on the remaining companies, the additional exclusion criteria below are applied:

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

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

The criteria for involvement are:
» Internal production or sale of controversial weapons (0% revenue threshold)
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

Review frequency: The index composition is reviewed annually in June. The review cut-off date is the last dissemination day of the preceding month.

Weighting cap factors: Index weighting cap factors are calculated quarterly in March, June, September and December. They are published on the second Friday of each of these months, based on the stocks' prices of the preceding Thursday.

Initial weight calculation:

$$w_i = \frac{ae_i \cdot ff_i}{\sum_j ae_j \cdot ff_j}$$

,where:

ae_i the sum of all exposures of company *i* to the sectors associated with Sharing Economy Drivers

ff_i the free float market capitalization of company *i*, calculated using close price in EUR on the Thursday preceding the second Friday of the review month

Capped weight calculation

The capped weights (cw_i) derive from the initial weights via an iterative process that seeks to maintain the following conditions:

- The sum of all weights above 4.5% should not exceed 35%
- No single weight should exceed 8%

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their current weight in the index.

In the event that 19 or fewer securities are included in the index, the capped weights for all securities will be equal to 1/n where n is the number of securities included in the index.

Weight factor calculation

$$wcf_i = \frac{cw_i}{p_i} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer, where:

wcf_i weighting cap factor of company i

cw_i capped weight of company i as described above

p_i close price in EUR of company i on the Thursday preceding the second Friday of the review month

18.5.3. ONGOING MAINTENANCE

Replacements:
Stocks deleted from the STOXX Developed & Emerging Total Market Index are not replaced.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent’s weight will be distributed among the remaining constituents.

Fast entry: Not applicable

Spin-offs: Spin-offs are not added permanently.

Mergers and takeovers: The original stock is replaced by the surviving stock.

18.6. STOXX GLOBAL REVENUES-BASED THEMATIC INDICES

18.6.1. OVERVIEW

The STOXX Thematic indices are comprised of companies exposed to a defined set of themes: Silver Economy, Smart Cities, Global Millennials, Industry 4.0, Smart Factory, Sharing Economy, Housing Construction and Next Generation Telecoms. These companies or components of their business lines are positioned to benefit from long-term structural trends driving social, economic and environmental change, which, in the future, will have a substantial impact on their performance.

Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial exposure to the respective themes.

Universe: The STOXX Developed and Emerging Total Market index, as observed on the review effective date defines the index universe.

Weighting scheme: The indices are weighted proportionally to the free-float market cap of the selected stocks multiplied by the aggregate revenue exposure of each stock to the sectors listed below, associated with each theme.

Base values and dates: 100 on June 18, 2012

Index types and currencies: Price, net return, gross return in EUR, USD

Dissemination calendar: STOXX Europe calendar

18.6.2. INDEX REVIEW

Selection list: All companies in the index universe are screened for all of the following criteria (applied in the order in which they are listed):

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than 1,000,000 EUR
» **Revenues:** more than 50% revenues generated within the aggregate of the RBICS sectors associated to the specific theme (see table below).
» **Multiple share lines:** in case a company is present with multiple listings in a specific thematic cluster, only the most liquid share line will be retained.

List of RBICS sectors associated with respective themes for the purposes of constituent selection:

Nr	Silver Economy
1	Ambulatory and Outpatient Care
2	Anesthesiology Devices
3	Assisted Living
4	Autonomous Control Transit Production
5	Burial Casket Manufacturing
6	Cardiology Non-Surgical Devices
7	Cardiology Surgical Devices
8	Cardiovascular System Biopharmaceuticals
9	Casinos and Casino Hotels
10	Dental Devices
11	Dietary and Naturopathic Supplements
12	Diverse Asset Management and Financial Advisors

Nr	Industry 4.0
1	3D Modeling/Rapid Prototyping Automation Providers
2	Application Management Consulting
3	Audio Multimedia Semiconductors
4	Automotive Industry Software
5	Blockchain Technology
6	Business Intelligence Software
7	Business Intelligence/Data Warehousing Consulting
8	Carrier Edge Network Management Equipment
9	Colocation and Data Center Services
10	Computer Aided Design (CAD) Software
11	Customer Premises Network Security Equipment
12	Data Storage Infrastructure Software

18. STOXX THEMATIC INDICES

13	Diverse Institutional/High-Net Advisory Finance
14	Diversified Healthcare Business Management
15	Diversified Patient Care
16	Ear, Nose and Throat (ENT) Devices
17	Full Service Hotels and Resorts
18	Funeral and Cemetery Services
19	General Analog and Mixed Signal Semiconductors
20	General and Acute Hospitals
21	General Death Care Services
22	Healthcare and Life Sciences Equity REITs
23	Healthcare Consulting
24	Hematological Oncology Biopharmaceuticals
25	Home Healthcare
26	Home Testing Clinical Diagnostics Devices
27	Household Robots
28	IC-Level Electronic Design Software
29	IC-Level Intellectual Property Software Libraries
30	Internet Department Stores
31	Internet Pharmacies and Drug Retail
32	Joint Replacement and Reconstruction Devices
33	Lower Respiratory Biopharmaceuticals
34	Luxury Hotels and Resorts
35	Microprocessor (MPU) Semiconductors
36	Mixed Usage Travel Arrangement and Reservation
37	Mixed-Type Hotels, Motels and Resorts
38	Musculoskeletal System Biopharmaceuticals
39	Neurology Biopharmaceuticals
40	Neurology Devices
41	Nutraceuticals
42	Ocean-Going Cruise Lines
43	Oncology Devices
44	Ophthalmology Biopharmaceuticals
45	Ophthalmology Devices
46	Other Building Materials and Garden Supply Stores
47	Other Communications Semiconductors
48	Other Hospitals
49	Other Long-Term Care Facilities
50	Other Memory Semiconductors
51	Other Oncology Biopharmaceuticals
52	Other Orthopedics Devices
53	Pension Funds
54	Peripheral Semiconductors
55	Pharmacies and Drug Stores
56	Plastic and Reconstructive Surgery Devices
57	Point of Care Testing Kits
58	Power, Control and Mixed Signal Semiconductors
59	Primary Patient Care
60	Private Wealth Managers
61	Programmable Logic Device Semiconductors
62	Retail Advisory Services
63	Skilled Nursing Facility (Nursing Home)
64	Specialized Patient Care
65	Tour Operators
66	Travel Agencies
67	Travel Publishers
68	Type 1 Diabetes Biopharmaceuticals
69	Urology Biopharmaceuticals
70	Urology Devices
71	Vacation Ownership Operators
72	Vehicle Autonomous Control Electronics Makers
73	Vehicle Autonomous Control Software
74	Volatile Memory Semiconductors
75	Wearable Technology

Nr	**Sharing Economy**
1	Communication and Collaboration Content Sites
2	Construction and Mining Machinery Distributors
3	Consumer Electronics and Appliance Rental
4	Education Information and News Media and Sites
5	Educational Support Services
6	Electronic Payment Processing
7	Food Delivery Services
8	Industrial Equipment Leasing Services
9	Internet Department Stores
10	Mapping/Geographic Information Systems Software

13	Disk Storage Systems
14	Drone Manufacturers
15	Drone Parts Manufacturers
16	Enterprise Middleware Software
17	Enterprise Security Management Software
18	Flash Memory Semiconductors
19	General Analog and Mixed Signal Semiconductors
20	General Enterprise Management Software
21	General Factory Automation Makers
22	General Information Technology (IT) Consulting
23	General Infrastructure and Network Consulting
24	Image Sensor and Image Capture Semiconductors
25	Industrial Robots and Robotic Assembly Line Makers
26	Information Storage Systems
27	Lasers and Optical Instrument Manufacturing
28	Machine Vision and Quality Control Manufacturing
29	Manufacturing Industry Software
30	Microprocessor (MPU) Semiconductors
31	Monitoring and Control Sensor/Instrument Products
32	Multi-Industry-Specific Factory Machinery Makers
33	Multi-Tactic Enterprise Solutions Consulting
34	Network Administration Software
35	Network Design and Implementation Consulting
36	Network Security Software
37	Operating Systems Software
38	Other Automation Support Product Manufacturing
39	Other Communications Semiconductors
40	Other Design and Engineering Software
41	Other Memory Semiconductors
42	Other Network Software
43	Other Nonvolatile Memory Semiconductors
44	Other Processor Semiconductors
45	Other Test and Measurement Equipment
46	Peripheral Semiconductors
47	Power, Control and Mixed Signal Semiconductors
48	Programmable Logic Device Semiconductors
49	RF Analog and Mixed Signal Semiconductors
50	Security and Management Consulting
51	Smart Grid Technology and Smart Meter Products
52	Software Design and Engineering Consulting
53	Solid Waste Recycling Equipment Manufacturing
54	Specialty Analog and Mixed Signal Semiconductors
55	Supply Chain ERP Software
56	Virtual Reality Design and Engineering Software
57	Virtual Reality Equipment
58	Volatile Memory Semiconductors
59	Wireline Equipment

Nr	**Housing Construction**
1	Access Systems Manufacturing
2	Alarm Systems Manufacturing
3	Building Construction
4	Building Maintenance and Engineering Services
5	Cabinets and Countertops Manufacturing
6	Cement Manufacturing
7	Closed Circuit Television (CCTV) Systems/Products
8	Concrete Blocks, Bricks and Aggregates Makers
9	Decorative Component Manufacturing
10	Electrical Systems and Equipment Manufacturing
11	Flooring Manufacturing
12	General Analog and Mixed Signal Semiconductors
13	General Architectural Component Manufacturing
14	General Building Materials Retail
15	General Coatings and Paints Makers
16	General Construction Materials Manufacturing
17	Hardware, Plumbing and HVAC Supplies
18	Heating, Ventilation and Air Conditioning Products
19	Home Builders
20	IC-Level Electronic Design Software
21	IC-Level Intellectual Property Software Libraries
22	Industrial and Engineering Hand Tool Manufacturing
23	Insulation Manufacturing
24	Integrated Steel Mills Mixed Production Makers
25	Interior and Exterior Covering Materials Stores
26	Lime and Gypsum Products Manufacturing

18. STOXX THEMATIC INDICES

11	Media Download and Streaming Digital Content Sites
12	Other Automotive Equipment Rental
13	Other Leasing Services
14	Other Post-Secondary Education
15	Parking Facility Services
16	Passenger Car Rental
17	Payment Processing Software
18	Real Estate Classifieds and Directories Sites
19	Travel Agencies
20	Travel Publishers
21	Truck, Trailer and Recreational Vehicle Rental

Nr	Smart Factory
1	3D Modeling/Rapid Prototyping Automation Providers
2	Computer Aided Design (CAD) Software
3	Flash Memory Semiconductors
4	General Analog and Mixed Signal Semiconductors
5	General Factory Automation Makers
6	Industrial Robots and Robotic Assembly Line Makers
7	Lasers and Optical Instrument Manufacturing
8	Machine Vision and Quality Control Manufacturing
9	Manufacturing Industry Software
10	Microprocessor (MPU) Semiconductors
11	Multi-Industry-Specific Factory Machinery Makers
12	Other Automation Support Product Manufacturing
13	Other Communications Semiconductors
14	Other Memory Semiconductors
15	Other Nonvolatile Memory Semiconductors
16	Other Processor Semiconductors
17	Peripheral Semiconductors
18	Power, Control and Mixed Signal Semiconductors
19	Programmable Logic Device Semiconductors
20	RF Analog and Mixed Signal Semiconductors
21	Solid Waste Recycling Equipment Manufacturing
22	Specialty Analog and Mixed Signal Semiconductors
23	Supply Chain ERP Software
24	Volatile Memory Semiconductors

Nr	Smart Cities
1	Access Systems Manufacturing
2	Alarm Systems Manufacturing
3	Alternative Energy Car Manufacturers
4	Autonomous Control Transit Production
5	Autonomous Control Truck Production
6	Closed Circuit Television (CCTV) Systems/Products
7	Customer Premises Network Security Equipment
8	Diversified Electrical/Power System Manufacturing
9	Diversified Semiconductor Manufacturing Services
10	Diversified Technology Hardware
11	Drone Manufacturers
12	Drone Parts Manufacturers
13	Education Information and News Media and Sites
14	Educational Support Services
15	Electronic Security Identification Equipment
16	Electronic System Security Equipment
17	Energy Efficient Lighting and LED Manufacturing
18	Enterprise Middleware Software
19	Enterprise Security Management Software
20	Flash Memory Semiconductors
21	Fuel Cell Equipment and Technology Providers
22	General Communications Equipment
23	Healthcare Management Software
24	Healthcare Operations Support Software
25	Household Robots
26	Microprocessor (MPU) Semiconductors
27	Mixed Renewable Energy Generation Manufacturing
28	Network Security Software
29	Other Memory Semiconductors
30	Other Nonvolatile Memory Semiconductors
31	Other Optoelectronics Discrete Semiconductors
32	Other Post-Secondary Education
33	Other Wireless Equipment
34	Photovoltaic and Solar Cells and Systems Providers
35	Power, Control and Mixed Signal Semiconductors
36	Programmable Logic Device Semiconductors
37	Locks and Deadbolts Manufacturing
28	Manufactured Building Makers
29	Microprocessor (MPU) Semiconductors
30	Minimills Manufacturing Flats
31	Mining and Excavation Equipment Manufacturing
32	Mixed Architecture/Infrastructure Component Makers
33	Mixed Building/Physical Security Equipment Makers
34	Mixed Heavy Building Materials/Aggregates Makers
35	Mixed Specialty and Commodity Chemical Makers
36	Multi-Product Adhesive, Sealant and Paint Makers
37	Oriented Strand Board (OSB) Manufacturing
38	Other Communications Semiconductors
39	Other Construction Wood Products Makers
40	Other Memory Semiconductors
41	Other Metal Processing and Recycling Providers
42	Paints Manufacturing
43	Peripheral Semiconductors
44	Photovoltaic and Solar Cells and Systems Providers
45	Pipes and Pipe Fittings Manufacturing
46	Plumbing Fixtures and Trim Manufacturing
47	Power, Control and Mixed Signal Semiconductors
48	Programmable Logic Device Semiconductors
49	Public Infrastructure Components Manufacturing
50	Ready-Mix Concrete Makers
51	Residential Specialty Engineering Contractors
52	Structural Support Component Manufacturing
53	Tools and Outdoor Care Building Hand Tool Products
54	Utility Meter Manufacturing
55	Volatile Memory Semiconductors
56	Windows and Doors Manufacturing

Nr	Next Generation Telecoms
1	Asia (Excluding China) Wireless Services
2	Asia (Excluding China) Wireline Services
3	Australia and New Zealand Wireless Services
4	Australia and New Zealand Wireline Services
5	Cable Equipment
6	Cable Interconnect Components
7	Call Management and Routing Services
8	Canada Wireline Services
9	Carrier Core (Backbone) Equipment
10	Carrier Edge Network Management Equipment
11	Cellular Site Equipment
12	Central and Eastern Europe Wireless Services
13	Central and Eastern Europe Wireline Services
14	Central and South America Wireless Services
15	Central and South America Wireline Services
16	China Wireless Services
17	China Wireline Services
18	Colocation and Data Center Services
19	Data Transport Carrier Services
20	Disk Storage Systems
21	Diversified Satellite Services
22	Electronic Interconnect Components
23	Fixed Microwave Systems Equipment
24	General Carrier Edge (Access) Equipment
25	General Communications Equipment
26	General Communications Services
27	General Customer Premises Equipment (CPE)
28	General United States Telecommunications Services
29	IC-Level Electronic Design Software
30	IC-Level Intellectual Property Software Libraries
31	International Fixed Satellite Services
32	International Mobile Satellite Services
33	Lasers and Optical Instrument Manufacturing
34	Mexico Wireline Services
35	Microprocessor (MPU) Semiconductors
36	Middle East and Africa Wireless Services
37	Middle East and Africa Wireline Services
38	Mixed International Telecommunications Services
39	Multiregion Wireless Services
40	Multiregion Wireline Services
41	Multi-Type United States Wireless Services
42	Multi-Type United States Wireline Services
43	Network Administration Software

37	RF Analog and Mixed Signal Semiconductors
38	RFID Asset Tracking Equipment Manufacturing
39	Security and Management Consulting
40	Server Computer Systems
41	Smart Grid Technology and Smart Meter Products
42	Specialty Analog and Mixed Signal Semiconductors
43	Test and Measurement Communications Equipment
44	Utility Meter Manufacturing
45	Vehicle Autonomous Control Electronics Makers
46	Vehicle Autonomous Control Software

Nr	**Millennials**
1	Activewear and Outerwear Apparel Production
2	Athletic Footwear Production
3	Budget Hotels and Motels
4	Career Classifieds and Directories Media and Sites
5	City Guides Content Providers and Sites
6	Communication and Collaboration Content Sites
7	Console Games Software
8	Dietary and Naturopathic Supplements
9	Education Information and News Media and Sites
10	Electronic Gaming/Entertainment Electronics Makers
11	Events, Tickets and Mixed-Type Recreation
12	Fitness and Exercise Equipment
13	Fitness and Recreational Sports Centers
14	Food Delivery Services
15	General Entertainment Content Providers and Sites
16	Handheld and Smart Phone Games Software
17	Internet Accessories Retail
18	Internet Apparel Retail
19	Internet Department Stores
20	Internet Discount Stores
21	Internet Electronics Retail
22	Internet Entertainment Retail
23	Internet Footwear Retail
24	Internet Off-Price Retail
25	Internet Warehouse / Superstore Retail
26	Media Download and Streaming Digital Content Sites
27	Mixed Apparel and Footwear Production
28	Mixed Usage Travel Arrangement and Reservation
29	Mobile Platform Applications Software
30	Nutraceuticals
31	Nutritional Supplement OEMs
32	Off-Price Retail Stores
33	Online Game Websites and Software
34	Other Automotive Equipment Rental
35	Other Classifieds and Directories Media and Sites
36	Other Games Software
37	Other Sporting and Athletic Goods
38	Passenger Car Rental
39	Performing Arts and Exhibitions
40	Smart Phone Manufacturing
41	Sporting Goods Stores
42	Team, Individual and Other Sports Manufacturing
43	Travel Agencies
44	Travel Publishers
45	Virtual Reality Equipment
46	Wearable Technology
47	Web Search Sites and Software
48	Winter Sports

44	Networking Semiconductors
45	Optoelectronics Electronic Components
46	Other Carrier Services
47	Other Cellular Phones Manufacturing
48	Other Communications Semiconductors
49	Other Core Infrastructure Equipment
50	Other Handheld and Smart Phone Software
51	Other Interconnect Components
52	Other Local Area Networking Equipment
53	Other Memory Semiconductors
54	Other Nonvolatile Memory Semiconductors
55	Other Optoelectronics Discrete Semiconductors
56	Other Processor Semiconductors
57	Other Satellite Equipment
58	Other Telecommunications Industry Software
59	Other Test and Measurement Equipment
60	Other United States Wireline Voice Services
61	Other Wide Area Networking (WAN) Equipment
62	Other Wireless Equipment
63	Pan-America Wireless Services
64	Pan-America Wireline Services
65	Pan-Asia/Pacific Wireless Services
66	Pan-Asia/Pacific Wireline Services
67	Pan-Europe Wireless Services
68	Pan-Europe Wireline Services
69	Peripheral Semiconductors
70	Programmable Logic Device Semiconductors
71	RF Analog and Mixed Signal Semiconductors
72	Smart Phone Manufacturing
73	Tandem Interconnection Services
74	Telecommunications Construction
75	Telecommunications Customer Relationship Software
76	Telecommunications Operations Support Software
77	Test and Measurement Communications Equipment
78	United States Long Distance Voice Services
79	United States Satellite Services
80	United States Video and Television Services
81	United States Wireless Business Data Services
82	United States Wireless Voice Services
83	United States Wireline Business Data Services
84	United States Wireline Data Services
85	US Voice Over IP Telephony (VoIP) Services
86	Volatile Memory Semiconductors
87	Western Europe Wireless Services
88	Western Europe Wireline Services
89	Wireless and Wi-Fi Equipment
90	Wireless Infrastructure Services
91	Wireline Equipment

Finally, on the remaining companies, the additional exclusion criteria below are applied:

Global Standards Screening:
STOXX will exclude companies that are non-compliant based on the Sustainalytics Global Standards Screening assessment. Global Standards Screening identifies companies that violate or are at risk of violating commonly accepted international norms and standards, enshrined in the United Nations Global Compact (UNGC) Principles, the Organisation for Economic Co-operation

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.
The criteria for involvement are:

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

Review frequency: The index composition is reviewed annually in June. The review cut-off date is the last dissemination day of the preceding month.

Weighting cap factors: Index weighting cap factors are calculated quarterly in March, June, September and December. They are published on the second Friday of each of these months, based on the stocks' prices of the preceding Thursday.

Initial weight calculation:

$$w_i = \frac{ae_i \cdot ff_i}{\sum_j ae_j \cdot ff_j}$$

, where:

ae_i the sum of all exposures of company *i* to the sectors associated with respective theme
ff_i the free float market capitalization of company *i*, calculated using close price in EUR on the Thursday preceding the second Friday of the review month

Capped weight calculation
The capped weights (cw_i) derive from the initial weights via an iterative process that seeks to maintain the following conditions:

- The sum of all weights above 4.5% should not exceed 35%
- No single weight should exceed 8%

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their current weight in the index.

In the event that 19 or fewer securities are included in the index, the capped weights for all securities will be equal to 1/n where n is the number of securities included in the index.

Weight factor calculation

$$wcf_i = \frac{cw_i}{p_i} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer, where:

wcf_i weighting cap factor of company i
cw_i capped weight of company i as described above
p_i close price in EUR of company i on the Thursday preceding the second Friday of the review month

18.6.3. ONGOING MAINTENANCE

Replacements:
Stocks deleted from the STOXX Developed & Emerging Total Market Index are not replaced.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent's weight will be distributed among the remaining constituents.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently.

Mergers and takeovers: The original stock is replaced by the surviving stock.

18.7. STOXX GLOBAL SMART CITY INFRASTRUCTURE INDEX

18.7.1. OVERVIEW

The STOXX Global Smart City Infrastructure Index tracks the performance of companies deploying the physical structures and facilities needed as urban development becomes more intelligent and efficiency-focused. As such, the index targets two global thematic trends: that of smart cities and of infrastructure. As cities in the digital era are faced with expanding populations, limited natural resources, rapidly changing technology and the need to protect the environment, new facilities are required to address challenges and exploit innovative means of transport, housing, energy, waste management and communications.

STOXX uses FactSet's Revere (RBICS) granular data for a detailed breakdown of the revenue sources of the eligible companies, to select those most exposed to the smart city infrastructure theme. Nearly 50 sectors have been associated to the theme and include cellular site equipment, metal recycling providers, multi-type passenger transportation and water treatment agents manufacturing.

The index is also taking ESG considerations into account. Companies that are non-compliant with the Global Standards Screening (GSS) or are involved in Controversial Weapons activities, or display a Severe (Category 5) Controversy Rating, as identified by Sustainalytics, are excluded. Additional exclusion filters are incorporated, screening companies for involvement in Weapons (Small Arms and Military Contracting), Unconventional Oil & Gas (Arctic Oil and Gas Exploration, Oil Sands and Shale Energy), Conventional Oil & Gas, Thermal Coal, Nuclear Power and Tobacco.

Universe: The index universe is defined as all stocks from the STOXX Global Total Market index.

Weighting scheme: The index constituents are weighted according to adjusted equal weights. Weight factors are published on the second Friday of the Review month and based on the stocks' prices of the preceding Thursday.

Base values and dates: 1000 on 24 June 2013

Index types and currencies: Price, Net and Gross Return in EUR and USD

Dissemination calendar: STOXX Europe calendar

18.7.2. INDEX REVIEW

In order to be included in the STOXX Global Smart City Infrastructure Index, the companies in the index universe are screened for all of the following criteria:

» **Country classification:** stocks classified as belonging to the eligible countries list

» **Minimum liquidity:** 3-month median daily traded volume (MDTV) greater than one million EUR

» **Minimum size:** free-float market capitalization greater than 200 million EUR

» **Revenues**: more than 50% of revenues generated within the sectors associated with the Smart City Infrastructure theme. The threshold is lowered to 45% for current components.
STOXX uses FactSet Research Systems granular analysis to determine a company's position within the subsectors of its FactSet Revere Business Industry Classification System (FactSet RBICS). FactSet Revere is a sector, supply chain, and geographic risk taxonomy expert.

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

» **Controversial Weapons**: STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons
The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.
The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

» **Product Involvement**: STOXX will exclude companies that Sustainalytics identifies to have

- **Weapons:**

i) Small Arms:
»>0% revenues from manufacturing and selling assault weapons to civilian customers
»>10% revenues from manufacturing and selling small arms to military / law enforcement customers
»>5% revenues from manufacturing and selling key components of small arms
»>5% revenues from retail and/or distribution of assault weapons
»>5% revenues from retail and/or distribution of small arms (non-assault weapons)
»>0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers

ii) Military Contracting:
»>10% revenues from manufacturing military weapons systems and/or integral, tailor made components of these weapons
»>10% revenues from tailor made products and/or services that support military weapons

- **Unconventional Oil & Gas:**

i) Arctic Oil and Gas Exploration:
»>0% revenues Oil & Gas exploration & extraction in Arctic regions
»>10% significant ownership (extraction) of a company that is involved in Oil & Gas exploration & extraction in Arctic regions

ii) Oil Sands:
»>0% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day
»>10% significant ownership of a company that is involved in extraction of oil sands

iii) Shale Energy:
»>0% revenues from shale energy exploration and/or production
»>10% significant ownership of a company that is involved in shale energy exploration and/or production

- **Conventional Oil & Gas:**
  »>0% revenues from oil and gas exploration, production, refining, transportation and/or storage
  This category evaluates oil and gas related activities' share of total company's revenue. Assessments are made for producers, refiners, transporters, and companies engaged in storage (proxy: revenues).
  »>10% significant ownership of a company that is involved in exploration, production, refining, transportation and storage of oil and/or gas
  »>25% revenues from providing tailor-made products and services that support oil and gas exploration, production, refining, transportation and storage (proxy: revenues)
  »>25% revenues from generating electricity from oil and/or gas (proxy: generating capacity)

- **Thermal Coal:**
  »>0% revenues from thermal coal extraction (including thermal coal mining and exploration)
  »>10% significant ownership of a company that is involved in the extraction of thermal coal
  »>0% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants)
  »>10% significant ownership of a company that is involved in the generating electricity from thermal coal

- **Nuclear Power:**
  »>25% revenues from nuclear power production:
  - Utilities that own/operate nuclear power generators
    Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power

  »>25% revenues from nuclear power supporting products / services, including:
  - Design and construction of nuclear power plants
  - Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls
  - Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
  - Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate

  »>25% revenues from nuclear power distribution, including:
  - The resale or distribution of electricity generated from nuclear power;
  - This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix
    Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

- **Tobacco:**
  »>0% revenues from manufacturing tobacco products
  »>10% significant ownership of a company that is involved in the manufacturing tobacco products
  »>0% revenues from supplying tobacco-related products/services

»>10% significant ownership of a company that is involved in supplying tobacco-related products/services
»>0% revenues from the distribution and/or retail sale of tobacco products.
»>10% significant ownership of a company that is involved in distribution and/or retail sale (>10% total revenues) of tobacco products.

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

» **ESG Risk Ratings**[41]: STOXX will exclude companies that Sustainalytics identifies to have a "Severe" ESG Risk Rating.
The ESG Risk Rating evaluates the degree of a company's unmanaged material ESG risk by assessing a company's exposure to, and management of, the ESG issues that are considered most material for that company from a financial perspective. Sustainalytics assess and categorizes companies into five risk categories (Negligible, Low, Medium, High, Severe).

» **Combination of ESG Risk Ratings and Controversy Ratings**: in addition to the above, STOXX will exclude companies with a "High" ESG Risk Rating, that also have a Controversy Rating of Category 2 or higher (i.e. Moderate, Significant or High).

If information on any of the above fields is missing for a company, then it is excluded from the eligible universe.

The STOXX Global Smart City Infrastructure Index aims to have a minimum number of 80 constituents at each review. If the screening process above described results in being too restrictive, the revenue filter is progressively lowered in steps of 5% for the index, to a minimum of 30%, until the number of constituents is equal to or greater than 80 (i.e. all stocks which pass the lowered threshold are added to the index).

The eligible countries are defined as follows:

Australia	Japan	Brazil	Mexico
Austria	Netherlands	Chile	Peru
Belgium	New Zealand	China (B, H shares, Red Chips)	Philippines
Canada	Norway	Colombia	Poland
Denmark	Portugal	Czech Republic	South Africa
Finland	Singapore	Egypt	Taiwan
France	Spain	Greece	Thailand

[41] It should be acknowledged that much of the historical data set is based on a back-filling methodology, rather than on Sustainalytics conducted research. As such, on data that is back-filled, Sustainalytics does not take claim on the actual accuracy of that data at that point in time. Furthermore, historical data sets are only meant to serve as a proxy and is not meant to be indicative of future results

18. STOXX THEMATIC INDICES

Germany	Sweden	Hungary	Turkey
Hong Kong	Switzerland	India	
Ireland	United Kingdom	Indonesia	
Israel	United States	Korea	
Italy		Malaysia	

The included FactSet RBICS sectors are:

Nr.	Smart City Infrastructure L6 RBICS sectors
1	Air Purification and Filtration Equipment Products
2	Air, Liquid and Gas Control Equipment Products
3	Building Maintenance and Engineering Services
4	Bus Transportation
5	Cellular Site Equipment
6	Closed Circuit Television (CCTV) Systems/Products
7	Communications Infrastructure Software
8	Compressor and Pumping Equipment Manufacturing
9	Customer Premises Network Security Equipment
10	Design, Integration and Implementation Consulting
11	Diversified Electrical/Power System Manufacturing
12	Electrical Systems and Equipment Manufacturing
13	Electronic Security Identification Equipment
14	Energy Efficient Lighting and LED Manufacturing
15	General Carrier Edge (Access) Equipment
16	General Communications Equipment
17	General Waste Collection
18	Government and Public Service Industry Software
19	Government IT Services
20	Hazardous Materials Disposal
21	Infrastructure Consulting and Design Services
22	Insulation Manufacturing
23	Light Emitting Diode Discrete Semiconductors
24	Liquid and Water Purification/Filtration Products
25	Metal Recycling Providers
26	Monitoring and Control Sensor/Instrument Products
27	Multi-Type Passenger Transportation
28	Networking Semiconductors
29	Other Communications Semiconductors
30	Other Core Infrastructure Equipment
31	Other Environmental Control Machine Manufacturing
32	Other Metal Processing and Recycling Providers
33	Other Waste Services
34	Other Wide Area Networking (WAN) Equipment
35	Passenger Rail Transportation
36	Power, Control and Mixed Signal Semiconductors
37	Residential Mortgage REITs
38	Residential Property Owners
39	Residential Specialty Engineering Contractors
40	Smart Grid Technology and Smart Meter Products
41	Solid Waste Recycling Equipment Manufacturing
42	Test and Measurement Communications Equipment
43	Traffic Safety and Management Equipment Products
44	Transportation Construction
45	Utility Meter Manufacturing
46	Wastewater Treatment Services

47 Water Treatment Agents Manufacturing
48 Wireless Infrastructure Services

Review frequency: The index is reviewed annually in June. The review cut-off date for the observation of the parent index, liquidity, size, revenues and ESG information is the last index dissemination day in May. Furthermore, on a quarterly basis in September, December and March, current components are screened for their Controversy Rating. The cut-off date for this exercise is the last dissemination day of August, November and February respectively. If a current component is observed to have a Category 5 Controversy Rating, it is removed from the index, effective on the next dissemination day following the 3rd Friday of the month. If no current component has been assessed as such, no further capping applies.

Weighting cap factors: Components are weighted by adjusted equal weight with a multiplier set as $L = 5$. This is achieved by following steps 1-5 below. Weight factors are calculated annually in June. They are published on the second Friday of June, based on the stocks' closing prices of the preceding Thursday.

Step1:
The companies in the portfolio are sorted by their free-float market capitalization in ascending order, and their initial weight is defined as:

$$w_i = \frac{\mathrm{ffmcap}_i}{\sum_{j \text{ in comp list}}^{N} \mathrm{ffmcap}_j}$$

where:

ffmcap_i the free-float market capitalization of company i on the Thursday preceding the second Friday of the review month

N the number of companies in the index

The companies are also assigned a rank from 1, for the company with the lowest free-free float market capitalization, to N, for the one with the highest.

For the purposes of the above weight calculation, if a company is present with multiple listings in the portfolio, then the issuer's weight is calculated by summing the free-float market capitalization of all its listings, and only one rank is assigned to it.

Step 2:
An iterative process takes place where for each company in the ranking list formed in step 1, a cumulative weight is calculated such that:

$$Sw_i = (N - n_i) * w_i + \sum_{1}^{n_i} w_j$$

where:

w_i the initial weight calculated for company i

n_i the ranking assigned to company i

$\sum_{1}^{n_i} w_j$ the sum of weights (as calculated in step 1) of the companies ranking from 1 to n_i

N the number of companies in the STOXX Global Smart City Infrastructure index

Step 3:
The company with rank Z, is identified as the first one in the ranking list where the cumulative weight, exceeds the inverse of the multiplier, i.e. $Sw_z \geq 1/L$.

Step 4:
A normalization factor W_Z is calculated, such that:

$$W_Z = w_Z - \frac{Sw_z - \frac{1}{L}}{N - Z + 1}$$

Step 5:
The final weights are calculated as follows:

$$fw_i = \begin{cases} w_i * L \text{ , if } n_i < Z \\ W_Z * L \text{ , if } n_i \geq Z \end{cases}$$

Furthermore, in the case where a company is present with multiple listings in the portfolio, then the final weight calculated for the company, is allocated to each share line according to its free-float market capitalization.

Finally, the weighting factors are calculated such that:

$$wf_{i,ki} = \frac{fw_{i,k}}{p_{i,k}} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer and where:

$p_{i,k}$ close price of share line k of company i on the Thursday preceding the second Friday of the review month

$wf_{i,k}$ weight factor of share line k of company i.

18.7.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Global Total Market index are deleted from the STOXX Global Smart City Infrastructure Index. Any deleted stocks are not replaced.

Fast exit: Not applicable

Fast entry: Not applicable

Spin-offs: Spin-off companies are not added permanently.

18.8. STOXX GLOBAL PET CARE INDEX

18.8.1. OVERVIEW

The STOXX Global Pet Care Index is comprised of companies that stand to benefit from the continuously growing trend of pet ownership.

Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial exposure to pet care trend.

Furthermore, the index excludes companies that Sustainalytics considers to be non-compliant based on the Sustainalytics Global Standards Screening assessment or to be involved with controversial weapons.

Universe: The index universe is defined by all stocks included in the indices below, as observed on the review effective date:

- STOXX Developed and Emerging Markets Total Market
- STOXX China A Total Market
- STOXX China ADR Total Market
- STOXX China P Chips Total Market

Weighting scheme: The indices are weighted proportionally to the free-float market cap of the selected stocks multiplied by the aggregate revenues in EUR of each stock to the sectors listed below, associated to the Pet Care theme.

Base values and dates: 100 on June 18, 2012

Index types and currencies: Price, net and gross return in EUR and USD

Dissemination calendar: STOXX Americas calendar

18.8.2. INDEX REVIEW

Selection list:
The review cut-off date is the last dissemination day of the month preceding the review month of the index, and upon this date all stocks in the index universe are screened for all of the following criteria (applied in the order in which they are listed):

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than 1,000,000 EUR
» **Revenues:** more than 25% revenues generated within the aggregate of the RBICS sectors associated with the Pet Care theme (see table below), or more than 500,000,000 EUR generated within those sectors.
» **Multiple share lines:** in case a company is present with multiple listings, only the most liquid share line will be retained.

List of RBICS sectors associated with the Pet Care theme for the purposes of constituent selection:

Nr	Pet Care
1	Internet Pet and Pet Supply Retail

2 Pet and Pet Supply Stores
3 Pet Food Manufacturing
4 Pet Supplies Manufacturing
5 Veterinary Diagnostics
6 Veterinary Pharmaceuticals
7 Veterinary Product Distributors
8 Veterinary Services

Finally, on the remaining companies, the additional exclusion criteria below are applied:

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.
The criteria for involvement are:
- Internal production or sale of controversial weapons
- The ultimate holding company owns >10% of voting rights of an involved company
- >10% of voting rights of a company is owned by the involved company

Review frequency: The index composition is reviewed annually in June. The review cut-off date is the last dissemination day of the preceding month.

Weighting cap factors: Index weighting cap factors are calculated quarterly in March, June, September and December. They are published on the second Friday of each of these months, based on the stocks' prices of the preceding Thursday.

Initial weight calculation:

$$w_i = \frac{ar_i \cdot ff_i}{\sum_j ar_j \cdot ff_j}$$

, where:

ar_i the revenues of company *i* in EUR generated from the sectors associated with the theme

ff_i the free float market capitalization of company *i*, calculated using close price in EUR on the Thursday preceding the second Friday of the review month

Capped weight calculation
The capped weights (cw_i) derive from the initial weights via an iterative process that seeks to maintain the following conditions:
- The sum of all weights above 4.5% should not exceed 35%
- No single weight should exceed 8%

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their current weight in the index.

In the event that 19 or fewer securities are included in the index, the capped weights for all securities will be equal to 1/n where n is the number of securities included in the index.

Weight factor calculation

$$wcf_i = \frac{cw_i}{p_i} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer, where:

wcf_i weighting cap factor of company i

cw_i capped weight of company i as described above

p_i close price in EUR of company i on the Thursday preceding the second Friday of the review month

18.8.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the indices constituting the parent universe are not replaced.

Fast exit:
In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent’s weight will be distributed among the remaining constituents.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently.

18.9. STOXX HEALTH & WEIGHT LOSS INDICES

18.9.1. OVERVIEW

The STOXX Health & Weight Loss indices are comprised of companies aiming to tackle obesity, one of the most pressing global health challenges, and companies that stand to benefit from the increasing adoption of healthier lifestyles among millennials.

Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping these indices to select companies with substantial exposure to "fighting globesity".

Furthermore, the indices exclude companies that Sustainalytics considers to be non-compliant based on the Sustainalytics Global Standards Screening assessment or to be involved with controversial weapons.

Universe: The index universe for the STOXX Global Health & Weight Loss is defined by all stocks included in the indices below, as observed on the review effective date:

- STOXX Developed and Emerging Markets Total Market
- STOXX China ADR Total Market
- STOXX China P Chips Total Market
- STOXX China A Total Market: *only shares available to foreign investors through Shanghai-Hong Kong Stock Connect or Shenzhen-Hong Kong Stock Connect*

The STOXX Global ex China A Health & Weight Loss index universe includes all indices above apart from the last one.

Weighting scheme: The indices are weighted proportionally to the free-float market cap of the selected stocks multiplied by the aggregate revenue exposure of each stock to the sectors listed below, associated to the Globesity theme.

Base values and dates: 100 on June 18, 2012

Index types and currencies: Price, net and gross return in EUR and USD

18.9.2. INDEX REVIEW

Selection list:
The review cut-off date is the last dissemination day of the month preceding the review month of the index, and upon this date all stocks in the index universe are screened for all of the following criteria (applied in the order in which they are listed):

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than 1,000,000 EUR
» **Revenues:** more than 50% revenues generated within the aggregate of the RBICS sectors associated with the Globesity theme (see table below).
» **Multiple share lines:** in case a company is present with multiple listings, only the most liquid share line will be retained.

List of RBICS sectors associated with the Globesity theme for the purposes of constituent selection:

Nr	**Health & Weight Loss**
1	Activewear and Outerwear Apparel Production
2	Athletic Footwear Production
3	Cardiology Surgical Devices
4	Diet and Weight Loss Centers
5	Dietary and Naturopathic Supplements
6	Fitness and Exercise Equipment
7	Fitness and Recreational Sports Centers
8	Fresh Fruits and Vegetables Retail
9	Home Testing Clinical Diagnostics Devices
10	Mixed Apparel and Footwear Production
11	Nutraceuticals
12	Nutritional Supplement OEMs
13	Other Sporting and Athletic Goods
14	Respiratory Devices
15	Sporting Goods Stores
16	Team, Individual and Other Sports Manufacturing
17	Type 1 Diabetes Biopharmaceuticals
18	Type 2 Diabetes Biopharmaceuticals
19	Wearable Technology
20	Weight Management Biopharmaceuticals

Finally, on the remaining companies, the additional exclusion criteria below are applied:

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.
The criteria for involvement are:
- Internal production or sale of controversial weapons
- The ultimate holding company owns >10% of voting rights of an involved company
- >10% of voting rights of a company is owned by the involved company

Review frequency: The index compositions are reviewed annually in June. The review cut-off date is the last dissemination day of the preceding month.

Weighting cap factors: Index weighting cap factors are calculated quarterly in March, June, September and December. They are published on the second Friday of each of these months, based on the stocks' prices of the preceding Thursday.

Initial weight calculation:

$$w_i = \frac{ae_i \cdot ff_i}{\sum_j ae_j \cdot ff_j}$$

, where:

ae_i the sum of all exposures of company *i* to the sectors associated with the theme
ff_i the free float market capitalization of company *i*, calculated using close price in EUR on the Thursday preceding the second Friday of the review month

Capped weight calculation: The capped weights (cw_i) derive from the initial weights via an iterative process that seeks to maintain the following conditions:

- The sum of all weights above 4.5% should not exceed 35%
- No single weight should exceed 8%

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their current weight in the index.

In the event that 19 or fewer securities are included in the index, the capped weights for all securities will be equal to 1/n where n is the number of securities included in the index.

Weight factor calculation

$$wcf_i = \frac{cw_i}{p_i} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer, where:

wcf_i weighting cap factor of company i
cw_i capped weight of company i as described above
p_i close price in EUR of company i on the Thursday preceding the second Friday of the review month

18.9.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the indices constituting the parent universe are not replaced.

Fast exit: In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent’s weight will be distributed among the remaining constituents.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently.

18. STOXX THEMATIC INDICES

18.10. STOXX VIDEO GAMING & ESPORTS INDICES

18.10.1. OVERVIEW

The STOXX Video Gaming & eSports indices are comprised of companies that stand to benefit from the continuously growing trend of video gaming and eSports. The increasing popularity of video gaming and the players' engagement has moved the eSports industry into the mainstream. eSports is a rapidly rising industry where professional video gamers compete with each other and its appeal to millennials significantly drives gaming demand.

Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping these indices to select companies with substantial exposure to the video gaming and eSports trend.

Furthermore, the indices exclude companies that Sustainalytics considers to be non-compliant based on the Sustainalytics Global Standards Screening assessment or to be involved with controversial weapons.

Universe: The index universe for the STOXX Global Video Gaming & eSports is defined by all stocks included in the indices below, as observed on the review effective date:

- STOXX Developed and Emerging Markets Total Market
- STOXX China A Total Market: *only shares available to foreign investors through Shanghai-Hong Kong Stock Connect or Shenzhen-Hong Kong Stock Connect*
- STOXX China ADR Total Market
- STOXX China P Chips Total Market

The STOXX Global ex China A Video Gaming & eSports index universe includes all indices above apart from the last one.

Weighting scheme: The indices are weighted proportionally to the free-float market cap of the selected stocks multiplied by the aggregate revenue exposure of each stock to the sectors listed below, associated to the Video Gaming & eSports theme.

Base values and dates: 100 on June 18, 2012

Index types and currencies: Price, net and gross return in EUR and USD

18.10.2. INDEX REVIEW

Selection list:
The review cut-off date is the last dissemination day of the month preceding the review month of the index, and upon this date all stocks in the index universe are screened for all the following criteria (applied in the order in which they are listed):

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than 1,000,000 EUR
» **Revenues:** more than 50% revenues generated within the aggregate of the RBICS sectors associated with the Video Gaming & eSports theme (see table below), or more than 2,000,000,000 EUR generated within those sectors.
» **Multiple share lines:** in case a company is present with multiple listings, only the most liquid share line will be retained.

18. STOXX THEMATIC INDICES

List of RBICS sectors associated with the Video Gaming & eSports theme for the purposes of constituent selection:

Nr	Video Gaming & eSports
1	Computer and Software Stores
2	Console Games Software
3	Electronic Gaming Equipment
4	Electronic Gaming/Entertainment Electronics Makers
5	General Computer Hardware Manufacturing
6	General Entertainment Content Providers and Sites
7	Handheld and Smart Phone Games Software
8	Human Interface Peripherals
9	Microprocessor (MPU) Semiconductors
10	Multi-Type Business and Personal Systems
11	Online Casinos
12	Online Game Websites and Software
13	Online Gaming Systems
14	Other Games Software
15	Video Multimedia Semiconductors

Finally, on the remaining companies, the additional exclusion criteria below are applied:

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.
The criteria for involvement are:

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

Review frequency: The index compositions are reviewed annually in June. The review cut-off date is the last dissemination day of the preceding month.

Weighting cap factors: Index weighting cap factors are calculated quarterly in March, June, September and December. They are published on the second Friday of each of these months, based on the stocks' prices of the preceding Thursday.

Initial weight calculation:

$$w_i = \frac{ae_i \cdot ff_i}{\sum_j ae_j \cdot ff_j}$$

, where:

ae_i the sum of all exposures of company *i* to the sectors associated with the theme

ff_i the free float market capitalization of company *i*, calculated using close price in EUR on the Thursday preceding the second Friday of the review month

Capped weight calculation: The capped weights (cw_i) derive from the initial weights via an iterative process that seeks to maintain the following conditions:

- The sum of all weights above 4.5% should not exceed 35%
- No single weight should exceed 8%

To that end, any excess weight is redistributed from a company to the rest of the components of the index that are not already subject to capping under the above rules, proportionally to their current weight in the index.

In the event that 19 or fewer securities are included in the index, the capped weights for all securities will be equal to 1/n where n is the number of securities included in the index.

Weight factor calculation

$$wcf_i = \frac{cw_i}{p_i} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer, where:

wcf_i weighting cap factor of company i

cw_i capped weight of company i as described above

p_i close price in EUR of company i on the Thursday preceding the second Friday of the review month

18.10.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the indices constituting the parent universe are not replaced.

Fast exit: In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent’s weight will be distributed among the remaining constituents.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently.

18. STOXX THEMATIC INDICES

18.11. STOXX GLOBAL THEMATIC INDICES

18.11.1. OVERVIEW

The STOXX Global Thematic indices are indices comprised of companies from selected countries exposed to a defined set of themes: Ageing Population, Automation & Robotics, Digitalisation, Breakthrough Healthcare. These companies, or components of their business lines, are positioned to long-term structural trends driving social, economic and environmental change which, in the future, will have a substantial impact on their performance.

FactSet Revere (RBICS) data allow a detailed breakdown of the revenue sources of the eligible companies, helping this index to select companies with substantial exposure to the respective themes.

The indices are also taking ESG considerations into account. Companies that are non-compliant with the Global Standards Screening (GSS) or are involved in Controversial Weapons activities, or display a Severe (Category 5) Controversy Rating, as identified by Sustainalytics, are excluded. Additional exclusion filters are incorporated, screening companies for involvement in Weapons (Small Arms and Military Contracting), Unconventional Oil & Gas (Arctic Oil and Gas Exploration, Oil Sands and Shale Energy), Conventional Oil & Gas, Thermal Coal, Nuclear Power and Tobacco.

Universe: The index universe is defined as all stocks from the STOXX Global Total Market index.

Weighting scheme: The index constituents are weighted according to adjusted equal weights. Weight factors are published on the second Friday of the Review month and based on the stocks' prices of the preceding Thursday.

Base value and date: 1000 on June 20, 2011

Index types and currencies: Price, Net and Gross Return in EUR and USD

Dissemination calendar: STOXX Europe calendar

18.11.2. INDEX REVIEW

For each STOXX Global Thematic index, the companies in the index universe are screened for all of the following criteria:

» **Country classification:** stocks classified as belonging to the eligible countries list (as shown below)

» **Minimum liquidity:** 3-month median daily trading value (MDTV) greater than one million EUR

» **Minimum size:** free-float market capitalization greater than 200 million EUR

» **Revenues:** more than 50% of revenues generated within the sectors associated with the relevant index theme. Within each individual index, the threshold is lowered to 45% for current components.

18. STOXX THEMATIC INDICES

STOXX uses FactSet Research Systems granular analysis to determine a company's position within the subsectors of its FactSet Revere Business Industry Classification System (FactSet RBICS). FactSet Revere is a sector, supply chain, and geographic risk taxonomy expert.

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

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

The criteria for involvement are:
» Internal production or sale of controversial weapons
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

» **Product Involvement**: STOXX will exclude companies that Sustainalytics identifies to have

- **Weapons:**

i) Small Arms:
»>0% revenues from manufacturing and selling assault weapons to civilian customers
»>10% revenues from manufacturing and selling small arms to military / law enforcement customers
»>5% revenues from manufacturing and selling key components of small arms
»>5% revenues from retail and/or distribution of assault weapons
»>5% revenues from retail and/or distribution of small arms (non-assault weapons)
»>0% revenues from manufacturing and selling small arms (non-assault weapons) to civilian customers

ii) Military Contracting:
»>10% revenues from manufacturing military weapons systems and/or integral, tailor made components of these weapons
»>10% revenues from tailor made products and/or services that support military weapons

- **Unconventional Oil & Gas:**

i) Arctic Oil and Gas Exploration:
»>0% revenues Oil & Gas exploration & extraction in Arctic regions
»>10% significant ownership (extraction) of a company that is involved in Oil & Gas exploration & extraction in Arctic regions

ii) Oil Sands:
»>0% revenues from extracting oil sands. This category evaluates oil sands' share of total oil and gas average production in barrels of oil equivalent per day
»>10% significant ownership of a company that is involved in extraction of oil sands

iii) Shale Energy:
»>0% revenues from shale energy exploration and/or production

»>10% significant ownership of a company that is involved in shale energy exploration and/or production

- **Conventional Oil & Gas:**
  »>0% revenues from oil and gas exploration, production, refining, transportation and/or storage
  This category evaluates oil and gas related activities' share of total company's revenue. Assessments are made for producers, refiners, transporters, and companies engaged in storage (proxy: revenues).
  »>10% significant ownership of a company that is involved in exploration, production, refining, transportation and storage of oil and/or gas
  »>25% revenues from providing tailor-made products and services that support oil and gas exploration, production, refining, transportation and storage (proxy: revenues)
  »>25% revenues from generating electricity from oil and/or gas (proxy: generating capacity)

- **Thermal Coal:**
  »>0% revenues from thermal coal extraction (including thermal coal mining and exploration)
  »>10% significant ownership of a company that is involved in the extraction of thermal coal
  »>0% power generation capacity: coal-fired electricity, heat or steam generation capacity / thermal coal electricity production (including utilities that own/operates coal-fired power plants)
  »>10% significant ownership of a company that is involved in the generating electricity from thermal coal

- **Nuclear Power:**
  »>25% revenues from nuclear power production:
  - Utilities that own/operate nuclear power generators
    Note: in this category Sustainalytics tracks the percentage of a company's generating capacity that is based on nuclear power

  »>25% revenues from nuclear power supporting products / services, including:
  - Design and construction of nuclear power plants
  - Design and manufacture of specialized parts for use in nuclear power plants, including steam generators, control rod drive mechanisms, reactor vessels, cooling systems, containment structures, fuel assemblies, and digital instrumentation and controls
  - Special services, such as the transport of nuclear power materials, and nuclear plant maintenance;
  - Uranium mining and exploration, including companies that mine uranium and convert, enrich, and fabricate

  »>25% revenues from nuclear power distribution, including:
  - The resale or distribution of electricity generated from nuclear power;
  - This applies to distributors, resellers and utilities that distribute nuclear power as a part of their energy mix
    Note: In this category Sustainalytics tracks the percentage of a company's energy mix that is generated from nuclear power

- **Tobacco:**
  »>0% revenues from manufacturing tobacco products

»>10% significant ownership of a company that is involved in the manufacturing tobacco products
»>0% revenues from supplying tobacco-related products/services
»>10% significant ownership of a company that is involved in supplying tobacco-related products/services
»>0% revenues from the distribution and/or retail sale of tobacco products.
»>10% significant ownership of a company that is involved in distribution and/or retail sale (>10% total revenues) of tobacco products.

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

If information on any of the above fields is missing for a company, then it is excluded from the eligible universe.

Each STOXX Global Thematic index aims to have a minimum number of 80 constituents at each review: if the screening process described above results in being too restrictive for an index, the revenue filter is progressively lowered in steps of 5% for that particular index, until the number of constituents is equal to or greater than 80 (i.e. all stocks which pass the lowered threshold are added to the index).

The included FactSet RBICS sectors for each theme are:

Nr.	Automation & Robotics	Digitalisation
01	3D Modeling/Rapid Prototyping Automation Providers	Automotive Classifieds and Directories Media/Sites
02	Automotive Industry Software	Career Classifieds and Directories Media and Sites
03	Autonomous Commercial/Transit Vehicle Production	Carrier Edge Network Management Equipment
04	Autonomous Control Ship Builders	City Guides Content Providers and Sites
05	Autonomous Control Truck Production	Colocation and Data Center Services
06	Autonomous Drone Manufacturers	Commercial Bank and Credit Union Software
07	Business Intelligence Software	Communication and Collaboration Content Sites
08	Computer Aided Design (CAD) Software	Customer Premises Network Security Equipment
09	Diversified Content Management Software	Disk Storage Systems
10	Diversified Semiconductors	Diversified Electronic Security Equipment
11	Drone Parts Manufacturers	E-Commerce Service Providers
12	Food Production Machinery Manufacturing	Electronic Payment Processing
13	General Enterprise Management Software	Electronic Security Identification Equipment
14	General Factory Automation Makers	Enterprise Middleware Software
15	Global Positioning Systems (GPS) Manufacturing	Enterprise Security Management Software
16	Household Robots	Express Couriers
17	Industrial Robots and Robotic Assembly Line Makers	General Carrier Edge (Access) Equipment
18	Lasers and Optical Instrument Manufacturing	General Consumer Content Providers

19	Machine Vision and Quality Control Manufacturing	General Customer Premises Equipment (CPE)
20	Manufacturing Industry Software	General Delivery and Logistics Providers
21	Material Handling/Conveyor Equipment Manufacturing	General Entertainment Content Providers and Sites
22	Microprocessor (MPU) Semiconductors	Insurance Software
23	Mixed Industrial Machinery Parts/Equipment Makers	Internet Accessories Retail
24	Mobile Platform Applications Software	Internet Apparel Retail
25	Monitoring and Control Sensor/Instrument Products	Internet Automotive Parts Sales
26	Motion Control and Precision Motors Manufacturing	Internet Building Materials / Garden Supply Retail
27	Multi-Industry-Specific Factory Machinery Makers	Internet Department Stores
28	Networking Semiconductors	Internet Discount Stores
29	Other Automation Support Product Manufacturing	Internet Electronics Retail
30	Other Communications Semiconductors	Internet Entertainment Retail
31	Other Electric Motors and Motion Control Products	Internet Footwear Retail
32	Other Handheld and Smart Phone Software	Internet Furniture and Home Furnishings Retail
33	Other Processor Semiconductors	Internet Motor Vehicle Sales
34	Other Programmable Logic and ASIC Semiconductors	Internet Office Supplies Retail
35	Paper and Textile Automation Providers	Internet Off-Price Retail
36	Plastics and Rubber Automation Providers	Internet Pet and Pet Supply Retail
37	Programmable Logic Device Semiconductors	Internet Pharmacies and Drug Retail
38	Smart Phone Manufacturing	Internet Warehouse / Superstore Retail
39	Surgical Robotic Systems	Investment Management/Brokerage Software
40	Test, Measurement and Metrology Equipment Makers	Managed Hosting Services
41	Vehicle Autonomous Control Electronics Makers	Media Download and Streaming Digital Content Sites
42	Vehicle Autonomous Control Software	Mixed Electronic Transaction Processing
43	Vehicle Autonomous Control Software	Multiple Industry-Specific Software
44	Video Multimedia Semiconductors	Network Administration Software
45	Welding and Joining Tool Manufacturing	Network Security Software
46		Online Marketing and Advertising Support Services
47		Other Classifieds and Directories Media and Sites
48		Other Finance Industry Software
49		Other Hosting Services
50		Other Internet Health and Personal Care Retail
51		Other Network Software
52		Payment Processing Software
53		Real Estate Classifieds and Directories Sites
54		Retail Industry Software
55		Security and Identification Semiconductors
56		Security and Management Consulting
57		Trading Software
58		Travel Publishers
59		Web Navigation Sites and Software
60		Web Portal Sites and Software
61		Web Search Sites and Software
Nr.	Ageing Population	Breakthrough Healthcare
01	Annuities	Active and Intermediate Chemicals OEMs
02	Assisted Living	Autoimmune Disorders Biopharmaceuticals

18. STOXX THEMATIC INDICES

03	Boat Makers	Bioanalytical Consumables
04	Cardiology Surgical Devices	Biological Specimen Storage
05	Cardiovascular System Biopharmaceuticals	Biologics OEMs
06	Credit Life	Cardiology Surgical Devices
07	Diverse Institutional/High-Net Advisory Finance	Cardiovascular System Biopharmaceuticals
08	Diversified Life and Health Insurance	Clinical Limited Service CROs
09	Diversified Patient Care	Diversified Bioanalytical Instruments
10	Drug Lead Discovery Validation and Optimization	Diversified Contract Manufacturing Organizations
11	Funeral and Cemetery Services	Diversified Contract Research Organizations
12	General and Acute Hospitals	Diversified Development and Manufacturing Services
13	General Clinical Laboratories	Diversified Healthcare Business Management
14	General Death Care Services	Drug Delivery Technology Development
15	Golf Courses and Country Clubs	Drug Lead Discovery, Validation and Optimization
16	Golf Equipment	General Clinical Diagnostics Devices
17	Health Insurance	General Surgical Devices
18	Healthcare and Life Sciences Equity REITs	Genetic Molecular Diagnostic Test Kits
19	Healthcare Staffing and Recruiting	Healthcare Management Software
20	Hematological Oncology Biopharmaceuticals	Hematological Oncology Biopharmaceuticals
21	Home Healthcare	Home Testing Clinical Diagnostics Devices
22	Imaging Laboratories	Immune Deficiency Disorders Biopharmaceuticals
23	Insurance Brokerage	Immunoassays Clinical Diagnostics Devices
24	Joint Replacement and Reconstruction Devices	Multi-Type Drug Discovery Services
25	Life and Health Reinsurance	Neurology Biopharmaceuticals
26	Life Insurance	Neurology Devices
27	Medicare Managed Care	Oncology Devices
28	Mixed Usage Travel Arrangement and Reservation	Other Biopharmaceutical OEMs
29	Motor Homes and Campers (RVs) Manufacturing	Other Chemistry Clinical Diagnostics Devices
30	Neurology Biopharmaceuticals	Other Healthcare and Pharma Industry Software
31	Neurology Devices	Other Oncology Biopharmaceuticals
32	Ocean-Going Cruise Lines	Patient Data Management Software
33	Oncology Devices	Point of Care Testing Kits
34	Ophthalmology Biopharmaceuticals	Surgical Robotic Systems
35	Ophthalmology Devices	
36	Other Building Materials and Garden Supply Stores	
37	Other Hospitals	
38	Other Long-Term Care Facilities	
39	Other Oncology Biopharmaceuticals	
40	Other Orthopedics Devices	
41	Other Supplemental Health Insurance	
42	Personal Recreation Vehicle Manufacturing	
43	Pharmacies and Drug Stores	
44	Pharmacy Benefit Management (PBM)	
45	Plastic and Reconstructive Surgery Devices	
46	Private Wealth Managers	
47	Retail Advisory and Brokerage Services	
48	Retail Advisory Services	

18. STOXX THEMATIC INDICES

49	Retail Brokerage Services
50	Skilled Nursing Facility (Nursing Home)
51	Specialized Patient Care
52	Tour Operators
53	Travel Agencies
54	Travel Publishers
55	Vacation Ownership Operators

The eligible countries are defined as follows:

Australia	Japan	Brazil	Peru
Austria	Netherlands	Chile	Philippines
Belgium	New Zealand	China (B, H shares, Red Chips)	Poland
Canada	Norway	Colombia	South Africa
Denmark	Portugal	Czech Republic	Taiwan
Finland	Singapore	Egypt	Thailand
France	Spain	Greece	Turkey
Germany	Sweden	Hungary	
Hong Kong	Switzerland	India	
Ireland	United Kingdom	Indonesia	
Israel	United States	Korea	
Italy		Malaysia	
		Mexico	

Review frequency: Each index is reviewed annually in June. The review cut-off date for the observation of the parent index, liquidity, size, revenues and ESG information is the last index dissemination day in May. Furthermore, on a quarterly basis in September, December and March, current components are screened for their Controversy Rating. The cut-off date for this exercise is the last dissemination day of August, November and February respectively. If a current component is observed to have a Category 5 Controversy Rating, it is removed from the index, effective on the next dissemination day following the 3rd Friday of the month. If no current component has been assessed as such, no further capping applies.

Weighting cap factors: Components are weighted by adjusted equal weight with a multiplier set as $L = 5$. This is achieved by following steps 1-5 below. Weight factors are calculated annually in June. They are published on the second Friday of June, based on the stocks' closing prices of the preceding Thursday.

<u>Step1</u>:
The companies in the portfolio are sorted by their free-float market capitalization in ascending order, and their initial weight is defined as:

$$w_i = \frac{\mathrm{ffmcap}_i}{\sum_{j\ \mathrm{in\ comp\ list}}^{N} \mathrm{ffmcap}_j}$$

where:

$ffmcap_i$ the free-float market capitalization of company i on the Thursday preceding the second Friday of the review month

N the number of companies in the corresponding thematic index

The companies are also assigned a rank from 1, for the company with the lowest free-free float market capitalization, to N, for the one with the highest.

For the purposes of the above weight calculation, if a company is present with multiple listings in the portfolio, then the issuer's weight is calculated by summing the free-float market capitalization of all its listings, and only one rank is assigned to it.

Step 2:
An iterative process takes place where for each company in the ranking list formed in step 1, a cumulative weight is calculated such that:

$$Sw_i = (N - n_i) * w_i + \sum_{1}^{n_i} w_j$$

where:

w_i the initial weight calculated for company i

n_i the ranking assigned to company i

$\sum_{1}^{n_i} w_j$ the sum of weights (as calculated in step 1) of the companies ranking from 1 to n_i

N the number of companies in the corresponding thematic index

Step 3:
The company with rank Z, is identified as the first one in the ranking list where the cumulative weight, exceeds the inverse of the multiplier, i.e. $Sw_z \geq 1/L$.

Step 4:
A normalization factor W_Z is calculated, such that:

$$W_Z = w_Z - \frac{Sw_z - \frac{1}{L}}{N - Z + 1}$$

Step 5:
The final weights are calculated as follows:

$$fw_i = \begin{cases} w_i * L \text{ , if } n_i < Z \\ W_Z * L \text{ , if } n_i \geq Z \end{cases}$$

Furthermore, in the case where a company is present with multiple listings in the portfolio, then the final weight calculated for the company, is allocated to each share line according to its free-float market capitalization.

Finally, the weighting factors are calculated such that:

$$wf_{i,ki} = \frac{fw_{i,k}}{p_{i,k}} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer and where:

$p_{i,k}$ close price of share line k of company i on the Thursday preceding the second Friday of the review month

$wf_{i,k}$ weight factor of share line k of company i.

18.11.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Global Total Market index are deleted from the STOXX Global Thematic indices. A deleted stock is not replaced.

Fast exit: Not applicable

Fast entry: Not applicable

Spin-offs: Spin-off companies are not added permanently.

18.12. STOXX GLOBAL AUTOMATION & ROBOTICS (TTM) JPY INDEX

18.12.1. OVERVIEW

The STOXX Global Automation & Robotics (TTM) (Telegraphic Transfer Middle rate) JPY index tracks the performance of the STOXX Global Automation & Robotics index (USD Version) converted to Japanese Yen utilizing the TTM JPY exchange rate.
The TTM JPY rate is published end of day Japan time, hence it's available in the morning CET time and it refers to the previous day. For this reason, the previous day's index value is used in the calculation.

The base index is STOXX Global Automation & Robotics index (USD version).

Index types and currencies: Price, Net Return, Gross Return in JPY TTM FOREX

Base values and dates: The following base values and dates apply: 1000 on June 21, 2011

18.12.2. CALCULATIONS

The index value is calculated as follows:

$$I_t = I_{t_0} \cdot \frac{U_{t-1}}{U_{t_0-1}} \cdot \frac{FX_t}{FX_{t_0}}$$

Where,

I_t The index value at day *t*
FX_t The Reuters TTM rate at day *t*, defined as $\text{"USDTTM = BTMJ"}(t)$
U_{t-1} The index value of the underlying index on day t-1, as defined in the table below.
t_0 The index base date
I_{t_0} The index base value
U_{t_0-1} The underlying index value on the day before the base date, set to the value of 1000
FX_{t_0} The Reuters TTM rate at base date, set to the value of 80.19

Longname	ISIN	Symbol
STOXX Global Automation & Robotics USD Gross Return	CH0325904370	IXAROBS
STOXX Global Automation & Robotics USD Net Return	CH0325904388	IXAROBU
STOXX Global Automation & Robotics USD Price	CH0325904396	IXAROBK

19. STOXX AI THEMATIC INDICES

19.1. STOXX AI GLOBAL ARTIFICIAL INTELLIGENCE INDICES

19.1.1. OVERVIEW

Artificial intelligence (AI) is the science of creating computer programs and machines that exhibit human-like intelligence and cognitive skills. The STOXX® AI Global Artificial Intelligence Indices are comprised of companies from a wide range of industries that invest heavily in the development of new AI technologies. These companies are therefore considered to be well-positioned to benefit from the increased adoption of AI technologies.

STOXX teamed up with an award-winning AI company, Yewno, whose proprietary AI algorithms, which include machine learning, computational linguistics and knowledge graph techniques, are used to identify the index constituents from the universe of the STOXX® Developed and Emerging Markets Total Market Index. The key criterion used in the selection process is patent filings related to AI IP, thereby identifying AI innovators as well as AI adopters.

Index name	Symbol	Bloomberg ticker	Reuters RIC
STOXX AI Global Artificial Intelligence EUR (Price)	STXAAIP	STXAAIP Index	.STXAAIP
STOXX AI Global Artificial Intelligence EUR (Net Return)	STXAAIR		.STXAAIR
STOXX AI Global Artificial Intelligence EUR (Gross Return)	STXAAIGR	STXAAIGR Index	.STXAAIGR
STOXX AI Global Artificial Intelligence USD (Price)	STXAAIL	STXAAIL Index	.STXAAIL
STOXX AI Global Artificial Intelligence USD (Net Return)	STXAAIV		.STXAAIV
STOXX AI Global Artificial Intelligence USD (Gross Return)	STXAAIGV	STXAAIGV Index	.STXAAIGV
STOXX AI Global Artificial Intelligence ADTV5 EUR (Price)	STXAA5P		.STXAAIP
STOXX AI Global Artificial Intelligence ADTV5 EUR (Net Return)	STXAA5R	STXAAIR Index	.STXAAIR
STOXX AI Global Artificial Intelligence ADTV5 EUR (Gross Return)	STXAA5GR		.STXAAIGR
STOXX AI Global Artificial Intelligence ADTV5 USD (Price)	STXAA5L		.STXAA5L
STOXX AI Global Artificial Intelligence ADTV5 USD (Net Return)	STXAA5V		.STXAA5V
STOXX AI Global Artificial Intelligence ADTV5 USD (Gross Return)	STXAA5GV		.STXAA5GV

Universe: The index universe is defined as all stocks from the STOXX Developed and Emerging Total Market Index as of the last calculation day of the month two months preceding the review month. Any stocks that are removed from the index between that day and the time of index review will not be considered for inclusion in the index.

19. STOXX AI THEMATIC INDICES

Weighting scheme: The indices are equal-weighted. In case a company is present with multiple listings in an index, only the most liquid share line will be kept. Weight factors are published on the second Friday of the Review month and based on the stocks' prices of the preceding Thursday.

Base values and dates: 100 on 18 March 2013

Index types and currencies: Price, Net Return, Gross Return in EUR and USD

19.1.2. INDEX REVIEW

For the purposes of the STOXX AI Global Artificial Intelligence Indices, Yewno Inc. calculates two metrics relevant to a company's involvement in the field of Artificial Intelligence:
AI Intellectual Property Exposure is defined as the ratio of the number of AI patents awarded to a company over the most recent 3-year period to the total number of patents awarded to that company over the same period. It provides an indication of the importance AI research and applications to the overall activities of each company.

AI Contribution is defined as the ratio of the number of AI patents awarded to a company over the most recent 3-year period to the total number of AI patents awarded to all companies in the indices' Universe. It provides an indication of the importance of each company's AI research and applications to the overall AI-related activities of other companies in the index Universe.

The companies in the STOXX AI Global Artificial Intelligence indices' universe are screened for all of the following criteria (in the order in which they are listed below):

- **Exposure:** Companies which fall above the 25th percentile in both measures mentioned above (AI Intellectual Property Exposure and AI Contribution) will be included in the indices. For the purposes of calculating the 25th percentile of each measure, companies with a value of zero in that measure will be ignored.
- **Minimum liquidity:** 3-month average daily trading value (ADTV) greater than 1,000,000 EUR (5,000,000 EUR for the STOXX AI Global Artificial Intelligence ADTV5 Index). This filter will be applied after all relevant calculations for the exposure filter above are complete.
- **Multiple share lines:** in case a company is present with multiple listings in an index, only the most liquid share line will be kept

Review frequency: Each index is reviewed quarterly in March, June, September and December. No further capping applies between reviews.

Weighting cap factors:

$$\mathrm{wf}_i = \frac{1/N}{\mathrm{p}_i} \cdot 10{,}000{,}000{,}000$$

rounded to the closest integer and where:

N = number of companies in the index
p_i= close price in EUR of company i on the Thursday preceding the second Friday of the review month
wf_i= weight factor of company i.

19. STOXX AI THEMATIC INDICES

19.1.3. ONGOING MAINTENANCE

Replacements: Stocks deleted from the STOXX Developed & Emerging TMI are not replaced.
Fast exit: Not applicable
Fast entry: Not applicable
Spin-offs: Spin-offs are not added permanently.
Mergers and takeovers: The original stock is replaced by the surviving stock.

20. STOXX PREMIA INDICES

20.1. EURO STOXX SINGLE PREMIUM INDICES

20.1.1. OVERVIEW

The EURO STOXX Single Premium Indices are based on the EURO STOXX Index and aim to extract factor risk premia on equities while controlling risks and focusing on tradability. The index strategy was developed based on research by Finreon, a provider of innovative asset management solutions and spin-off from the University of St. Gallen. These indices differ from each other by the risk premia they exploit, which consist of the following: Value, Size, Momentum, Residual Momentum, Reversal, Low Risk and Quality.

Universe: The index universe is defined by the parent index, the EURO STOXX Index

Weighting scheme: The indices are price-weighted according to the principle of risk parity

Base values and dates: The following base values and dates apply: 100 on Dec 19, 2003

Index types and currencies: Price, Net Return and Gross Return in EUR, USD and CHF

Dissemination calendar: STOXX Europe calendar

For a complete list please consult the data vendor code sheet on the website[42]. Customized solutions can be provided upon request.

20.1.2. INDEX REVIEW

The data cut-off date for the underlying data is the Friday 4 weeks prior to the review implementation date.

Selection list:
Components are selected from the EURO STOXX index by filtering on various indicators that have been normalized and combined, reflecting the relevant factor premium in each case. Only components with a price history of at least 156 weeks are eligible to be included.

Normalization and Combination
Each factor consists of several indicators. These indicators are calculated from fundamental data or price data. The indicators are standardized as follows:

$$z_i = \frac{S_i - S_{mean}}{\sigma(S)}$$

where
S_i = indicator value for stock i^{th}
S_{mean} = average indicator value of the stocks in the relevant ICB industry or universe
$\sigma(S)$ = standard deviation of the indicator across stocks in the relevant ICB industry or universe

[42] http://www.STOXX.com/download/indices/vendor_codes.xls

All indicators in a Factor Score must be available for a stock to be included in a single premium index. In order to reduce sensitivity to statistical outliers, values for each indicator that lie below the 5th percentile or above the 95th percentile for that indicator are adjusted to be equivalent to the 5th or 95th percentile respectively before standardisation.

The standardized scores are combined to arrive at an aggregated factor score as follows:

$$Factor\ Score_i^j = \sum_{k=1}^{m} w^k z_i^k$$

Where
m = number of indicators in Factor Score j
z_i^k = standardized indicator k for stock i
w^k = weighting for indicator k with all the weightings summing up to 1, $\sum_{k=1}^{m} w^k = 1$

The target number of components in the relevant EURO STOXX Single Premium Index is set to 1/3 (rounded up to the closest integer) of the eligible stocks. The aggregated Factor Scores are ranked in descending order for value, momentum, residual momentum and quality and in ascending order for size, reversal and low risk indicators. A list composed of the top ranking stocks up to the target number of components and an additional selection buffer of 10% (i.e. target number multiplied by 10% rounded down to the closest integer) is compiled. In order to reduce turnover, current index components that are in this list are selected. Then, as many stocks as necessary to reach the target number of components are selected among the remaining top-ranked stocks in the list.

Factors Calculation

1. VALUE

The underlying value indicators consist of the following:
1. Book Value per Share to Price (B/P)
2. Earnings per Share to Price (E/P)
3. Dividend per Share over last 12 months to Price (D/P)

The indicators are standardized by ICB industry if there are at least 10 eligible stocks within the industry, otherwise the indicators for components in that ICB industry are standardized across all eligible stocks with respect to that factor, and the aggregated Value Score is:

$$Factor\ Score_i^{VALUE} = \frac{1}{2} z_i^{B/P} + \frac{1}{4} z_i^{E/P} + \frac{1}{4} z_i^{D/P}$$

2. SIZE

The underlying size indicators consist of the following:
1. The natural logarithm of the free-float market capitalization (MCAP)
2. The natural logarithm of the company’s Total Assets (TA)

The indicators are standardized by ICB industry if there are at least 10 stocks within the industry, otherwise the indicators for components in that ICB Industry are standardized across all eligible stocks with respect to that factor, and the aggregated Size Score is:

$$Factor\ Score_i^{SIZE} = \frac{1}{2} z_i^{MCAP} + \frac{1}{2} z_i^{TA}$$

3. MOMENTUM

The underlying momentum indicators consist of the following:
a) The 52 minus 4 weeks gross return (52-4TR)
b) The 26 minus 4 weeks gross return (26-4TR)

The indicators are standardized across all eligible stocks with respect to that factor the aggregated Momentum Score is:

$$Factor\ Score_i^{MOMENTUM} = \frac{1}{2} z_i^{52-4TR} + \frac{1}{2} z_i^{26-4TR}$$

4. RESIDUAL MOMENTUM

The underlying residual momentum indicators consist of the following:
a) The 52 minus 4 weeks standardised residual return (52-4RR), based on CAPM regression over weekly data covering 156 weeks of the component against the reference market
b) The 26 minus 4 weeks standardised residual return (26-4RR), based on CAPM regression over weekly data covering 156 weeks of the component against the reference market

The risk free rate used is the Germany 3m deposit rate. The indicators are standardized across all eligible stocks with respect to that factor and the aggregated Residual Momentum Score is:

$$Factor\ Score_i^{RESIDUAL\_MOMENTUM} = \frac{1}{2} z_i^{52-4RR} + \frac{1}{2} z_i^{26-4RR}$$

5. REVERSAL

The underlying reversal indicators consist of the following:
a) The 260 minus 52 weeks gross return (260-52TR)
b) The 156 minus 52 weeks gross return (156-52TR)

The indicators are standardized across all eligible stocks with respect to that factor and the aggregated Reversal Score is:

$$Factor\ Score_i^{REVERSAL} = \frac{1}{2} z_i^{260-52TR} + \frac{1}{2} z_i^{156-52TR}$$

6. LOW RISK

The underlying low risk indicators consist of the following:

a) Volatility calculated on the basis of weekly gross return data over the previous 156 weeks (VOL)
b) 90% value-at-risk for the weekly gross returns over the previous 156 weeks (VaR). The loss is represented as a positive number.
c) Correlation coefficient between the weekly gross returns of the component against the weekly gross return of the EURO STOXX Index over the previous 156 weeks (CORR)

The indicators are standardized across all eligible stocks with respect to that factor and the aggregated Low Risk Score is:

$$Factor\ Score_i^{LOW\_RISK} = \frac{1}{3}z_i^{VOL} + \frac{1}{3}z_i^{VaR} + \frac{1}{3}z_i^{CORR}$$

7. QUALITY

The underlying quality indicators consist of the following:
a) Gross income divided by Total Asset (ROA)
b) Earnings per share divided by revenue per share (NetMargin)

The indicators are standardized by ICB Industry if there are at least 10 eligible stocks within the industry, otherwise the indicators for components in that ICB Industry are standardized across all eligible stocks with respect to that factor, and the aggregated Quality Score is:

$$Factor\ Score_i^{QUALITY} = \frac{1}{2}z_i^{ROA} + \frac{1}{2}z_i^{NetMargin}$$

Optimization

The objective of the optimization is to have a balanced risk contribution of each of the components of the index to overall volatility of the respective EURO STOXX Single Premium Index. The relative contribution to risk is defined as the risk contribution divided by the volatility. The risk contribution of each component is equal to the product of its weight by its marginal risk contribution. The marginal risk contribution corresponds to the change in volatility of the EURO STOXX Single Premium Index induced by a small change in the weight of the component.

The relative contribution to risk (RC) of the i^{th} component is given by the following formula:

$$RC_i = w_i \frac{\left(\frac{\partial \sigma(w)}{\partial w_i}\right)}{\sigma(w)} = w_i \frac{(\sum w)_i}{w' \sum w}$$

σ(w) = Volatility of the EURO STOXX Single Premium Index calculated using weekly gross return times series over a period of 156 weeks
w_i = Weight of component i in the EURO STOXX Single Premium Index
w = Vector composed of all the weights w_i

Σ = Covariance matrix[43] of the components in the EURO STOXX Single Premium Index calculated using weekly gross return times series over a period of 156 weeks

The following optimization is performed to arrive at the weights in accordance with the principles of risk parity:

$$w_t{}^* = argmin_w \left(\sum_i^n \left(RC_i - \frac{1}{n} \right)^2 + (w_t - w_{t-1})' * (w_t - w_{t-1}) + \sum_j 100 * \ min \left(0, upper\ limit\ constraint\ weight\ j - \sum_i w_{i,t}^j \right)^2 \right)$$

where n is the total number of components in the EURO STOXX Single Premium Index.

The objective function consists of the following 3 terms:

a) $\sum_i^n \left(RC_i - \frac{1}{n} \right)^2$ is the equal risk contribution term
b) $(w_t - w_{t-1})' * (w_t - w_{t-1})$ is the turnover control term where w_t denotes the weight vector of the new components in the current rebalancing period which the objective function is minimizing for and w_{t-1} denotes the weight vector on the cut-off date of the components from the previous rebalancing period
c) The third term is the penalty on the upper limit ICB industry weight and upper limit country weight for the set j of all ICB industries and countries. The upper limit ICB industry weight is defined as min(1.5x EURO STOXX ICB industry weight, EURO STOXX industry weight + 5%) and the upper limit country weight is defined as min(1.5x EURO STOXX country weight, corresponding EURO STOXX country weight + 5%).

This optimization has the following constraints:

1. Each component weight, w_i, should be non-negative and the sum of all the component weights should be equal to 100%
2. Maximum component weight, w_i^{MAX} = min(4%, 20x w_i^{REF}). The reference weight, w_i^{REF}, is defined as 0.5 * w_i^{MktCap} + 0.5 * w_i^{ADTV} normalized to sum to 100%.

$$w_i^{MktCap} = \frac{Market\ Cap_i}{\sum_{j=1}^n Market\ Cap_j}$$

$$w_i^{ADTV} = \frac{ADTV_i}{\sum_{j=1}^n ADTV_j}$$

where
Market Cap_i is the 52-week average of the weekly closing free-float market capitalization of component i,
$ADTV_i$ is the 52-week average of the 5-day average traded volume of component i,

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[43] The covariance matrix is denoised using Random Matrix Theory

3. Minimum ICB industry weight of min(sum of w_i^{MAX} of the components within this ICB industry, max(0.5x EURO STOXX ICB industry weight, EURO STOXX ICB industry weight – 5%)).
4. Minimum country weight of min(sum of w_i^{MAX} of the components within this country, max(0.5x EURO STOXX country weight, EURO STOXX country weight – 5%)).

Composition list: Variable number of constituents depending on the selection and optimization process

Review frequency: The review are conducted on a quarterly basis in March, June, September and December, together with the parent EURO STOXX index.

Weighting cap factors: weight * (100,000,000,000 / closing price of the stock), rounded to integers based on the closing prices on the Thursday prior to the second Friday of the review month.

Derived indices: EURO STOXX Multi Premia Index

20.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-offs are not added permanently.
Corporate Actions: All component are maintained for corporate actions as outlined in the STOXX Calculation Guide available on stoxx.com

20. STOXX PREMIA INDICES

20.2. EURO STOXX MULTI PREMIA INDEX

20.2.1. OVERVIEW

The EURO STOXX Multi Premia Index is derived from the seven EURO STOXX Single Premium Indices: EURO STOXX Value Premium Index, EURO STOXX Size Premium Index, EURO STOXX Momentum Premium Index, EURO STOXX Residual Momentum Premium Index, EURO STOXX Reversal Premium Index, EURO STOXX Low Risk Premium Index and EURO STOXX Quality Premium Index. Each of the factor portfolios contains the top third of the stocks of the eligible securities that have the best characteristics with respect to the targeted factor. The underlying universe of the factor portfolios is the EURO STOXX Index.

The EURO STOXX Multi Premia Index has the objective of diversifying across these different sources of return. The index strategy was developed based on research by Finreon, a provider of innovative asset management solutions and spin-off from the University of St. Gallen. The index combines each of these Single Premium Indices in such a way that each of the factor portfolios contributes equally to the resulting tracking error to the underlying universe.

Universe: The index universe is the underlying components in the EURO STOXX Single Premium Indices i.e. EURO STOXX Value Premium Index, EURO STOXX Size Premium Index, EURO STOXX Momentum Premium Index, EURO STOXX Residual Momentum Premium Index, EURO STOXX Reversal Premium Index, EURO STOXX Low Risk Premium Index and EURO STOXX Quality Premium Index.

Weighting scheme: The indices are price-weighted according to the principle of risk parity based on the tracking error of the EURO STOXX Single Premium Indices to the EURO STOXX Index.

Base values and dates: The following base values and dates apply: 100 on Dec 19, 2003

Index types and currencies: Price, net and gross return in EUR, USD and CHF

Dissemination calendar: STOXX Europe calendar

For a complete list please consult the data vendor code sheet on the website[44]. Customized solutions can be provided upon request.

20.2.2. INDEX REVIEW

The data cut-off date for the underlying data is the Friday 4 weeks prior to the review implementation date.

Selection list:
The weights of the components are calculated by multiplying the optimized weights of each of the EURO STOXX Single Premium Indices in the EURO STOXX Multi Premia Index by their respective component weights.

44 http://www.STOXX.com/download/indices/vendor_codes.xls

Optimization

The objective of the optimization is to have a balanced contribution of each of the single premium index to overall tracking error of the EURO STOXX Multi Premia Index to the EURO STOXX Index. The relative contribution to the tracking error is the tracking error contribution divided by the overall tracking error to the EURO STOXX Index. The tracking error contribution of each single premium index is equal to the product of its weight by its marginal tracking error contribution. The marginal tracking error contribution corresponds to the change in the tracking error of the EURO STOXX Multi Premia Index induced by a small increase in the weight of each single premium index.

The relative contribution to the tracking error (TEC) of the i^{th} EURO STOXX Single Premium Index is given by the following formula:

$$TEC_i = w_i \frac{\frac{\partial \sigma(w)}{\partial w_i}}{\sigma(w)} = w_i \frac{(\sum w)_i}{w' \sum w}$$

$\sigma(w)$ = Tracking Error of the EURO STOXX Multi Premia Index
w_i = weight of the i_{th} EURO STOXX Single Premium Index in the EURO STOXX Multi Premia Index
w = Vector composed of all the weights w_i
å = Tracking Error Covariance matrix[45] of the EURO STOXX Single Premium Indices

The objective is to determine the weight of each EURO STOXX Single Premium Index such as the tracking error contribution of each EURO STOXX Single Premium Index in the EURO STOXX Multi Premia Index is equal.

The optimization problem minimizes the total of the squared deviations between the tracking error contributions and the desired tracking error contribution. The vector w which is composed of all the weights w_i minimising the objective function is computed.

$$w^* = argmin_w \sum_i \left(TEC_i - \frac{1}{n}\right)^2$$

TEC_i = Tracking error contribution of the i^{th} EURO STOXX Single Premium Index to the EURO STOXX Multi Premia Index
n = number of EURO STOXX Single Premium Indices

Under the following constraints:
a) Weight of each EURO STOXX Single Premium Index shall be between 11% and 17.5%
b) Cumulated weights of the EURO STOXX Single Premium Indices must be equal to 100%.

[45] The covariance matrix is denoised using Random Matrix Theory

Tracking Error Covariance Matrix Calculation

The data cut-off date is the Friday 4 weeks prior to the review implementation date using the composition in the review month. The covariance matrix is computed on the review date using the closing weekly price for each EURO STOXX Single Premium Index over the past 156 weeks whenever the EURO STOXX Index is calculated.

For each single premium index, the closing levels are observed on a window of 156 weeks t=1,…,T from the cut-off and the weekly returns computed based on the gross return versions of the index. The tracking error is calculated as the difference between the weekly gross return of the EURO STOXX Single Premium Index with the weekly gross return of the EURO STOXX Index.

Composition list: Variable number of constituents depending on the number of components in the EURO STOXX Single Premium Indices. The component weights are calculated by multiplying the single premium index weight with the respective component weights in the index.

Review frequency: The reviews are conducted on a quarterly basis in March, June, September and December, together with the parent EURO STOXX index.

Weighting cap factors: weight * (100,000,000,000 / closing price of the stock), rounded to integers based on the closing prices on the Thursday prior to the second Friday of the review month.

Derived indices: none

20.2.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.
Fast exit: Not applicable.
Fast entry: Not applicable.
Spin-offs: Spin-offs are not added permanently.
Corporate Actions: All component are maintained for corporate actions as outlined in the STOXX Calculation Guide available on stoxx.com

21. STOXX FACTOR INDICES

21.1. STOXX FACTOR INDICES

21.1.1. OVERVIEW

STOXX single and multi-factor indices aim to harvest the risk premia of several academically validated style factors – Value, Momentum, Quality, Size and Low Risk. At the same time the index rules ensure tradability and diversification as well as limit untargeted systematic exposures. STOXX uses Axioma's risk model and optimizer to construct the factor indices. The STOXX single and multi-factor indices are based on the respective STOXX country or regional benchmark indices. STOXX uses Axioma's risk model and optimizer to construct the factor indices.

Universe: The constituents of the STOXX single and multi-factor indices are selected from the respective STOXX country and regional benchmark indices.

Factor Index	Parent Index
STOXX USA 500 Ax Value	STOXX USA 500
STOXX USA 500 Ax Momentum	
STOXX USA 500 Ax Quality	
STOXX USA 500 Ax Low Risk	
STOXX USA 500 Ax Size	
STOXX USA 500 Ax Multi-Factor	
STOXX USA 900 Ax Value	STOXX USA 900
STOXX USA 900 Ax Momentum	
STOXX USA 900 Ax Quality	
STOXX USA 900 Ax Low Risk	
STOXX USA 900 Ax Size	
STOXX USA 900 Ax Multi-Factor	
STOXX Global 1800 Ax Value	STOXX Global 1800
STOXX Global 1800 Ax Momentum	
STOXX Global 1800 Ax Quality	
STOXX Global 1800 Ax Low Risk	
STOXX Global 1800 Ax Size	
STOXX Global 1800 Ax Multi-Factor	
STOXX Global 1800 ex USA Ax Value	STOXX Global 1800 ex USA
STOXX Global 1800 ex USA Ax Momentum	
STOXX Global 1800 ex USA Ax Quality	
STOXX Global 1800 ex USA Ax Low Risk	
STOXX Global 1800 ex USA Ax Size	
STOXX Global 1800 ex USA Ax Multi-Factor	
STOXX Europe 600 Ax Value	STOXX Europe 600
STOXX Europe 600 Ax Momentum	
STOXX Europe 600 Ax Quality	
STOXX Europe 600 Ax Low Risk	
STOXX Europe 600 Ax Size	
STOXX Europe 600 Ax Multi-Factor	
STOXX Asia/Pacific 600 Ax Value	STOXX Asia/Pacific 600
STOXX Asia/Pacific 600 Ax Momentum	

STOXX Asia/Pacific 600 Ax Quality	
STOXX Asia/Pacific 600 Ax Low Risk	
STOXX Asia/Pacific 600 Ax Size	
STOXX Asia/Pacific 600 Ax Multi-Factor	
STOXX Japan 600 Ax Value	STOXX Japan 600
STOXX Japan 600 Ax Momentum	
STOXX Japan 600 Ax Quality	
STOXX Japan 600 Ax Low Risk	
STOXX Japan 600 Ax Size	
STOXX Japan 600 Ax Multi-Factor	

Weighting scheme: The constituents are weighted to maximize the exposure to the required target factor subject to a set of constraints.

Base values and dates: 100 on March 19, 2012

Index types and currencies: Price, net return, gross return in EUR and USD.
For a complete list please consult the data vendor code sheet on the website.

Dissemination calendar: STOXX Americas calendar (Global, Global ex USA, USA), STOXX Europe calendar (Europe) and STOXX Asia calendar (Asia/Pacific, Japan)

21.1.2. INDEX REVIEW

Constituent selection and weighting: The portfolio construction is performed using Axioma's portfolio optimization software using the corresponding Axioma regional medium horizon fundamental equity factor risk model.

The objective is to maximize the exposure to the target factors. The factors are defined in the following way:

Factor	Definition based on Axioma risk model (RM) factors
Value	1/3 RM Value + 2/3 RM Earning Yield
Momentum	RM Medium-Term Momentum
Quality	3/4 RM Profitability - 1/4 RM Leverage
Size	- RM Size
Low Risk	- 1/2 RM Market Sensitivity - 1/2 RM Volatility
Multi-Factor	Equal weight of above 5 factors

The following constraints aim to ensure tradability, diversification, as well as control for unintended systematic exposures:

Target	Constraint
Individual capping	4.5% / min (20x parent index weight, 8%) / 35%, minimum 3 bps in post-processing
Effective number of constituents	At least 30% of parent index
Max. number of constituents	Max(Min(constituents in parent index / 4, 500), 80)
Country/industry exposure	Within 5% of parent index
Tracking error	Within 5% w.r.t. parent index

Liquidity	Weighted Days to Trade of 2 least liquid quintiles limited to be less than 10 times of parent index
Maximum turnover	12.5% one-way on a quarterly basis
Tradability	Freeze weights of stocks with zero/missing volume
Untargeted style factors exposure (single factor indices only)	Within 0.25 standard deviations of parent index
Outliers (multi-factor index only)	No overweight w.r.t. parent index in companies that are in the 5% worst exposure group for each targeted RM factor
Factor backstop exposures (multi-factor index only)	No negative exposure in any of the targeted risk model factors

Individual capping: We apply constraints such that maximum weights (5% / 10% / 40%) are not exceeded at index review, whereby the weight of a constituent cannot exceed 10% and the sum weight of those constituents above 5% cannot exceed 40%. By applying even tighter constraints (4.5% / 8% / 35%), we reduce the likelihood of breaching these thresholds, and reduce the gravity of the breaches if and when they occur.
In addition, individual weights cannot be greater than 20 times the company's weight in the corresponding parent benchmark.
In a post-processing step, after the optimization, components with a weight less 3bps are removed.

Effective number of constituents: The effective number of constituents of an index is defined as the inverse of its Herfindahl index:

$$\mathrm{E} = \frac{1}{\sum \mathrm{w}^2}$$

which provides a measure of the number of constituents that affect a portfolio. The constraint ensures that the optimization procedure does not result in too many constituents with insignificant weights. The constraint is defined as follows:

$$\mathrm{E}_{\mathrm{Factor}} \geq 30\% \cdot \mathrm{E}_{\mathrm{Parent}}$$

Max. number of constituents: The maximum number of constituents in the factor index is limited by:

$$|\mathrm{F}| \leq \mathrm{Max}\left(\mathrm{Min}\left(\frac{|\mathrm{BM}|}{4}, 500\right), 80\right)$$

where
$|\mathrm{F}|$ = number of constituents in the factor index
$|\mathrm{BM}|$ = number of constituents in the corresponding parent index

Country/industry exposure: The exposure to each country and industry is summed up for the parent index, and the percentage exposure of the factor indices must lay within 5 percentage points.

Tracking error: The tracking error of the indices with regards to their parent indices is constrained to a maximum of 5%.

Liquidity: Recognizing that factor exposure maximization process may lead to holding less liquid stocks, the minimum liquidity requirement ensures that there is no material buildup in illiquid positions in certain segments of the portfolio.
The weighted average days-to-trade d_s for a given set of components S is defined as:

$$d_S = \sum_{i \in S} w_i \cdot \frac{w_i \cdot N}{ADV_i}$$

where w_i represents the weight for component i, N the portfolio notional value and MDV_i represents its median 60-day daily traded value.

Components in the parent index are ranked by traded value and liquidity constraints are imposed on components in the two least liquid quintiles. For each of these quintiles Q the weighted average days to trade of the positions therein is required to be no more than 10 times the weighted average days to trade of the same stocks held at corresponding parent index weights.

$$\sum_{i \in Q} w_i \cdot \frac{w_i \cdot N}{MDV_i} \leq \gamma \cdot \sum_{i \in Q} b_i \cdot \frac{b_i \cdot N}{MDV_i}$$

The parameter γ is set to 10 to ensure that an allocation to the factor indices does not take longer to be implemented than ten times compared to an equally sized allocation to the parent index.
b_i represents weights in the corresponding parent index.

Maximum turnover: The indices have a 12.5% one-way turnover constraint, or 25% two-way. This means up to 12.5% of the portfolio is sold in order to purchase other constituents (hence absolute maximum annual turnover is 100%).

Tradability: The weight in the factor index of components with zero or missing volume (as for example for suspended stocks) is frozen.

Untargeted style factors (single-factor indices only): The parent index' exposure to each factor is computed and the single factor index is constrained to be within a quarter standard deviation of that. These constraints make sure the index is closely related in structure to the parent index for the style factors that are not being targeted.

Outliers (multi-factor index only): The multi-factor index will not hold any overweight in constituents in the worst 5% with respect to the targeted style factors.

Factor backstop exposures (multi-factor index only): The parent index' exposure to each factor is computed and the multi-factor index will not hold negative exposures to any of the targeted style factors.

Constraint Hierarchy: If a solution that satisfies the above constraints cannot be found, the following constraints are relaxed iteratively in the following order: 1) Liquidity, 2) Turnover, 3) Tradability. If still no feasible solution is found, the maximum number of components bound is relaxed by increments of 20 until a solution is found.

21. STOXX FACTOR INDICES

Review frequency: The indices are reviewed on a quarterly basis in March, June, September and December together with the respective parent index. The review cut-off date for risk model data is the second Friday of the review month.

21.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: Not applicable.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not added permanently.

21. STOXX FACTOR INDICES

21.2. STOXX ESG-X FACTOR INDICES

21.2.1. OVERVIEW

STOXX single and multi-factor indices aim to harvest the risk premia of several academically validated style factors – Value, Momentum, Quality, Size and Low Risk. At the same time the index rules ensure tradability and diversification as well as limit untargeted systematic exposures. STOXX uses Axioma's risk model and optimizer to construct the factor indices. The STOXX ESG-X single and multi-factor indices are based on the respective STOXX ESG-X country or regional benchmark indices. STOXX uses Axioma's risk model and optimizer to construct the factor indices.

Universe: The constituents of the STOXX ESG-X single and multi-factor indices are selected from the respective STOXX ESG-X country and regional benchmark indices.

Factor Index	Parent Index
STOXX USA 500 ESG-X Ax Value	STOXX USA 500 ESG-X
STOXX USA 500 ESG-X Ax Momentum	
STOXX USA 500 ESG-X Ax Quality	
STOXX USA 500 ESG-X Ax Low Risk	
STOXX USA 500 ESG-X Ax Size	
STOXX USA 500 ESG-X Ax Multi-Factor	
STOXX USA 900 ESG-X Ax Value	STOXX USA 900 ESG-X
STOXX USA 900 ESG-X Ax Momentum	
STOXX USA 900 ESG-X Ax Quality	
STOXX USA 900 ESG-X Ax Low Risk	
STOXX USA 900 ESG-X Ax Size	
STOXX USA 900 ESG-X Ax Multi-Factor	
STOXX Global 1800 ESG-X Ax Value	STOXX Global 1800 ESG-X
STOXX Global 1800 ESG-X Ax Momentum	
STOXX Global 1800 ESG-X Ax Quality	
STOXX Global 1800 ESG-X Ax Low Risk	
STOXX Global 1800 ESG-X Ax Size	
STOXX Global 1800 ESG-X Ax Multi-Factor	
STOXX Europe 600 ESG-X Ax Value	STOXX Europe 600 ESG-X
STOXX Europe 600 ESG-X Ax Momentum	
STOXX Europe 600 ESG-X Ax Quality	
STOXX Europe 600 ESG-X Ax Low Risk	
STOXX Europe 600 ESG-X Ax Size	
STOXX Europe 600 ESG-X Ax Multi-Factor	
STOXX Asia/Pacific ESG-X 600 Ax Value	STOXX Asia/Pacific 600 ESG-X
STOXX Asia/Pacific ESG-X 600 Ax Momentum	
STOXX Asia/Pacific ESG-X 600 Ax Quality	
STOXX Asia/Pacific ESG-X 600 Ax Low Risk	
STOXX Asia/Pacific ESG-X 600 Ax Size	
STOXX Asia/Pacific ESG-X 600 Ax Multi-Factor	
STOXX Japan 600 ESG-X Ax Value	STOXX Japan 600 ESG-X
STOXX Japan 600 ESG-X Ax Momentum	

STOXX Japan 600 ESG-X Ax Quality
STOXX Japan 600 ESG-X Ax Low Risk
STOXX Japan 600 ESG-X Ax Size
STOXX Japan 600 ESG-X Ax Multi-Factor

Weighting scheme: The constituents are weighted to maximize the exposure to the required target factor subject to a set of constraints.

Base values and dates: 100 on March 19, 2012

Index types and currencies: Price, net return, gross return in EUR and USD.
For a complete list please consult the data vendor code sheet on the website.

Dissemination calendar: STOXX Americas calendar (Global, USA), STOXX Europe calendar (Europe) and STOXX Asia calendar (Asia/Pacific, Japan)

21.2.2. INDEX REVIEW

Constituent selection and weighting: The portfolio construction is performed using Axioma's portfolio optimization software using the corresponding Axioma regional medium horizon fundamental equity factor risk model.

The objective is to maximize the exposure to the target factors. The factors are defined in the following way:

Factor	Definition based on Axioma risk model (RM) factors
Value	1/3 RM Value + 2/3 RM Earning Yield
Momentum	RM Medium-Term Momentum
Quality	3/4 RM Profitability - 1/4 RM Leverage
Size	- RM Size
Low Risk	- 1/2 RM Market Sensitivity - 1/2 RM Volatility
Multi-Factor	Equal weight of above 5 factors

The following constraints aim to ensure tradability, diversification, as well as control for unintended systematic exposures:

Target	Constraint
Individual capping	4.5% / min (20x parent index weight, 8%) / 35%, minimum 3 bps in post-processing
Effective number of constituents	At least 30% of parent index
Max. number of constituents	Max(Min(constituents in parent index / 4, 500), 80)
Country/industry exposure	Within 5% of parent index
Tracking error	Within 5% w.r.t. parent index
Liquidity	Weighted Days to Trade of 2 least liquid quintiles limited to be less than 10 times of parent index
Maximum turnover	12.5% one-way on a quarterly basis
Tradability	Freeze weights of stocks with zero/missing volume
Untargeted style factors exposure (single factor indices only)	Within 0.25 standard deviations of parent index

21. STOXX FACTOR INDICES

Outliers (multi-factor index only)	No overweight w.r.t. parent index in companies that are in the 5% worst exposure group for each targeted RM factor
Factor backstop exposures (multi-factor index only)	No negative exposure in any of the targeted risk model factors

Individual capping: We apply constraints such that maximum weights (5% / 10% / 40%) are not exceeded at index review, whereby the weight of a constituent cannot exceed 10% and the sum weight of those constituents above 5% cannot exceed 40%. By applying even tighter constraints (4.5% / 8% / 35%), we reduce the likelihood of breaching these thresholds, and reduce the gravity of the breaches if and when they occur.
In addition, individual weights cannot be greater than 20 times the company's weight in the corresponding parent benchmark.
In a post-processing step, after the optimization, components with a weight less 3bps are removed.

Effective number of constituents: The effective number of constituents of an index is defined as the inverse of its Herfindahl index:

$$\mathrm{E} = \frac{1}{\sum \mathrm{w}^2}$$

which provides a measure of the number of constituents that affect a portfolio. The constraint ensures that the optimization procedure does not result in too many constituents with insignificant weights. The constraint is defined as follows:

$$\mathrm{E}_{\mathrm{Factor}} \geq 30\% \cdot \mathrm{E}_{\mathrm{Parent}}$$

Max. number of constituents: The maximum number of constituents in the factor index is limited by:

$$|\mathrm{F}| \leq \mathrm{Max}\left(\mathrm{Min}\left(\frac{|\mathrm{BM}|}{4}, 500\right), 80\right)$$

where

$\|\mathrm{F}\|$	= number of constituents in the factor index
$\|\mathrm{BM}\|$	= number of constituents in the corresponding parent index

Country/industry exposure: The exposure to each country and industry is summed up for the parent index, and the percentage exposure of the factor indices must lay within 5 percentage points.

Tracking error: The tracking error of the indices with regards to their parent indices is constrained to a maximum of 5%.

Liquidity: Recognizing that factor exposure maximization process may lead to holding less liquid stocks, the minimum liquidity requirement ensures that there is no material buildup in illiquid positions in certain segments of the portfolio.
The weighted average days-to-trade d_s for a given set of components S is defined as:

$$d_S = \sum_{i \in S} w_i \cdot \frac{w_i \cdot N}{ADV_i}$$

where w_i represents the weight for component i, N the portfolio notional value and MDV_i represents its median 60-day daily traded value.

Components in the parent index are ranked by traded value and liquidity constraints are imposed on components in the two least liquid quintiles. For each of these quintiles Q the weighted average days to trade of the positions therein is required to be no more than 10 times the weighted average days to trade of the same stocks held at corresponding parent index weights.

$$\sum_{i \in Q} w_i \cdot \frac{w_i \cdot N}{MDV_i} \leq \gamma \cdot \sum_{i \in Q} b_i \cdot \frac{b_i \cdot N}{MDV_i}$$

The parameter γ is set to 10 to ensure that an allocation to the factor indices does not take longer to be implemented than ten times compared to an equally sized allocation to the parent index. b_i represents weights in the corresponding parent index.

Maximum turnover: The indices have a 12.5% one-way turnover constraint, or 25% two-way. This means up to 12.5% of the portfolio is sold in order to purchase other constituents (hence absolute maximum annual turnover is 100%).

Tradability: The weight in the factor index of components with zero or missing volume (as for example for suspended stocks) is frozen.

Untargeted style factors (single-factor indices only): The parent index' exposure to each factor is computed and the single factor index is constrained to be within a quarter standard deviation of that. These constraints make sure the index is closely related in structure to the parent index for the style factors that are not being targeted.

Outliers (multi-factor index only): The multi-factor index will not hold any overweight in constituents in the worst 5% with respect to the targeted style factors.

Factor backstop exposures (multi-factor index only): The parent index' exposure to each factor is computed and the multi-factor index will not hold negative exposures to any of the targeted style factors.

Constraint Hierarchy: If a solution that satisfies the above constraints cannot be found, the following constraints are relaxed iteratively in the following order: 1) Liquidity, 2) Turnover, 3) Tradability. If still no feasible solution is found, the maximum number of components bound is relaxed by increments of 20 until a solution is found.

Review frequency: The indices are reviewed on a quarterly basis in March, June, September and December together with the respective parent index. The review cut-off date for risk model data is the second Friday of the review month.

21.2.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

21. STOXX FACTOR INDICES

Fast exit: In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent's weight will be distributed among the remaining constituents.

Fast entry: Not applicable.

Spin-offs: Spin-off stocks are not added permanently.

22. STOXX CTB AND STOXX PAB INDICES

22.1. STOXX CLIMATE TRANSITION BENCHMARK INDICES

22.1.1. OVERVIEW

The STOXX Climate Transition Benchmark Indices track the performance of liquid securities from a selection of STOXX Benchmark Indices. The indices[46] are constructed to follow the EU Climate Transition Benchmark (EU CTB) requirements outlined in the Technical Expert Group (TEG) Final Report[47], considerations detailed in the Report on Benchmarks Handbook[48] and the draft Commission delegated regulation[49]. The indices are designed to help investors in the transition to a low-carbon economy by adopting a decarbonization trajectory.

Companies identified as non-compliant based on Sustainalytics Global Standards Screening (GSS) assessment or are involved in Controversial Weapons are not eligible for selection. Tobacco Producers, as identified by ISS ESG, are also not eligible.

The weighing process follows an optimization process to meet the minimum requirements detailed in the TEG Final Report. The STOXX Climate Transition Benchmark Indices aim to reduce their greenhouse gases (GHG) emission intensity by at least 30% when compared to their underlying benchmarks. Additionally, they are designed to meet the year on year 7% decarbonization target. Scope 1, Scope 2 and Scope 3 emissions are used in the total emission considerations[50]. All of these emissions, including Scope 3, are used across all sectors from the first date of index construction.

The Technical Expert Group recommends that the EU CTB exposure to 'High Climate Impact sectors', sectors that are key to low-carbon transition, is not underweighted relative to the investment universe. STOXX will classify the eligible securities into two sectoral groups: 'High Climate Impact' and 'Low Climate Impact'. This classification is based on the securities' NACE industry classification, as per the Technical Expert Group's recommendations[51]. The securities in the STOXX Climate Transition Benchmark (STOXX CTB) Indices are weighted such that the total weight of the high climate impact components is at least equal to the total high climate impact weight in the corresponding STOXX Benchmark Index.

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[46] The methodology may be adapted to meet the final CTB requirements once the European Commission outlines the final delegated acts. The index is currently based on the minimum technical recommendations given in the TEG Final Report (September 2019), considerations detailed in the Report on Benchmarks Handbook (December 2019) and the the draft Commission delegated regulation (April 2020)

[47] https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190930-sustainable-finance-teg-final-report-climate-benchmarks-and-disclosures_en.pdf

[48] https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/192020-sustainable-finance-teg-benchmarks-handbook_en_0.pdf

[49] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1586435453579&uri=PI_COM:Ares(2020)1993773

[50] Scope 1, Scope 2 and Scope 3 data obtained from ISS ESG. As a first step, ISS ESG collects all publicly available self-reported greenhouse gas emissions data from corporate disclosures such as CDP and CSR reports. Once self-reported emissions data from all available sources is collected, the data is tested for trustworthiness. This is done through a combination of quantitative and qualitative analysis.

[51] The TEG report identifies stocks in the NACE Section codes: A, B, C, D, E, F, G, H, L as "High Climate Impact" and stocks in the NACE section codes: I, J, K, M, N, O, P, Q, R, S, T, U as "Low Climate Impact". Further information regarding NACE can be found on https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE)

22. STOXX CTB AND STOXX PAB INDICES

ISS ESG tracks companies that have disclosed science-based targets with the Science Based Targets initiative (SBTi)[52]. This comprises a list of securities that are setting greenhouse gas emission reduction targets in line with the goals of the Paris Agreement, i.e. to keep “global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.”[53] STOXX will use this information to identify which of these three groups companies belong to: (a) companies with concrete targets and emission reduction targets verified by SBTi, (b) companies that have committed to the SBTi but do not yet have approved targets, and (c) those that have not yet committed with the SBTi. The STOXX Climate Transition Benchmark Indices overweigh companies with SBTi approved targets, and even more so those with SBTi approved targets and consistent 7% or more reduction in annual GHG intensity. Moreover, STOXX will allow up to 10 years of transition time for securities to commit and have their science-based targets approved and published by the SBTi. Starting in March 2021, securities that have not committed to the science-based initiatives will be underweighted incrementally and will not be eligible for selection starting in March 2025. Similarly, securities that are committed but do not have SBTi verified targets will be subjected to incremental underweighting (March 2021 to March 2030). From March 2030, the STOXX Climate Transition Benchmark Indices will only include companies that have their targets approved and published by the SBTi. This is with the intention of incentivizing companies to commit and set science-based targets.

ISS ESG’s Carbon Risk Rating data assesses companies’ capacity to manage future climate change related challenges and opportunities arising from the transition to a low-carbon economy. The risk rating considers companies’ risk profiles, industry-specific challenges, companies’ positive impact and ability to seize opportunities. STOXX uses this forward-looking CO_2 risk analysis to overweigh climate leaders while laggards are underweighted.

ISS ESG’s Carbon Budget data helps assess companies’ alignment with different scenarios. This Carbon Budget data is used in the weighing process of the STOXX Climate Transition Benchmark Indices to and ensure the indices are aligned with the IEA 2^0C scenario until 2050.

STOXX Climate Transition Benchmark Indices
EURO STOXX Climate Transition Benchmark
EURO STOXX Total Market Climate Transition Benchmark
STOXX Europe 600 Climate Transition Benchmark
STOXX Global 1800 Climate Transition Benchmark
STOXX USA 500 Climate Transition Benchmark
STOXX USA 900 Climate Transition Benchmark

Universe: The index universe is defined by all the stocks included in the corresponding STOXX Benchmark Index, as observed on the review effective date.

Weighting scheme: The index is price-weighted with weighting factors determined according to an optimization process to meet the EU CTB recommendations

Base value and date: 100 on Mar 19, 2018

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[52] https://sciencebasedtargets.org/; the SBTi is a collaboration between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and one of the We Mean Business Coalition commitments

[53] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

22. STOXX CTB AND STOXX PAB INDICES

Index types and currencies: Price, Net and Gross return in EUR and USD

Dissemination calendar: STOXX Europe calendar, except for the STOXX USA 500 Climate Transition Benchmark and STOXX USA 900 Climate Transition Benchmark Indices, which rely on the STOXX Americas calendar

22.1.2. INDEX REVIEW

Selection list:
The review cut-off date is the last dissemination day of the month preceding the review month of the index, and upon this date, a set of exclusionary criteria are applied.

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.

The criteria for involvement are:
- » Internal production or sale
- » The ultimate holding company owns >10% of voting rights of an involved company
- » >10% of voting rights of a company is owned by the involved company

Tobacco:
STOXX will exclude companies that ISS ESG identifies to be Tobacco Producers (0% revenue threshold).

The remaining securities in the universe list are screened for the following fundamental values (i and ii) and ISS ESG carbon and climate related indicators (iii to viii):

i. 3-month Average Daily Traded Volume (ADTV) in EUR
ii. Enterprise value including cash (EVIC)
iii. Emissions data: Scope 1, Scope 2 and Scope 3 emissions
The GHG Protocol Corporate Standard classifies companies' greenhouse gas (GHG) emissions as direct and indirect emissions[54]. Direct emissions, also known as Scope 1 emissions, refer to GHG waste produced and consumed by the reporting entity. For instance, on-site generation and use of energy is tracked under Scope 1. In contrast,

[54] https://ghgprotocol.org/sites/default/files/standards/Scope%202%20Guidance_Final_Sept26.pdf

22. STOXX CTB AND STOXX PAB INDICES

indirect emissions, comprised of Scope 2 and Scope 3 emissions, occur as a consequence of the reporting company, but are generated by another entity. Scope 2 includes acquired/ purchased energy brought into the company's reporting boundary as a form of: electricity, steam, heating and cooling, and the rest of the indirect emissions form Scope 3 emissions. Any emissions associated with upstream and downstream processes, excluding Scope 2 emissions, are accrued towards Scope 3. Business travel, processing of sold products, transportation and distribution are all examples of Scope 3 emissions[55].

iv. Carbon Risk Rating: ISS ESG evaluates companies' capacity to cope with future challenges related to climate change and to seize opportunities arising from a transition to a low-carbon economy. This data will be used to overweigh climate leaders, and climate laggards will be underweighted.

v. Carbon Budget: ISS ESG Carbon Budget data helps assess companies' alignment with different scenarios. STOXX will use this Carbon Budget data in the weighing process of the STOXX Climate Transition Benchmark Indices and to ensure the indices are aligned with the IEA 2^0C scenario until 2050.

The ISS ESG scenario analysis combines the IEA scenario with the Sectoral Decarbonization Approach (SDA) by allocating a share of a global carbon budget to every company based on its market share and the IEA/SDA emissions scenario associated with its sector.

vi. Percentage of revenues from green sources: revenues coming from renewable energy sources such as: wind, solar, hydro, biomass and geothermal sources. Nuclear Power is also considered as a green revenue source. In addition to these, the definition of green revenues extends to revenues that contribute to UN Sustainable Development Goal (UN SDG) 13, Climate Action[56].

vii. Percentage of revenues from brown sources: any revenues from fossil fuels (coal, oil, gas, Arctic drilling, hydraulic fracturing and oil sands) and the provision of supporting products or services is considered as brown revenue. The definition of brown revenues also extends to revenues that are obstructive to UN Sustainable Development Goal (UN SDG) 13, Climate Action.

Green and brown energy revenue shares will be used in the construction of the indices to ensure the total green share / brown revenue share of the STOXX Climate Transition Benchmark Indices is at least equivalent to that of the underlying benchmarks' green to brown revenue shares.

viii. Science-based Climate Targets: ISS ESG tracks securities that have disclosed science-based targets in line with the level of decarbonization required to keep global temperature increase below 2^0C. STOXX will use this data to identify which of the following three groups companies fall into:

a. companies with concrete targets and emission reduction targets verified by the SBTi
b. companies that have committed with the SBTi but do not yet have approved science-based targets. Committed companies have 24 months to have their targets approved and published by the SBTi
c. companies that have not committed with SBTi

Securities with targets verified by the SBTi will be overweighed in the index. Securities with no commitments or no SBTi approved targets will be subjected to incremental underweighting and will not be eligible for selection starting 2025 and 2030 respectively.

[55] http://www.ghgprotocol.org/sites/default/files/ghgp/standards/Scope3_Calculation_Guidance_0.pdf

[56] SDG 13, Take urgent action to combat climate change and its impacts, is one of the UN Sustainable Development Goals (UN SDGs)

22. STOXX CTB AND STOXX PAB INDICES

If any of the i to v fields are unavailable for a security, the company will not be eligible for selection. Additionally, if a security does not have green or brown revenue share data, STOXX will assume the revenue share in these areas to be zero. STOXX will assume that a security is not committed if no science-based climate target data is available for it.

The selection list is made of all the remaining stocks that fulfil the condition below:
- Liquidity requirements: 3-month ADTV equal to or exceeding 3 million EUR

Composition list:
The final composition list comprises all the securities that fulfil the requirements listed above. The securities' weights are derived through an optimization process and designed to meet the following requirements:

EU CTB Minimum requirements	STOXX Climate Transition Benchmark Indices
Minimum Scope 1+2+3 GHG intensity reduction compared to the corresponding STOXX Benchmark Index The GHG intensity of a security is calculated as: $\frac{Scope\ 1 + Scope\ 2 + Scope\ 3\ GHG\ Emissions}{Enterprise\ Value\ including\ Cash\ (in\ MEUR)}$	At least 40% (includes a 10% buffer)
Year-on-year self-decarbonization per annum relative to the levels at inception in accordance with the global decarbonization trajectory implied by IPCC's 1.5°C scenario with no or limited overshoot	At least 7% on average per annum since index launch, after taking in consideration any inflation in enterprise values
Minimum exposure to sectors highly exposed to climate change issues compared to the underlying STOXX Benchmark Index These sectors are identified as "High Climate Impact" based on NACE section codes[57]	At least equal
Corporate target setting (CTS)	The Corporate target setting score aims to ensure that companies with Science Based Target are overweighed and that: - by 2025, all companies in the index are committed to reducing their GHG emissions, and - by 2030, all companies in the index have SBTi approved science-based targets In more details: 1. Companies that have science-based targets approved and reported through the Science Based Target initiative and have reduced their total GHG emission intensity (Scope 1,2 and 3 emissions) by an average of at least 7% per annum for at least 3 consecutive years will have their weights increased by 1/3

[57] The TEG report identifies stocks in the NACE Section codes: A, B, C, D, E, F, G, H, L as "High Climate Impact" and stocks in the NACE section codes: I, J, K, M, N, O, P, Q, R, S, T, U as "Low Climate Impact". Further information regarding NACE can be found on https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE)

22. STOXX CTB AND STOXX PAB INDICES

2. Companies that have science-based targets approved and reported through the Science Based Target initiative but have not fulfilled the above carbon reduction criteria will have their weights increased by 1/5
3. Companies that are committed to reducing their GHG emissions but do not yet have science-based targets approved by the Science Based Target initiative will have their weights reduced by Y/10 where Y is the number of years since 2020
4. Companies that are not committed to reducing their GHG emissions will have their weight reduced by Y/5 where Y is the number of years since 2020

Additional considerations	STOXX Climate Transition Benchmark Indices
Alignment with 2°C scenario	The emissions pathway of the indices must be below the carbon budget for the 2°C scenario of the current year and 2050
Carbon Risk Rating tilt	Climate leaders are overweighed, and climate laggards are underweighted
Carbon Budget risk tilt	Companies that are well positioned to meet their carbon budget are overweighed
Minimum green share / brown share ratio compared to the underlying STOXX Benchmark Index	At least equivalent
Diversification	Exposure to a single NACE Section is within 5% of the of the underlying STOXX Benchmark Index exposure If the underlying benchmark's exposure in any of the NACE Sections is greater than 30%, an additional maximum exposure constraint on the NACE Division[58] weights will be imposed for the CTB index. In this case, the STOXX CTB Index exposure to a single NACE Division (within the NACE Section) cannot exceed the underlying STOXX Benchmark Index exposure by higher than 5% Country exposure is within 5% of the country weight in the underlying benchmark
Weight capping	Maximum weight: 4.5% Minimum weight: index dependent

Weighting and capping factors:
The weights are derived though an optimization process with the goal to have a portfolio which is in line or beyond the decarbonization trajectory from the IPCC's 1.5°C scenario and that overweighs companies with a clear and proved evidence-based carbon reduction target as verified by SBTi.

Target weight calculations:
The target weight is defined according to the free-float market capitalization subject to the corporate target setting and carbon risk rating multipliers, as follows:

[58] NACE Division is a step lower (more granular) from the NACE Section code

22. STOXX CTB AND STOXX PAB INDICES

$$w_i = \frac{ffmcap_i \cdot CTS_i * CR_i}{\sum_j^n ffmcap_j \cdot CTS_j * CR_j}$$

Where:

CTS_i	= (1 + 1/3) if a company has verified science-based targets in accordance to the SBTi and has reduced its GHG intensity by an average of at least 7% per annum for at least 3 consecutive years
	= (1 + 1/5) if a company has verified science-based targets in accordance to the SBTi but has not fulfilled the above GHG intensity reduction criteria
	= (1 – min(1, Y/10)) if a company is committed to reducing its GHG emissions but does not have science-based targets approved by the SBTi
	= (1 – min(1, Y/5)) if a company is not committed to reducing its GHG emissions
Y	number of years since 2020. Y is 0 for 2020 and earlier years
N	number of components in the index
CR_i	= (1 + CR_z_i) if CR_z_i >0
	= $(1 - CR\_z_i)^{-1}$ if CR_z_i <=0
CR_z_i	= CRR_z_i - CBR_z_i

CRR_z_i= zeta score of the company's Carbon Risk Rating, as defined by ISS ESG

CBR_z_i = zeta score of the company's Carbon Budget risk, calculated as

$$CBR_i = \frac{\sum \varphi_j * ln\left(\frac{current\ carbon\ emission_i}{carbon\ budget_{i,j}}\right)}{\sum \varphi_j}$$

Where: $\varphi_j = (1 - \lambda) * \lambda^j, \quad j = 0, \dots, 2050 - current\ year$

$\lambda = 0.94$ (standard decay factor[59])

Capped weight calculations:

The capped weights cw_i are derived from target weights via an optimization that minimizes the relative squared difference between the target weights and the capped weights while ensuring that the year-on-year self-decarbonization fulfils the criteria of at least 7% on average starting from 2021 with respect to 2020. The optimization is performed to arrive at the weights subject to constraints to ensure that the composition fulfils the minimum requirements:

$$cw_i = argmin_{cw}\left(\sum_{i=1}^{n}\left(\frac{(cw_i - w_i)^2}{w_i}\right) \cdot \frac{1}{n} + \frac{(Previous\ year's\ GHG\ intensity\ reduction - 0.07)^2}{0.07}\right)$$

The previous year's GHG intensity reduction starting from 2021 with respect to 2020 is calculated as:

[59] Standard decay factor, suggested and used by Riskmetrics

22. STOXX CTB AND STOXX PAB INDICES

$$1 - \left(\frac{Index\ GHG\ Intensity_{current} \cdot (Inflation\ Adjustment\ Factor)}{Index\ GHG\ Intensity_{previous\ year-end}}\right)$$

where $Index\ GHG\ Intensity_t = \sum_{i=1}^{n}\left(w_{i,t} \cdot Security\ GHG\ Intensity_{i,t}\right)$ and $w_{i,t}$ is the weight of company i in the index at time t.

In calculating the previous year's GHG intensity reduction, the current GHG intensity is multiplied by the enterprise value inflation adjustment factor[60] in order to reflect the effects of inflation in enterprise values as an increasing average enterprise value of the index constituents could lead to an overall GHG intensity reduction where no actual GHG emissions reductions took place.

The following are the constraints of the optimization:

a) Maximum security weight of 4.5%, and minimum weights set as follows:

Number of constituents in the parent index	Minimum weight constraints
600 or less	0.01%
Between 600 and 1200	0.005%
1200 or more	0.001%

b) The GHG intensity reduction of the index, $\sum_{i=1}^{n}(cw_i \cdot Security\ GHG\ Intensity_i)$ should be at least 40% when compared to the underlying STOXX Benchmark Index GHG Intensity,

c) Year-on-year GHG intensity reduction of at least 7% starting from 2021 with respect to 2020. The year-on-year carbon reduction included is calculated as:

$$1 - \left(\frac{Index\ GHG\ Intensity_{current} \cdot Cumulative\ Inflation\ Adjustment\ Factor}{Index\ GHG\ Intensity_{2020\ year-end}}\right)^{1/Y}$$

d) The green revenue share / brown revenue share of the index, $\frac{\sum_{i=1}^{n}(cw_i \cdot Green\ Revenue\ \%_i)}{\sum_{i=1}^{n}(cw_i \cdot Brown\ Revenue\ \%_i)}$, is at least equivalent to that of the underlying STOXX Benchmark Index

e) The total exposure of components in the "High Climate Impact" according to NACE classification is at least equal to the corresponding STOXX Benchmark Index

f) The exposure to a single NACE Section code is within 5% of the underlying STOXX Benchmark Index exposure

If the underlying STOXX Benchmark Index exposure in any of the NACE Sections is greater than 30%, an additional maximum exposure constraint on the NACE Division weights will be imposed for the CTB index. In this case, the STOXX CTB Index exposure to a single NACE Division (within the NACE Section) cannot exceed the underlying STOXX Benchmark Index exposure by higher than 5%

[60] The enterprise value inflation adjustment factor is computed by dividing the average enterprise value of the index constituents at the end of calendar year by the average enterprise value of the index constituents at the end of the previous calendar year and has a minimum value of 1

g) The exposure to a country is within 5% of the STOXX Benchmark Index

h) The emission pathway of the index must be below its carbon budget for the 2°C scenario of the current year and 2050. This is to ensure that the index is aligned with the 2°C scenario decarbonization trajectory until 2050

Weighting factors are based on the closing prices in EUR (pi) of the Thursday prior to the second Friday of the review month:
Weighting factor = (1,000,000,000,000 x wi / pi), rounded to the nearest integer value.

Review frequency:
The review is conducted on an annual basis in March. On a quarterly basis in June, September and December, the indices are rebalanced to consider changes in free-float or shares in issue. Furthermore, current components are screened for compliance and involvement. The cut-off date for the underlying data is the last calculation day of February, May, August and November respectively.

22.1.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent's weight will be distributed among the remaining constituents.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently

Corporate Actions: All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

STOXX reserves the right to amend the methodology without a formal market consultation to meet the final EU CTB requirements once the European Commission outlines the final delegated acts in accordance with the regulations.

22. STOXX CTB AND STOXX PAB INDICES

22.1.4. SUMMARY

Summary	STOXX Climate Transition Benchmark Indices
Universe	A selection of STOXX Benchmark Indices
Screens	
Baseline Exclusions	Global Standards Screening Controversial Weapons Tobacco producers
Liquidity Requirements	3-month ADTV equal to or exceeding 3 million EUR
Weighing process: weights derived through an optimization process to meet EU CTB requirements	
Minimum Scope 1+2+3 GHG intensity reduction compared to corresponding STOXX Benchmark Index Scope 1, 2 and 3 emissions, are used across all sectors from the first date of index construction	At least 40% (includes a 10% buffer)
Year-on-year self-decarbonization per annum relative to the levels at inception in accordance with the global decarbonization trajectory implied by IPCC's 1.5°C scenario with no or limited overshoot	At least 7% on average per annum since index launch, after taking in consideration any inflation in enterprise values
Minimum green share / brown share ratio compared to the underlying STOXX Benchmark Index	At least equivalent
Minimum exposure of sectors highly exposed to climate change compared to the underlying STOXX Benchmark Index	At least equal
Corporate target setting (CTS)	Securities' free float market cap weights tilted with CTS score to favor securities with science-based targets. CTS scores assigned as follows:

CTS score	2020	2021	…	2025	…	2029	2030 and later
Committed, has SBTi verified targets, and reduces GHG emission (>= 7%/annum for 3 years)	1+1/3 = 4/3						
Committed, has SBTi verified targets, but does not reduce GHG emissions by 7% per annum	1+1/5 = 6/5						
Committed but does not have SBTi approved targets	1	9/10	…	5/10	…	1/10	0
Not committed	1	4/5	..	0			

	Additionally, Carbon Budget and Carbon Risk score and will be used to tilt the weights further. Tilt factor obtained as follows: CR_i = $(1 + CR\_z_i)$ if $CR\_z_i > 0$ = $(1 - CR\_z_i)^{-1}$ if $CR\_z_i <= 0$ CR_z_i = CRR_z_i - CBR_z_i CRR_z_i= zeta score of the company's Carbon Risk Rating, as defined by ISS ESG CBR_z_i = zeta score of the company's Carbon Budget risk, calculated as $$CBR_i = \frac{\Sigma\varphi_j * ln\left(\frac{current\ carbon\ emission_i}{carbon\ budget_{i,j}}\right)}{\Sigma\varphi_j}$$ Where: $\varphi_j = (1-\lambda) * \lambda^j, j = 0, \dots\ , 2050 - current\ year$ $\lambda = 0.94$ (standard decay factor[61]) $w_i = \frac{ffmcap_i \cdot CTS_i * CR_i}{\Sigma_j^n ffmcap_j \cdot CTS_j * CR_j}$; where w_i is the weight of security i
Diversification	Exposure to a single NACE Section is within 5% of the of the underlying STOXX Benchmark Index exposure If the underlying benchmark's exposure in any of the NACE Sections is greater than 30%, an additional maximum exposure constraint on the NACE Division[62] weights will be imposed for the CTB index. In this case, the STOXX CTB Index exposure to a single NACE Division (within the NACE Section) cannot exceed the underlying STOXX Benchmark Index exposure by higher than 5% Country exposure is within 5% of the country weight in the underlying benchmark
Weight Capping	Maximum weight: 4.5% Minimum weight: index dependent
Selection and Weighing Frequency	
Review and Rebalancing	Review is conducted on an annual basis in March, and rebalanced quarterly in June, September and December

[61] Standard decay factor, suggested and used by Riskmetrics

[62] NACE Division is a step lower (more granular) from the NACE Section code

22. STOXX CTB AND STOXX PAB INDICES

22.2. STOXX PARIS-ALIGNED BENCHMARK INDICES

22.2.1. OVERVIEW

The STOXX Paris-Aligned Benchmark Indices track the performance of liquid securities from a selection of STOXX Benchmark Indices. The indices[63] are constructed to follow the EU Paris-aligned Benchmark (EU PAB) requirements outlined in the Technical Expert Group (TEG) Final Report[64], considerations detailed in the Report on Benchmarks Handbook[65] and the draft Commission delegated regulation[66]. The indices are designed to help investors align investments with the overall long-term global warming target of the Paris Agreement.

Companies identified as non-compliant based on Sustainalytics Global Standards Screening (GSS) assessment or are involved in Controversial Weapons are not eligible for selection. Tobacco Producers, as identified by ISS ESG, are also not eligible. Securities that generate revenues above a certain threshold from coal, oil and gas exploration or processing activities are excluded. Additionally, securities that derive higher than 10% of their revenues from thermal coal-based power generation, or higher than 50% from power generation with carbon intensity of lifecycle emissions higher than 100gCO_2e/kWh are not considered for selection. Furthermore, STOXX will exclude companies that ISS ESG assesses to have significant obstruction in the UN SDG 13.

The weighing process follows an optimization process to meet the minimum requirements detailed in the TEG Final Report. The STOXX Paris-Aligned Benchmark Indices aim to reduce their greenhouse gases (GHG) emission intensity by at least 50% when compared to their underlying benchmarks. Additionally, they are designed to meet the year on year 7% decarbonization target. Scope 1, Scope 2 and Scope 3 emissions are used in the total emission considerations[67]. All of these emissions, including Scope 3, are used across all sectors from the first date of index construction.

The Technical Expert Group recommends that the EU PAB exposure to 'High Climate Impact sectors', sectors that are key to low-carbon transition, is not underweighted relative to the investment universe. STOXX will classify the eligible securities into two sectoral groups: 'High Climate Impact' and 'Low Climate Impact'. This classification is based on the securities' NACE industry classification, as per the Technical Expert Group's recommendations[68]. The securities in

[63] The methodology may be adapted to meet the final PAB requirements once the European Commission outlines the final delegated acts. The index is currently based on the minimum technical recommendations given in the TEG Final Report (September 2019), considerations detailed in the Report on Benchmarks Handbook (December 2019) and the draft Commission delegatd regulation (April 2020)

[64] https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/190930-sustainable-finance-teg-final-report-climate-benchmarks-and-disclosures_en.pdf

[65] https://ec.europa.eu/info/sites/info/files/business_economy_euro/banking_and_finance/documents/192020-sustainable-finance-teg-benchmarks-handbook_en_0.pdf

[66] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1586435453579&uri=PI_COM:Ares(2020)1993773

[67] Scope 1, Scope 2 and Scope 3 data obtained from ISS ESG. As a first step, ISS ESG collects all publicly available self-reported greenhouse gas emissions data from corporate disclosures such as CDP and CSR reports. Once self-reported emissions data from all available sources is collected, the data is tested for trustworthiness. This is done through a combination of quantitative and qualitative analysis.

[68] The TEG report identifies stocks in the NACE Section codes: A, B, C, D, E, F, G, H, L as "High Climate Impact" and stocks in the NACE section codes: I, J, K, M, N, O, P, Q, R, S, T, U as "Low Climate Impact". Further information regarding NACE can be found on https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE)

22. STOXX CTB AND STOXX PAB INDICES

the STOXX Paris-Aligned Benchmark (STOXX PAB) Indices are weighted such that the total weight of the high climate impact components is at least equal to the total high climate impact weight in the corresponding STOXX Benchmark Index.

ISS ESG tracks companies that have disclosed science-based targets with the Science Based Targets initiative (SBTi)[69]. This comprises a list of securities that are setting greenhouse gas emission reduction targets in line with the goals of the Paris Agreement, i.e. to keep "global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius."[70] STOXX will use this information to identify which of these three groups companies belong to: (a) companies with concrete targets and emission reduction targets verified by SBTi, (b) companies that have committed to the SBTi but do not yet have approved targets, and (c) those that have not yet committed with the SBTi. The STOXX Paris-Aligned Benchmark Indices overweigh companies with SBTi approved targets, and even more so those with SBTi approved targets and consistent 7% or more reduction in annual GHG intensity. Moreover, STOXX will allow up to 10 years of transition time for securities to commit and have their science-based targets approved and published by the SBTi. Starting in March 2021, securities that have not committed to the science-based initiatives will be underweighted incrementally and will not be eligible for selection starting in March 2025. Similarly, securities that are committed but do not have SBTi verified targets will be subjected to incremental underweighting (March 2021 to March 2030). From March 2030, the STOXX Paris-Aligned Benchmark Indices will only include companies that have their targets approved and published by the SBTi. This is with the intention of incentivizing companies to commit and set science-based targets.

ISS ESG's Carbon Risk Rating data assesses companies' capacity to manage future climate change related challenges and opportunities arising from the transition to a low-carbon economy. The risk rating considers companies' risk profiles, industry-specific challenges, companies' positive impact and ability to seize opportunities. STOXX uses this forward-looking CO_2 risk analysis to overweigh climate leaders while laggards are underweighted.

ISS ESG's Carbon Budget data helps assess companies' alignment with different scenarios. This Carbon Budget data is used in the weighing process of the STOXX Paris-Aligned Benchmark Indices and to ensure the indices are aligned with the IEA 2^0C scenario until 2050.

STOXX Paris-Aligned Benchmark Indices
EURO STOXX Paris-Aligned Benchmark
EURO STOXX Total Market Paris-Aligned Benchmark
STOXX Europe 600 Paris-Aligned Benchmark
STOXX Global 1800 Paris-Aligned Benchmark
STOXX USA 500 Paris-Aligned Benchmark
STOXX USA 900 Paris-Aligned Benchmark

Universe: The index universe is defined by all the stocks included in the corresponding STOXX Benchmark Index, as observed on the review effective date.

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[69] https://sciencebasedtargets.org/; the SBTi is a collaboration between CDP, the United Nations Global Compact (UNGC), World Resources Institute (WRI), the World Wide Fund for Nature (WWF), and one of the We Mean Business Coalition commitments

[70] https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement

22. STOXX CTB AND STOXX PAB INDICES

Weighting scheme: The index is price-weighted with weighting factors determined according to an optimization process to meet the EU PAB recommendations

Base value and date: 100 on Mar 19, 2018

Index types and currencies: Price, Net and Gross return in EUR and USD

Dissemination calendar: STOXX Europe calendar, except for the STOXX USA 500 Paris-Aligned Benchmark and STOXX USA 900 Paris-Aligned Benchmark Indices, which rely on the STOXX Americas calendar

22.2.2. INDEX REVIEW

Selection list:
The review cut-off date is the last dissemination day of the month preceding the review month of the index, and upon this date, a set of exclusionary criteria are applied.

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

Controversial Weapons:
STOXX will exclude the companies that Sustainalytics identifies to be involved with controversial weapons.

The following weapons are considered controversial: anti-personnel mines, biological and chemical weapons, cluster weapons, depleted uranium, nuclear weapons and white phosphorus weapons.

The criteria for involvement are:
» Internal production or sale
» The ultimate holding company owns >10% of voting rights of an involved company
» >10% of voting rights of a company is owned by the involved company

Tobacco:
STOXX will exclude companies that ISS ESG identifies to be Tobacco Producers (0% revenue threshold).

The remaining securities in the universe list are screened for the following fundamental values (i and ii) and ISS ESG carbon and climate related indicators (iii to xiii):

i. 3-month Average Daily Traded Volume (ADTV) in EUR
ii. Enterprise value including cash (EVIC)
iii. Emissions data: Scope 1, Scope 2 and Scope 3 emissions

The GHG Protocol Corporate Standard classifies companies' greenhouse gas (GHG) emissions as direct and indirect emissions[71]. Direct emissions, also known as Scope 1 emissions, refer to GHG waste produced and consumed by the reporting entity. For instance, on-site generation and use of energy is tracked under Scope 1. In contrast, indirect emissions, comprised of Scope 2 and Scope 3 emissions, occur as a consequence of the reporting company, but are generated by another entity. Scope 2 includes acquired/ purchased energy brought into the company's reporting boundary as a form of: electricity, steam, heating and cooling, and the rest of the indirect emissions form Scope 3 emissions. Any emissions associated with upstream and downstream processes, excluding Scope 2 emissions, are accrued towards Scope 3. Business travel, processing of sold products, transportation and distribution are all examples of Scope 3 emissions[72].

iv. Percentage of revenues from coal: this looks at the securities' revenue generated from coal exploration, production (excluding power generation), distribution, and supporting products and services. Power generation revenue share is considered separately and detailed in vi.

v. Percentage of revenues from fossil fuel exploration, production (excluding power generation), distribution and provision of supporting products and services: this looks at companies' revenue share in fossil fuels, including coal, oil, gas, Arctic drilling, hydraulic fracturing and oil sands. Power generation revenue share is considered separately and detailed in vii.

vi. Thermal coal-based power generation revenues: this looks at percentage of revenues derived from power generation coming solely from thermal coal.

vii. Power Generation revenue percentage coming from coal, oil and gas: electricity generation lifecycle assessment shows that GHG emissions coming from coal, oil and natural gas exceed 100 gCO_2e/kWh; similar assessment on renewable energy and nuclear power sources shows that the lifecycle GHG emissions is well below 100 gCO_2e/kWh[73]. For this data point, ISS ESG considers coal, oil and gas-based power generation revenues.

viii. Mitigating Climate change: the ISS ESG SDG Solutions Assessment identifies companies' positive and negative impact towards the UN Sustainable Development Goals (UN SDGs). One of these UN Sustainable Development Goals is SDG 13, Climate Action: Take urgent action to combat climate change and its impacts. ISS ESG covers this under Mitigating Climate change in the SDG Solutions Assessment. STOXX will use this Mitigating climate change data to minimize index exposure to obstructions in climate action, UN SDG 13, by screening out companies identified to have significant obstruction in this area.

ix. Carbon Risk Rating: ISS ESG evaluates companies' capacity to cope with future challenges related to climate change and to seize opportunities arising from a transition to a low-carbon economy. This data will be used to overweigh climate leaders, and climate laggards will be underweighted.

x. Carbon Budget: ISS ESG Carbon Budget data helps assess companies' alignment with different scenarios. STOXX will use this Carbon Budget data in the weighing process of the STOXX Paris-Aligned Benchmark Indices and to ensure the indices are aligned with the IEA 2^0C scenario until 2050.

The ISS ESG scenario analysis combines the IEA scenario with the Sectoral Decarbonization Approach (SDA) by allocating a share of a global carbon budget to every

[71] https://ghgprotocol.org/sites/default/files/standards/Scope%202%20Guidance_Final_Sept26.pdf

[72] http://www.ghgprotocol.org/sites/default/files/ghgp/standards/Scope3_Calculation_Guidance_0.pdf

[73] https://www.ipcc.ch/site/assets/uploads/2018/03/SRREN_Full_Report-1.pdf

company based on its market share and the IEA/SDA emissions scenario associated with its sector.

xi. Percentage of revenues from green sources: revenues coming from renewable energy sources such as: wind, solar, hydro, biomass and geothermal sources. Nuclear Power is also considered as a green revenue source. In addition to these, the definition of green revenues extends to revenues that contribute to UN Sustainable Development Goal (SDG) 13, Climate Action.

xii. Percentage of revenues from brown sources: any revenues from fossil fuels (coal, oil, gas, Arctic drilling, hydraulic fracturing and oil sands) and the provision of supporting products or services is considered as brown revenue. The definition of brown revenues also extends to revenues that are obstructive to UN Sustainable Development Goal (SDG) 13, Climate Action.

Green and brown energy revenue shares will be used in the construction of the indices to ensure the total green share / brown revenue share of the STOXX Paris-Aligned Benchmark Indices is at least four times that of the underlying benchmarks' green to brown revenue shares.

xiii. Science-based Climate Targets: ISS ESG tracks securities that have disclosed science-based targets in line with the level of decarbonization required to keep global temperature increase below 2^0C. STOXX will use this data to identify which of the following three groups companies fall into:
a. companies with concrete targets and emission reduction targets verified by the SBTi
b. companies that have committed with the SBTi but do not yet have approved science-based targets. Committed companies have 24 months to have their targets approved and published by the SBTi
c. companies that have not committed with SBTi

Securities with targets verified by the SBTi will be overweighed in the index. Securities with no commitments or no SBTi approved targets will be subjected to incremental underweighting and will not be eligible for selection starting 2025 and 2030 respectively.

If any of the i to x fields are unavailable for a security, the company will not be eligible for selection. Additionally, if a security does not have green or brown revenue share data, STOXX will assume the revenue share in these areas to be zero. STOXX will assume that a security is not committed if no science-based climate target data is available for it.

The selection list is made of all the remaining stocks that fulfil the conditions below:
- Liquidity requirements: 3-month ADTV equal to or exceeding 3 million EUR
- Activity exclusions: Companies that generate revenues above the specific thresholds with respect to the activities below are not eligible for selection:
    - STOXX will exclude companies that ISS ESG identifies to have 1% or higher revenues from coal exploration, production (excluding power generation), distribution and supporting product and services
    - STOXX will exclude companies that ISS ESG identifies to have 10% or higher revenues from fossil fuel exploration, production (excluding power generation), distribution and supporting products and services
    - STOXX will exclude companies that ISS ESG identifies to have 10% or higher revenues from thermal coal-based power generation
    - STOXX will exclude companies that ISS ESG identifies to have 50% or higher revenues from power generation with carbon intensity of lifecycle GHG emissions higher than 100g CO_2e/kWh

22. STOXX CTB AND STOXX PAB INDICES

- STOXX will exclude companies that ISS ESG assesses to have significant obstruction to the UN Sustainable Development Goal (SDG) 13, Climate Action

Composition list:
The final composition list comprises all the securities that fulfil the requirements listed above. The securities' weights are derived through an optimization process and designed to meet the following requirements:

EU PAB Minimum requirements	STOXX Paris-Aligned Benchmark Indices
Minimum Scope 1+2+3 GHG intensity reduction compared to the corresponding STOXX Benchmark Index The GHG intensity of a security is calculated as: $\frac{Scope\ 1 + Scope\ 2 + Scope\ 3\ GHG\ Emissions}{Enterprise\ Value\ including\ Cash\ (in\ MEUR)}$	At least 60% (includes a 10% buffer)
Year-on-year self-decarbonization per annum relative to the levels at inception in accordance with the global decarbonization trajectory implied by IPCC's 1.5°C scenario with no or limited overshoot	At least 7% on average per annum since index launch, after taking in consideration any inflation in enterprise values
Minimum exposure to sectors highly exposed to climate change issues compared to the underlying STOXX Benchmark Index These sectors are identified as "High Climate Impact" based on NACE section codes[74]	At least equal
Corporate target setting (CTS)	The Corporate target setting score aims to ensure that companies with Science Based Target are overweighed and that: - by 2025, all companies in the index are committed to reducing their GHG emissions, and - by 2030, all companies in the index have SBTi approved science-based targets In more details: 1. Companies that have science-based targets approved and reported through the Science Based Target initiative and have reduced their total GHG emission intensity (Scope 1,2 and 3 emissions) by an average of at least 7% per annum for at least 3 consecutive years will have their weights increased by 1/3 2. Companies that have science-based targets approved and reported through the Science Based Target initiative but have not fulfilled the above carbon reduction criteria will have their weights increased by 1/5 3. Companies that are committed to reducing their GHG emissions but do not yet have science-based targets approved by the

[74] The TEG report identifies stocks in the NACE Section codes: A, B, C, D, E, F, G, H, L as "High Climate Impact" and stocks in the NACE section codes: I, J, K, M, N, O, P, Q, R, S, T, U as "Low Climate Impact". Further information regarding NACE can be found on https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Statistical_classification_of_economic_activities_in_the_European_Community_(NACE)

22. STOXX CTB AND STOXX PAB INDICES

Science Based Target initiative will have their weights reduced by Y/10 where Y is the number of years since 2020

4. Companies that are not committed to reducing their GHG emissions will have their weight reduced by Y/5 where Y is the number of years since 2020

Additional considerations	STOXX Paris-Aligned Benchmark Indices
Alignment with 2°C scenario	The emissions pathway of the indices must be below the carbon budget for the 2°C scenario of the current year and 2050
Carbon Risk Rating tilt	Climate leaders are overweighed, and climate laggards are underweighted
Carbon Budget risk tilt	Companies that are well positioned to meet their carbon budget are overweighed
Minimum green share / brown share ratio compared to the underlying STOXX Benchmark Index	At least 4 times
Diversification	Exposure to a single NACE Section is within 5% of the of the underlying STOXX Benchmark Index exposure If the underlying benchmark's exposure in any of the NACE Sections is greater than 30%, an additional maximum exposure constraint on the NACE Division[75] weights will be imposed for the PAB index. In this case, the STOXX PAB Index exposure to a single NACE Division (within the NACE Section) cannot exceed the underlying STOXX Benchmark Index exposure by higher than 5% Country exposure is within 5% of the country weight in the underlying benchmark
Weight capping	Maximum weight: 4.5% Minimum weight: index dependent

Weighting and capping factors:
The weights are derived though an optimization process with the goal to have a portfolio which is in line or beyond the decarbonization trajectory from the IPCC's 1.5°C scenario and that overweighs companies with a clear and proved evidence-based carbon reduction target as verified by SBTi.

Target weight calculations:
The target weight is defined according to the free-float market capitalization subject to the corporate target setting and carbon risk rating multipliers, as follows:

$$w_i = \frac{ffmcap_i \cdot CTS_i * CR_i}{\sum_j^n ffmcap_j \cdot CTS_j * CR_j}$$

[75] NACE Division is a step lower (more granular) from the NACE Section code

Where:

CTS_i = (1 + 1/3) if a company has verified science-based targets in accordance to the SBTi and has reduced its GHG intensity by an average of at least 7% per annum for at least 3 consecutive years

= (1 + 1/5) if a company has verified science-based targets in accordance to the SBTi but has not fulfilled the above GHG intensity reduction criteria

= (1 – min(1, Y/10)) if a company is committed to reducing its GHG emissions but does not have science-based targets approved by the SBTi

= (1 – min(1, Y/5)) if a company is not committed to reducing its GHG emissions

Y number of years since 2020. Y is 0 for 2020 and earlier years

N number of components in the index

CR_i = $(1 + CR\_z_i)$ if $CR\_z_i > 0$

= $(1 - CR\_z_i)^{-1}$ if $CR\_z_i <= 0$

CR_z_i = CRR_z_i - CBR_z_i

CRR_z_i= zeta score of the company's Carbon Risk Rating, as defined by ISS ESG

CBR_z_i = zeta score of the company's Carbon Budget risk, calculated as

$$CBR_i = \frac{\sum \varphi_j * ln\left(\frac{current\ carbon\ emission_i}{carbon\ budget_{i,j}}\right)}{\sum \varphi_j}$$

Where: $\varphi_j = (1-\lambda) * \lambda^j, \quad j = 0, \dots, 2050 - current\ year$

$\lambda = 0.94$ (standard decay factor[76])

Capped weight calculations:
The capped weights cw_i are derived from target weights via an optimization that minimizes the relative squared difference between the target weights and the capped weights while ensuring that the year-on-year self-decarbonization fulfils the criteria of at least 7% on average starting from 2021 with respect to 2020. The optimization is performed to arrive at the weights subject to constraints to ensure that the composition fulfils the minimum requirements:

$$cw_i = argmin_{cw}\left(\sum_{i=1}^{n}\left(\frac{(cw_i - w_i)^2}{w_i}\right) \cdot \frac{1}{n} + \frac{(Previous\ year's\ GHG\ intensity\ reduction - 0.07)^2}{0.07}\right)$$

The previous year's GHG intensity reduction (starting from 2021 with respect to 2020) is calculated as:

[76] Standard decay factor, suggested and used by Riskmetrics

$$1 - \left(\frac{Index\ GHG\ Intensity_{current} \cdot (Inflation\ Adjustment\ Factor)}{Index\ GHG\ Intensity_{previous\ year-end}} \right)$$

where $Index\ GHG\ Intensity_t = \sum_{i=1}^{n} \left(w_{i,t} \cdot Security\ GHG\ Intensity_{i,t} \right)$ and $w_{i,t}$ is the weight of company i in the index at time t.

In calculating the previous year's GHG intensity reduction, the current GHG intensity is multiplied by the enterprise value inflation adjustment factor[77] in order to reflect the effects of inflation in enterprise values as an increasing average enterprise value of the index constituents could lead to an overall GHG intensity reduction where no actual GHG emissions reductions took place.

The following are the constraints of the optimization:

a) Maximum security weight of 4.5%, and minimum weights set as follows:

Number of constituents in the parent index	Minimum weight constraints
600 or less	0.01%
Between 600 and 1200	0.005%
1200 or more	0.001%

b) The GHG intensity reduction of the index, $\sum_{i=1}^{n} (cw_i \cdot Security\ GHG\ Intensity_i)$ should be at least 60% when compared to the underlying STOXX Benchmark Index GHG Intensity

c) Year-on-year GHG intensity reduction of at least 7% starting from 2021 with respect to 2020. The year-on-year carbon reduction included is calculated as:

$$1 - \left(\frac{Index\ GHG\ Intensity_{current} \cdot Cumulative\ Inflation\ Adjustment\ Factor}{Index\ GHG\ Intensity_{2020\ year-end}} \right)^{1/Y}$$

d) The green revenue share / brown revenue share of the index, $\frac{\sum_{i=1}^{n} (cw_i \cdot Green\ Revenue\ \%_i)}{\sum_{i=1}^{n} (cw_i \cdot Brown\ Revenue\ \%_i)}$, is at least 4 times that of the underlying STOXX Benchmark Index

e) The total exposure of components in the "High Climate Impact" according to NACE classification is at least equal to the corresponding STOXX Benchmark Index

f) The exposure to a single NACE Section code is within 5% of the underlying STOXX Benchmark Index exposure

If the underlying STOXX Benchmark Index exposure in any of the NACE Sections is greater than 30%, an additional maximum exposure constraint on the NACE Division weights will be imposed for the PAB index. In this case, the STOXX PAB Index exposure

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[77] The enterprise value inflation adjustment factor is computed by dividing the average enterprise value of the index constituents at the end of calendar year by the average enterprise value of the index constituents at the end of the previous calendar year and has a minimum value of 1

to a single NACE Division (within the NACE Section) cannot exceed the underlying STOXX Benchmark Index exposure by higher than 5%

g) The exposure to a country is within 5% of the STOXX Benchmark Index

h) The emission pathway of the index must be below its carbon budget for the 2°C scenario of the current year and 2050. This is to ensure that the index is aligned with the 2°C scenario decarbonization trajectory until 2050

Weighting factors are based on the closing prices in EUR (p_i) of the Thursday prior to the second Friday of the review month:

Weighting factor = (1,000,000,000,000 x w_i / p_i), rounded to the nearest integer value.

Review frequency:
The review is conducted on an annual basis in March. On a quarterly basis in June, September and December, the indices are rebalanced to consider changes in free-float or shares in issue. Furthermore, current components are screened for compliance and involvement. The cut-off date for the underlying data is the last calculation day of February, May, August and November respectively.

22.2.3. ONGOING MAINTENANCE

Replacements: Deleted companies are not replaced.

Fast exit: In case a company which is an index constituent increases its ESG Controversy Rating to Category 5 and becomes non-compliant based on the Sustainalytics Global Standards Screening assessment, the respective constituent will be deleted from the index. The deletion will take place two dissemination days after the announcement, i.e. at the open of the 3rd dissemination day. The constituent’s weight will be distributed among the remaining constituents.

Fast entry: Not applicable.

Spin-offs: Spin-offs are not added permanently

Corporate Actions: All components are maintained for corporate actions as outlined in the STOXX calculation guide available on stoxx.com

STOXX reserves the right to amend the methodology without a formal market consultation to meet the final EU PAB requirements once the European Commission outlines the final delegated acts in accordance with the regulations.

22.2.4. SUMMARY

Summary	STOXX Paris-Aligned Benchmark Indices
Universe	A selection of STOXX Benchmark Indices
Screens	
Baseline Exclusions	Global Standards Screening Controversial Weapons Tobacco producers Significant obstruction to the UN Sustainable Development Goal (SDG) 13, Climate Action
Liquidity Requirements	3-month ADTV equal to or exceeding 3 million EUR
Activity Exclusions	Revenues from Coal activities: 1% or higher Revenues from Fossil Fuel activities: 10% or higher Revenues from power generation coming from Coal: 10% or higher Revenues from power generation coming from Coal, Oil & Gas: 50% or higher
Weighing process: weights derived through an optimization process to meet EU PAB requirements	
Minimum Scope 1+2+3 GHG intensity reduction compared to corresponding STOXX Benchmark Index Scope 1, 2 and 3 emissions, are used across all sectors from the first date of index construction	At least 60% (includes a 10% buffer)
Year-on-year self-decarbonization per annum relative to the levels at inception in accordance with the global decarbonization trajectory implied by IPCC's 1.5°C scenario with no or limited overshoot	At least 7% on average per annum since index launch, after taking in consideration any inflation in enterprise values
Minimum green share / brown share ratio compared to the underlying STOXX Benchmark Index	At least 4 times
Minimum exposure of sectors highly exposed to climate change compared to the underlying STOXX Benchmark Index	At least equal
Corporate target setting (CTS)	Securities' free float market cap weights tilted with CTS score to favor securities with science-based targets. CTS scores assigned as follows:

CTS score	2020	2021	…	2025	…	2029	2030 and later
Committed, has SBTi verified targets, and reduces GHG emission (>= 7%/annum for 3 years)	1+1/3 = 4/3						

Committed, has SBTi verified targets, but does not reduce GHG emissions by 7% per annum	1+1/5 = 6/5						
Committed but does not have SBTi approved targets	1	9/10	…	5/10	…	1/10	0
Not committed	1	4/5	..	0			

Additionally, Carbon Budget and Carbon Risk score and will be used to tilt the weights further. Tilt factor obtained as follows:

CR_i = (1 + CR_z_i) if CR_z_i >0

= (1 - CR_z_i)$^{-1}$ if CR_z_i <=0

CR_z_i = CRR_z_i - CBR_z_i

CRR_z_i= zeta score of the company's Carbon Risk Rating, as defined by ISS ESG

CBR_z_i = zeta score of the company's Carbon Budget risk, calculated as

$$CBR_i = \frac{\Sigma\varphi_j * ln\left(\frac{current\ carbon\ emission_i}{carbon\ budget_{i,j}}\right)}{\Sigma\varphi_j}$$

Where: $\varphi_j = (1-\lambda) * \lambda^j, j = 0, \ldots, 2050 - current\ year$

$\lambda = 0.94$ (standard decay factor[78])

$w_i = \frac{ffmcap_i \cdot CTS_i * CR_i}{\sum_j^n ffmcap_j \cdot CTS_j * CR_j}$; where w_i is the weight of security i

Diversification	Exposure to a single NACE Section is within 5% of the of the underlying STOXX Benchmark Index exposure If the underlying benchmark's exposure in any of the NACE Sections is greater than 30%, an additional maximum exposure constraint on the NACE Division[79] weights will be imposed for the PAB index. In this case, the STOXX PAB Index exposure to a single NACE Division (within the NACE Section) cannot exceed the underlying STOXX Benchmark Index exposure by higher than 5% Country exposure is within 5% of the country weight in the underlying benchmark
Weight Capping	Maximum weight: 4.5% Minimum weight: index dependent
Selection and Weighing Frequency	
Review and Rebalancing	Review is conducted on an annual basis in March, and rebalanced quarterly in June, September and December

[78] Standard decay factor, suggested and used by Riskmetrics

[79] NACE Division is a step lower (more granular) from the NACE Section code

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

Each stock in the ICB stock universe is uniquely classified into one of the 114 Subsectors, based on the company's primary revenue source. Consequently, it is automatically and uniquely assigned to one of the 41 Sectors, one of the 19 Supersectors and one of the ten industries. For a detailed overview please refer to http://www.STOXX.com/indices/ICB.html and http://www.ICBenchmark.com/

HIERARCHY

10 Industries	19 Supersectors	41 Sectors	114 Subsectors
Oil & Gas [0001]	Oil & Gas [0500]	Oil & Gas Producers [0530]	Exploration & Production [0533]
			Integrated Oil & Gas [0537]
		Oil Equipment, Services & Distribution [0570]	Oil Equipment & Services [0573]
			Pipelines [0577]
		Alternative Energy [0580]	Renewable Energy Equipment [0583]
			Alternative Fuels [0587]
Basic Materials [1000]	Chemicals [1300]	Chemicals [1350]	Commodity Chemicals [1353]
			Speciality Chemicals [1357]
	Basic Resources [1700]	Forestry Paper [1730]	Forestry [1733]
			Paper [1737]
		Industrial Metals & Mining [1750]	Aluminium [1753]
			Nonferrous Metals [1755]
			Iron & Steel [1757]
		Mining [1770]	Coal [1771]
			Diamonds & Gemstones [1773]
			General Mining [1775]
			Gold Mining [1777]
			Platinum & Precious Metals [1779]
Industrials [2000]	Construction & Materials [2300]	Construction & Materials [2350]	Building Materials & Fixtures [2353]
			Heavy Construction [2357]
	Industrial Goods & Services [2700]	Aerospace & Defense [2710]	Aerospace [2713]
			Defense [2717]
		General Industrials [2720]	Containers & Packaging [2723]
			Diversified Industrials [2727]
		Electronic & Electrical Equipment [2730]	Electrical Components & Equipment [2733]
			Electronic Equipment [2737]
		Industrial Engineering [2750]	Commercial Vehicles & Trucks [2753]
			Industrial Machinery [2757]
		Industrial Transportation [2770]	Delivery Services [2771]
			Marine Transportation [2773]
			Railroads [2775]
			Transportation Services [2777]
			Trucking [2779]
		Support Services [2790]	Business Support Services [2791]
			Business Training & Employment Agencies [2793]
			]
			Financial Administration [2795]
			Industrial Suppliers [2797]
			Waste & Disposal Services [2799]
Consumer Goods [3000]	Automobiles & Parts [3300]	Automobiles & Parts [3350]	Automobiles [3353]
			Auto Parts [3355]
			Tires [3357]
	Food & Beverage [3500]	Beverages [3530]	Brewers [3533]
			Distiller & Vintners [3535]
			Soft Drinks [3537]
		Food Producers [3570]	Farming, Fishing and Plantations [3573]
			Food Products [3577]
	Personal & Household Goods [3700]	Household Goods & Home Construction [3720]	Durable Household Products [3722]
			Nondurable Household Products [3724]
			Furnishings [3726]
			Home Construction [3728]
		Leisure Goods [3740]	Consumer Electronics [3743]
			Recreational Products [3745]
			Toys [3747]
		Personal Goods [3760]	Clothing & Accessories [3763]
			Footwear [3765]

			Personal Products [3767]
		Tobacco [3780]	Tobacco [3785]

10 Industries	19 Supersectors	41 Sectors	114 Subsectors
Health Care [4000]	Health Care [4500]	Health Care Equipment & Services [4530]	Health Care Providers [4533]
			Medical Equipment [4535]
			Medical Supplies [4537]
		Pharmaceuticals & Biotechnology [4570]	Biotechnology [4573]
			Pharmaceuticals [4577]
Consumer Services [5000]	Retail [5300]	Food & Drug Retailers [5330]	Drug Retailers [5333]
			Food Retailers & Wholesalers [5337]
		General Retailers [5370]	Apparel Retailers [5371]
			Broadline Retailers [5373]
			Home Improvement Retailers [5375]
			Specialized Consumer Services [5377]
			Specialty Retailers [5379]
	Media [5500]	Media [5550]	Broadcasting & Entertainment [5553]
			Media Agencies [5555]
			Publishing [5557]
	Travel & Leisure [5700]	Travel & Leisure [5750]	Airlines [5751]
			Gambling [5752]
			Hotels [5753]
			Recreational Services [5755]
			Restaurants & Bars [5757]
			Travel & Tourism [5759]
Telecommunications [6000]	Telecommunications [6500]	Fixed Line Telecommunications [6530]	Fixed Line Telecommunications [6535]
		Mobile Telecommunications [6570]	Mobile Telecommunications [6575]
Utilities [7000]	Utilities [7500]	Electricity [7530]	Conventional Electricity [7535]
			Alternative Electricity [7537]
		Gas, Water & Multi-utilities [7570]	Gas Distribution [7573]
			Multi-utilities [7575]
			Water [7577]
Financials [8000]	Banks [8300]	Banks [8350]	Banks [8355]
	Insurance [8500]	Nonlife Insurance [8530]	Full Line Insurance [8532]
			Insurance Brokers [8534]
			Property & Casualty Insurance [8536]
			Reinsurance [8538]
		Life Insurance [8570]	Life Insurance [8575]
	Real Estate [8600]	Real Estate Investment & Services [8630]	Real Estate Holding & Development [8633]
			Real Estate Services [8637]
		Real Estate Investment Trusts [8670]	Industrial & Office REITs [8671]
			Retail REITs [8672]
			Residential REITs [8673]
			Diversified REITs [8674]
			Specialty REITs [8675]
			Mortgage REITs [8676]
			Hotel & Lodging REITs [8677]
	Financial Services [8700]	Financial Services [8770]	Asset Managers [8771]
			Consumer Finance [8773]
			Specialty Finance [8775]
			Investment Services [8777]
			Mortgage Finance [8779]
		Equity Investment Instruments [8980]	Equity Investment Instruments [8985]
		Nonequity Investment Instruments [8990]	Nonequity Investment Instruments [8995]
Technology [9000]	Technology [9500]	Software & Computer Services [9530]	Computer Services [9533]
			Internet [9535]
			Software [9537]
		Technology Hardware & Equipment [9570]	Computer Hardware [9572]
			Electronic Office Equipment [9574]
			Semiconductors [9576]
			Telecommunications Equipment [9578]

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

Effective with September 2020 review, each stock in the ICB stock universe is uniquely classified into one of the 173 Subsectors, based on the company's primary revenue source. Consequently, it is automatically and uniquely assigned to one of the 45 Sectors, one of the 20 Supersectors and one of the eleven industries. For a detailed overview please refer to http://www.STOXX.com/indices/ICB.html and http://www.ICBenchmark.com/

Industry(11)		Supersector(20)		Sector(45)		Subsector(173)	
10	Technology	1010	Technology	101010	Software and Computer Services	10101010	Computer Services
						10101015	Software
						10101020	Consumer Digital Services
				101020	Technology Hardware and Equipment	10102010	Semiconductors
						10102015	Electronic Components
						10102020	Production Technology Equipment
						10102030	Computer Hardware
						10102035	Electronic Office Equipment
15	Telecommunications	1510	Telecommunications	151010	Telecommunications Equipment	15101010	Telecommunications Equipment
				151020	Telecommunications Service Providers	15102010	Cable Television Services
						15102015	Telecommunications Services
20	Health Care	2010	Health Care	201010	Health Care Providers	20101010	Health Care Facilities
						20101020	Health Care Management Services
						20101025	Health Care Services
						20101030	Health Care: Misc.
				201020	Medical Equipment and Services	20102010	Medical Equipment
						20102015	Medical Supplies
						20102020	Medical Services
				201030	Pharmaceuticals and Biotechnology	20103010	Biotechnology
						20103015	Pharmaceuticals
						20103020	Cannabis Producers
30	Financials	3010	Banks	301010	Banks	30101010	Banks
		3020	Financial Services	302010	Finance and Credit Services	30201020	Consumer Lending
						30201025	Mortgage Finance
						30201030	Financial Data Providers
				302020	Investment Banking and Brokerage Services	30202000	Diversified Financial Services
						30202010	Asset Managers and Custodians
						30202015	Investment Services

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

				302030	Mortgage Real Estate Investment Trusts	30203000	Mortgage REITs: Diversified
						30203010	Mortgage REITs: Commercial
						30203020	Mortgage REITs: Residential
				302040	Closed End Investments	30204000	Closed End Investments
				302050	Open End and Miscellaneous Investment Vehicles	30205000	Open End and Miscellaneous Investment Vehicles
		3030	Insurance	303010	Life Insurance	30301010	Life Insurance
				303020	Non-life Insurance	30302010	Full Line Insurance
						30302015	Insurance Brokers
						30302020	Reinsurance
						30302025	Property and Casualty Insurance
35	Real Estate	3510	Real Estate	351010	Real Estate Investment and Services	35101010	Real Estate Holding and Development
						35101015	Real Estate Services
				351020	Real Estate Investment Trusts	35102000	Diversified REITs
						35102010	Health Care REITs
						35102015	Hotel and Lodging REITs
						35102020	Industrial REITs
						35102025	Infrastructure REITs
						35102030	Office REITs
						35102040	Residential REITs
						35102045	Retail REITs
						35102050	Storage REITs
						35102060	Timber REITs
						35102070	Other Specialty REITs
40	Consumer Discretionary	4010	Automobiles and Parts	401010	Automobiles and Parts	40101010	Auto Services
						40101015	Tires
						40101020	Automobiles
						40101025	Auto Parts
		4020	Consumer Products and Services	402010	Consumer Services	40201010	Education Services
						40201020	Funeral Parlors and Cemetery
						40201030	Printing and Copying Services
						40201040	Rental and Leasing Services: Consumer
						40201050	Storage Facilities
						40201060	Vending and Catering Service
						40201070	Consumer Services: Misc.
				402020	Household Goods and Home Construction	40202010	Home Construction

						40202015	Household Furnishings
						40202020	Household Appliance
						40202025	Household Equipment and Products
				402030	Leisure Goods	40203010	Consumer Electronics
						40203040	Electronic Entertainment
						40203045	Toys
						40203050	Recreational Products
						40203055	Recreational Vehicles and Boats
						40203060	Photography
				402040	Personal Goods	40204020	Clothing and Accessories
						40204025	Footwear
						40204030	Luxury Items
						40204035	Cosmetics
		4030	Media	403010	Media	40301010	Entertainment
						40301020	Media Agencies
						40301030	Publishing
						40301035	Radio and TV Broadcasters
		4040	Retail	404010	Retailers	40401010	Diversified Reatilers
						40401020	Apparel Retailers
						40401025	Home Improvement Retailers
						40401030	Specialty Retailers
		4050	Travel and Leisure	405010	Travel and Leisure	40501010	Airlines
						40501015	Travel and Tourism
						40501020	Casinos and Gambling
						40501025	Hotels and Motels
						40501030	Recreational Services
						40501040	Restaurants and Bars
45	Consumer Staples	4510	Food, Beverage and Tobacco	451010	Beverages	45101010	Brewers
						45101015	Distillers and Vintners
						45101020	Soft Drinks
				451020	Food Producers	45102010	Farming, Fishing, Ranching and Plantations
						45102020	Food Products
						45102030	Fruit and Grain Processing
						45102035	Sugar
				451030	Tobacco	45103010	Tobacco
		4520	Personal Care, Drug and Grocery Stores	452010	Personal Care, Drug and Grocery Stores	45201010	Food Retailers and Wholesalers
						45201015	Drug Retailers
						45201020	Personal Products

						45201030	Nondurable Household Products
						45201040	Miscellaneous Consumer Staple Goods
50	Industrials	5010	Construction and Materials	501010	Construction and Materials	50101010	Construction
						50101015	Engineering and Contracting Services
						50101020	Building, Roofing/Wallboard and Plumbing
						50101025	Building: Climate Control
						50101030	Cement
						50101035	Building Materials: Other
		5020	Industrial Goods and Services	502010	Aerospace and Defense	50201010	Aerospace
						50201020	Defense
				502020	Electronic and Electrical Equipment	50202010	Electrical Components
						50202020	Electronic Equipment: Control and Filter
						50202025	Electronic Equipment: Gauges and Meters
						50202030	Electronic Equipment: Pollution Control
						50202040	Electronic Equipment: Other
				502030	General Industrials	50203000	Diversified Industrials
						50203010	Paints and Coatings
						50203015	Plastics
						50203020	Glass
						50203030	Containers and Packaging
				502040	Industrial Engineering	50204000	Machinery: Industrial
						50204010	Machinery: Agricultural
						50204020	Machinery: Construction and Handling
						50204030	Machinery: Engines
						50204040	Machinery: Tools
						50204050	Machinery: Specialty
				502050	Industrial Support Services	50205010	Industrial Suppliers
						50205015	Transaction Processing Services
						50205020	Professional Business Support Services
						50205025	Business Training and Employment Agencies

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

						50205030	Forms and Bulk Printing Services
						50205040	Security Services
				502060	Industrial Transportation	50206010	Trucking
						50206015	Commercial Vehicles and Parts
						50206020	Railroads
						50206025	Railroad Equipment
						50206030	Marine Transportation
						50206040	Delivery Services
						50206050	Commercial Vehicle-Equipment Leasing
						50206060	Transportation Services
55	Basic Materials	5510	Basic Resources	551010	Industrial Materials	55101000	Diversified Materials
						55101010	Forestry
						55101015	Paper
						55101020	Textile Products
				551020	Industrial Metals and Mining	55102000	General Mining
						55102010	Iron and Steel
						55102015	Metal Fabricating
						55102035	Aluminum
						55102040	Copper
						55102050	Nonferrous Metals
				551030	Precious Metals and Mining	55103020	Diamonds and Gemstones
						55103025	Gold Mining
						55103030	Platinum and Precious Metals
		5520	Chemicals	552010	Chemicals	55201000	Chemicals: Diversified
						55201010	Chemicals and Synthetic Fibers
						55201015	Fertilizers
						55201020	Specialty Chemicals
60	Energy	6010	Energy	601010	Oil, Gas and Coal	60101000	Integrated Oil and Gas
						60101010	Oil: Crude Producers
						60101015	Offshore Drilling and Other Services
						60101020	Oil Refining and Marketing
						60101030	Oil Equipment and Services
						60101035	Pipelines
						60101040	Coal
				601020	Alternative Energy	60102010	Alternative Fuels
						60102020	Renewable Energy Equipment
65	Utilities	6510	Utilities	651010	Electricity	65101010	Alternative Electricity
						65101015	Conventional Electricity

		651020	Gas, Water and Multi-utilities	65102000	Multi-Utilities
				65102020	Gas Distribution
				65102030	Water
		651030	Waste and Disposal Services	65103035	Waste and Disposal Services

SUBSECTOR INDICES

Effective up until September 2020 review, following will be the ICB Subsector along with their Definitions:-

Subsector	Definition
0533 Exploration & Production	Companies engaged in the exploration for and drilling, production, refining and supply of oil and gas products.
0537 Integrated Oil & Gas	Integrated oil and gas companies engaged in the exploration for and drilling, production, refining, distribution and retail sales of oil and gas products.
0573 Oil Equipment & Services	Suppliers of equipment and services to oil fields and offshore platforms, such as drilling, exploration, seismic-information services and platform construction.
0577 Pipelines	Operators of pipelines carrying oil, gas or other forms of fuel. Excludes pipeline operators that derive the majority of their revenues from direct sales to end users, which are classified under Gas Distribution.
0583 Renewable Energy Equipment	Companies that develop or manufacture renewable energy equipment utilizing sources such as solar, wind, tidal, geothermal, hydro and waves.
0587 Alternative Fuels	Companies that produce alternative fuels such as ethanol, methanol, hydrogen and bio-fuels that are mainly used to power vehicles, and companies that are involved in the production of vehicle fuel cells and/or the development of alternative fuelling infrastructure.
1353 Commodity Chemicals	Producers and distributors of simple chemical products that are primarily used to formulate more complex chemicals or products, including plastics and rubber in their raw form, fiberglass and synthetic fibers.
1357 Specialty Chemicals	Producers and distributors of finished chemicals for industries or end users, including dyes, cellular polymers, coatings, special plastics and other chemicals for specialized applications. Includes makers of colorings, flavors and fragrances, fertilizers, pesticides, chemicals used to make drugs, paint in its pigment form and glass in its unfinished form. Excludes producers of paint and glass products used for construction, which are classified under Building Materials & Fixtures.
1733 Forestry	Owners and operators of timber tracts, forest tree nurseries and sawmills. Excludes providers of finished wood products such as wooden beams, which are classified under Building Materials & Fixtures.
1737 Paper	Producers, converters, merchants and distributors of all grades of paper. Excludes makers of printed forms, which are classified under Business Support Services, and manufacturers of paper items such as cups and napkins, which are classified under Nondurable Household Products.
1753 Aluminum	Companies that mine or process bauxite or manufacture and distribute aluminium bars, rods and other products for use by other industries. Excludes manufacturers

	of finished aluminum products, such as siding, which are categorized according to the type of end product.
1755 Nonferrous Metals	Producers and traders of metals and primary metal products other than iron, aluminum and steel. Excludes companies that make finished products, which are categorized according to the type of end product.
1757 Iron & Steel	Manufacturers and stockholders of primary iron and steel products such as pipes, wires, sheets and bars, encompassing all processes from smelting in blast furnaces to rolling mills and foundries. Includes companies that primarily mine iron ores.
1771 Coal	Companies engaged in the exploration for or mining of coal.
1773 Diamonds & Gemstones	Companies engaged in the exploration for and production of diamonds and other gemstones.
1775 General Mining	Companies engaged in the exploration, extraction or refining of minerals not defined elsewhere within the Mining sector.

Subsector	Definition
1777 Gold Mining	Prospectors for and extractors or refiners of gold-bearing ores.
1779 Platinum & Precious Metals	Companies engaged in the exploration for and production of platinum, silver and other precious metals not defined elsewhere.
2353 Building Materials & Fixtures	Producers of materials used in the construction and refurbishment of buildings and structures, including cement and other aggregates, wooden beams and frames, paint, glass, roofing and flooring materials other than carpets. Includes producers of bathroom and kitchen fixtures, plumbing supplies and central air-conditioning and heating equipment. Excludes producers of raw lumber, which are classified under Forestry.
2357 Heavy Construction	Companies engaged in the construction of commercial buildings, infrastructure such as roads and bridges, residential apartment buildings, and providers of services to construction companies, such as architects, masons, plumbers and electrical contractors.
2713 Aerospace	Manufacturers, assemblers and distributors of aircraft and aircraft parts primarily used in commercial or private air transport. Excludes manufacturers of communications satellites, which are classified under Telecommunications Equipment.
2717 Defense	Producers of components and equipment for the defense industry, including military aircraft, radar equipment and weapons.
2723 Containers & Packaging	Makers and distributors of cardboard, bags, boxes, cans, drums, bottles and jars and glass used for packaging.
2727 Diversified Industrials	Industrial companies engaged in three or more classes of business within the Industrial industry that differ substantially from each other.
2733 Electrical Components & Equipment	Makers and distributors of electrical parts for finished products, such as printed circuit boards for radios, televisions and other consumer electronics. Includes makers of cables, wires, ceramics, transistors, electric adapters, fuel cells and security cameras.
2737 Electronic Equipment	Manufacturers and distributors of electronic products used in different industries. Includes makers of lasers, smart cards, bar scanners, fingerprinting equipment and other electronic factory equipment.
2753 Commercial Vehicles & Trucks	Manufacturers and distributors of commercial vehicles and heavy agricultural and construction machinery, including rail cars, tractors, bulldozers, cranes, buses and industrial lawn mowers. Includes non-military shipbuilders, such as builders of cruise ships and ferries.
2757 Industrial Machinery	Designers, manufacturers, distributors and installers of industrial machinery and factory equipment, such as machine tools, lathes, presses and assembly line equipment.

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

Subsector	Definition
	Includes makers of pollution control equipment, castings, pressings, welded shapes, structural steelwork, compressors, pumps, bearings, elevators and escalators.
2771 Delivery Services	Operators of mail and package delivery services for commercial and consumer use. Includes courier and logistic services primarily involving air transportation.
2773 Marine Transportation	Providers of on-water transportation for commercial markets, such as container shipping. Excludes ports, which are classified under Transportation Services, and shipbuilders, which are classified under Commercial Vehicles & Trucks.
2775 Railroads	Providers of industrial railway transportation and railway lines. Excludes passenger railway companies, which are classified under Travel & Tourism, and manufacturers of rail cars, which are classified under Commercial Vehicles & Trucks.
2777 Transportation Services	Companies providing services to the Industrial Transportation sector, including companies that manage airports, train depots, roads, bridges, tunnels, ports, and providers of logistic services to shippers of goods. Includes companies that provide aircraft and vehicle maintenance services.
2779 Trucking	Companies that provide commercial trucking services. Excludes road and tunnel operators, which are classified under Transportation Services, and vehicle rental and taxi companies, which are classified under Travel & Tourism.
2791 Business Support Services	Providers of nonfinancial services to a wide range of industrial enterprises and governments. Includes providers of printing services, management consultants, office cleaning services, and companies that install, service and monitor alarm and security systems.
2793 Business Training & Employment Agencies	Providers of business or management training courses and employment services.
2795 Financial Administration	Providers of computerized transaction processing, data communication and information services, including payroll, bill payment and employee benefit services.
2797 Industrial Suppliers	Distributors and wholesalers of diversified products and equipment primarily used in the commercial and industrial sectors. Includes builders merchants.
2799 Waste & Disposal Services	Providers of pollution control and environmental services for the management, recovery and disposal of solid and hazardous waste materials, such as landfills and recycling centers. Excludes manufacturers of industrial air and water filtration equipment, which are classified under Industrial Machinery.
3353 Automobiles	Makers of motorcycles and passenger vehicles, including cars, sport utility vehicles (SUVs) and light trucks. Excludes makers of heavy trucks, which are classified under Commercial Vehicles & Trucks, and makers of recreational vehicles (RVs and ATVs), which are classified under Recreational Products.
3355 Auto Parts	Manufacturers and distributors of new and replacement parts for motorcycles and automobiles, such as engines, carburettors and batteries. Excludes producers of tires, which are classified under Tires.
3357 Tires	Manufacturers, distributors and retreaders of automobile, truck and motorcycle tires.
3533 Brewers	Manufacturers and shippers of cider or malt products such as beer, ale and stout.
3535 Distillers & Vintners	Producers, distillers, vintners, blenders and shippers of wine and spirits such as whisky, brandy, rum, gin or liqueurs.
3537 Soft Drinks	Manufacturers, bottlers and distributors of nonalcoholic beverages, such as soda, fruit juices, tea, coffee and bottled water.
3573 Farming, Fishing and Plantations	Companies that grow crops or raise livestock, operate fisheries or own nontobacco plantations. Includes manufacturers of livestock feeds and seeds and other agricultural products but excludes manufacturers of fertilizers or pesticides, which are classified under Specialty Chemicals.

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

3577 Food Products	Food producers, including meatpacking, snacks, fruits, vegetables, dairy products and frozen seafood. Includes producers of pet food and manufacturers of dietary supplements, vitamins and related items. Excludes producers of fruit juices, tea, coffee, bottled water and other nonalcoholic beverages, which are classified under Soft Drinks.
3722 Durable Household Products	Manufacturers and distributors of domestic appliances, lighting, hand tools and power tools, hardware, cutlery, tableware, garden equipment, luggage, towels and linens.
3724 Nondurable Household Products	Producers and distributors of pens, paper goods, batteries, light bulbs, tissues, toilet paper and cleaning products such as soaps and polishes.
3726 Furnishings	Manufacturers and distributors of furniture, including chairs, tables, desks, carpeting, wallpaper and office furniture.
3728 Home Construction	Constructors of residential homes, including manufacturers of mobile and prefabricated homes intended for use in one place.
3743 Consumer Electronics	Manufacturers and distributors of consumer electronics, such as TVs, VCRs, DVD players, audio equipment, cable boxes, calculators and camcorders.
3745 Recreational Products	Manufacturers and distributors of recreational equipment. Includes musical instruments, photographic equipment and supplies, RVs, ATVs and marine recreational vehicles such as yachts, dinghies and speedboats.
3747 Toys	Manufacturers and distributors of toys and video/computer games, including such toys and games as playing cards, board games, stuffed animals and dolls.
3763 Clothing & Accessories	Manufacturers and distributors of all types of clothing, jewelry, watches or textiles. Includes sportswear, sunglasses, eyeglass frames, leather clothing and goods, and processors of hides and skins.
3765 Footwear	Manufacturers and distributors of shoes, boots, sandals, sneakers and other types of footwear.
3767 Personal Products	Makers and distributors of cosmetics, toiletries and personal-care and hygiene products, including deodorants, soaps, toothpaste, perfumes, diapers, shampoos, razors and feminine-hygiene products. Includes makers of contraceptives other than oral contraceptives, which are classified under Pharmaceuticals.
3785 Tobacco	Manufacturers and distributors of cigarettes, cigars and other tobacco products. Includes tobacco plantations.
4533 Health Care Providers	Owners and operators of health maintenance organizations, hospitals, clinics, dentists, opticians, nursing homes, rehabilitation and retirement centers. Excludes veterinary services, which are classified under Specialized Consumer Services.
4535 Medical Equipment	Manufacturers and distributors of medical devices such as MRI scanners, prosthetics, pacemakers, X-ray machines and other nondisposable medical devices.
4573 Biotechnology	Companies engaged in research into and development of biological substances for the purposes of drug discovery and diagnostic development, and which derive the majority of their revenue from either the sale or licensing of these drugs and diagnostic tools.
4577 Pharmaceuticals	Manufacturers of prescription or over-the-counter drugs, such as aspirin, cold remedies and birth control pills. Includes vaccine producers but excludes vitamin producers, which are classified under Food Products.
5333 Drug Retailers	Operators of pharmacies, including wholesalers and distributors catering to these businesses.
5337 Food Retailers & Wholesalers	Supermarkets, food-oriented convenience stores and other food retailers and distributors. Includes retailers of dietary supplements and vitamins.
5371 Apparel Retailers	Retailers and wholesalers specializing mainly in clothing, shoes, jewelry, sunglasses and other accessories.

5373 Broadline Retailers	Retail outlets and wholesalers offering a wide variety of products including both hard goods and soft goods.
5375 Home Improvement Retailers	Retailers and wholesalers concentrating on the sale of home improvement products, including garden equipment, carpets, wallpaper, paint, home furniture, blinds and curtains, and building materials.
5377 Specialized Consumer Services	Providers of consumer services such as auction houses, day-care centers, dry cleaners, schools, consumer rental companies, veterinary clinics, hair salons and providers of funeral, lawn-maintenance, consumer-storage, heating and cooling installation and plumbing services.
5379 Specialty Retailers	Retailers and wholesalers concentrating on a single class of goods, such as electronics, books, automotive parts or closeouts. Includes automobile dealerships, video rental stores, dollar stores, duty-free shops and automotive fuel stations not owned by oil companies.
5553 Broadcasting & Entertainment	Producers, operators and broadcasters of radio, television, music and filmed entertainment. Excludes movie theaters, which are classified under Recreational Services.
5555 Media Agencies	Companies providing advertising, public relations and marketing services. Includes billboard providers and telemarketers.
5557 Publishing	Publishers of information via printed or electronic media.
5751 Airlines	Companies providing primarily passenger air transport. Excludes airports, which are classified under Transportation Services.
5752 Gambling	Providers of gambling and casino facilities. Includes online casinos, racetracks and the manufacturers of pachinko machines and casino and lottery equipment.
5753 Hotels	Operators and managers of hotels, motels, lodges, resorts, spas and campgrounds.
5755 Recreational Services	Providers of leisure facilities and services, including fitness centers, cruise lines, movie theaters and sports teams.
5757 Restaurants & Bars	Operators of restaurants, fast-food facilities, coffee shops and bars. Includes integrated brewery companies and catering companies.
5759 Travel & Tourism	Companies providing travel and tourism related services, including travel agents, online travel reservation services, automobile rental firms and companies that primarily provide passenger transportation, such as buses, taxis, passenger rail and ferry companies.
6535 Fixed Line Telecommunications	Providers of fixed-line telephone services, including regional and long-distance. Includes companies that primarily provides telephone services through the internet. Excludes companies whose primary business is Internet access, which are classified under Internet.
6575 Mobile Telecommunications	Providers of mobile telephone services, including cellular, satellite and paging services. Includes wireless tower companies that own, operate and lease mobile site towers to multiple wireless service providers.
7535 Conventional Electricity	Companies generating and distributing electricity through the burning of fossil fuels such as coal, petroleum and natural gas, and through nuclear energy.
7537 Alternative Electricity	Companies generating and distributing electricity from a renewable source. Includes companies that produce solar, water, wind and geothermal electricity.
7573 Gas Distribution	Distributors of gas to end users. Excludes providers of natural gas as a commodity, which are classified under the Oil & Gas industry.
7575 Multiutilities	Utility companies with significant presence in more than one utility.
7577 Water	Companies providing water to end users, including water treatment plants.
8355 Banks	Banks providing a broad range of financial services, including retail banking, loans and money transmissions.

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

8532 Full Line Insurance	Insurance companies with life, health, property & casualty and reinsurance interests, no one of which predominates.
8534 Insurance Brokers	Insurance brokers and agencies.
8536 Property & Casualty Insurance	Companies engaged principally in accident, fire, automotive, marine, malpractice and other classes of nonlife insurance.
8538 Reinsurance	Companies engaged principally in reinsurance.
8575 Life Insurance	Companies engaged principally in life and health insurance.
8633 Real Estate Holding & Development	Companies that invest directly or indirectly in real estate through development, investment or ownership. Excludes real estate investment trusts and similar entities, which are classified as Real Estate Investment Trusts.
8637 Real Estate Services	Companies that provide services to real estate companies but do not own the properties themselves. Includes agencies, brokers, leasing companies, management companies and advisory services. Excludes real estate investment trusts and similar entities, which are classified as Real Estate Investment Trusts.
8671 Industrial & Office REITs	Real estate investment trusts or corporations (REITs) or listed property trusts (LPTs) that primarily invest in office, industrial and flex properties.

Subsector	Definition
8672 Retail REITs	Real estate investment trusts or corporations (REITs) or listed property trusts (LPTs) that primarily invest in retail properties. Includes malls, shopping centers, strip centers and factory outlets.
8673 Residential REITs	Real estate investment trusts or corporations (REITs) or listed property trusts (LPTs) that primarily invest in residential home properties. Includes apartment buildings and residential communities.
8674 Diversified REITs	Real estate investment trusts or corporations (REITs) or listed property trusts (LPTs) that invest in a variety of property types without a concentration on any single type.
8675 Specialty REITs	Real estate investment trusts or corporations (REITs) or listed property trusts (LPTs) that invest in self storage properties, properties in the health care industry such as hospitals, assisted living facilities and health care laboratories, and other specialized properties such as auto dealership facilities, timber properties and net lease properties.
8676 Mortgage REITs	Real estate investment trusts or corporations (REITs) or listed property trusts (LPTs) that are directly involved in lending money to real estate owners and operators or indirectly through the purchase of mortgages ormortgage backed securities.
8677 Hotel & Lodging REITs	Real estate investment trusts or corporations (REITs) or listed property trusts (LPTs) that primarily invest in hotels or lodging properties.
8771 Asset Managers	Companies that provide custodial, trustee and other related fiduciary services. Includes mutual fund management companies.
8773 Consumer Finance	Credit card companies and providers of personal finance services such as personal loans and check cashing companies.
8775 Specialty Finance	Companies engaged in financial activities not specified elsewhere. Includes companies not classified under Equity Investment Instruments or Nonequity Investment Instruments engaged primarily in owning stakes in a diversified range of companies.
8777 Investment Services	Companies providing a range of specialized financial services, including securities brokers and dealers, online brokers and security or commodity exchanges.
8779 Mortgage Finance	Companies that provide mortgages, mortgage insurance and other related services.
8985 Equity Investment Instruments	Corporate closed-ended investment entities identified under distinguishing egislation, such as investment trusts and venture capital trusts.
8995 Non-equity Investment Instruments	Non-corporate, open-ended investment instruments such as open-ended investment companies and funds, unit trusts, ETFs, currency funds and split capital trusts.

9533 Computer Services	Companies that provide consulting services to other businesses relating to information technology. Includes providers of computer-system design, systems integration, network and systems operations, data management and storage, repair services and technical support.
9535 Internet	Companies providing Internet-related services, such as Internet access providers and search engines and providers of Web site design, Web hosting, domain-name registration and e-mail services.
9537 Software	Publishers and distributors of computer software for home or corporate use. Excludes computer game producers, which are classified under Toys.
9572 Computer Hardware	Manufacturers and distributors of computers, servers, mainframes, workstations and other computer hardware and subsystems, such as mass-storage drives, mice, keyboards and printers.
9574 Electronic Office Equipment	Manufacturers and distributors of electronic office equipment, including photocopiers and fax machines.
9576 Semiconductors	Producers and distributors of semiconductors and other integrated chips, including other products related to the semiconductor industry, such as semiconductor capital equipment and motherboards. Excludes makers of printed circuit boards, which are classified under Electrical Components & Equipment.
9578 Telecommunications Equipment	Makers and distributors of high-technology communication products, including satellites, mobile telephones, fiber optics, switching devices, local and wide-area networks, teleconferencing equipment and connectivity devices for computers, including hubs and routers.

SUBSECTOR INDICES

Effective with September 2020 review, following will be the ICB Subsector along with their Definitions:-

Subsector	**Definition**
10101010 Computer Services	Companies that provide consulting or integration services to other businesses relating to information technology. Includes providers of computer-system design, systems integration, network and systems operations, cloud computing, distributed ledger technology (DLT) consulting and integration, data management and storage, repair services and technical support.
10101015 Software	Publishers and distributors of computer software for home or corporate use. Excludes computer game producers, which are classified under Electronic Entertainment.
10101020 Consumer Digital Services	Companies involved in digital platforms that primarily generate revenue from advertising, content delivery and other virtual products for consumers. To a lesser extent they generate subscription fee revenue through related services offered by the platform and/or by the advertisers to utilize data content and customer insight.
10102010 Semiconductors	Producers and distributors of semiconductors and other integrated chips, including other products related to the semiconductor industry, such as semiconductor capital equipment and motherboards. Excludes makers of printed circuit boards, which are classified under Electronic Components
10102015 Electronic Components	Companies involved in the application of high-technology parts to finished products, including printed circuit boards. Excludes communications-related equipment, which are classified under Telecommunications Equipment Subsector and technology parts for consumer electronics, which are classified under Electrical Components.

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

10102020 Production Technology Equipment	Manufactures of high-technology tools and/or equipments that are used in the creation of semiconductors, photonics, wafers, and other high-technology components.
10102030 Computer Hardware	Manufacturers and distributors of computers, servers, mainframes, workstations and other computer hardware and subsystems, such as mass-storage drives, mice, keyboards and printers. Companies in this group can provide diverse applications for consumer and commercial use. Including companies providing computing hardware for cryptocurrency mining.
10102035 Electronic Office Equipment	Manufacturers and distributors of electronic office equipment, including photocopiers and fax machines.
15101010 Telecommunications Equipment	Makers and distributors of high-technology communication products, including mobile telephones, fibers optics, switching devices, local and wide-area networks, teleconferencing equipment and connectivity devices for computers, including hubs and routers.
15102010 Cable Television Services	Companies that primarily distribute media content through their own cable and wireless network infrastructure, such as wired cable, fiber-optic, and satellite networks.
15102015 Telecommunications Services	Providers of mobile and fixed-line telephone services, paging services, and VOIP providers. Including companies that own and operate telecommunication assets. Telecommunication Services companies can also provide supplemental services such as direct internet access, VPN services, colocation services and transit services.
20101010 Health Care Facilities	Owners and operators of primary healthcare property, community hospitals, retirement homes, nursing homes, and related medical businesses.
20101020 Health Care Management Services	Companies that offers managed health care benefits and services (e.g., Health Management Organizations (HMO) including state sponsored programs
20101025 Health Care Services	Companies that provide various specialized disease management services to physicians, health plans, and hospitals. Primary business lines in this category can also include general consultation services, paramedical services, operation of health portals and distribution of health food products.
20101030 Health Care: Misc.	Includes Healthcare companies that are not classified in the Healthcare Facilities, Healthcare Management Services or Healthcare Services
20102010 Medical Equipment	Manufacturers and distributors of medical devices such as MRI scanners, prosthetics, pacemakers, X-ray machines and other non-disposable medical devices.
20102015 Medical Supplies	Manufacturers and distributors of medical supplies used by health care providers and the general public. Includes makers of contact lenses, eyeglass lenses, bandages and other disposable medical supplies.
20102020 Medical Services	Companies that operate and manage medical labs and testing services.
20103010 Biotechnology	Companies engaged in research into and development of biological substances for the purposes of drug discovery and diagnostic development, and which derive the majority of their revenue from either the sale or licensing of these drugs and diagnostic tools.
20103015 Pharmaceuticals	Manufacturers of prescription or over-the-counter drugs, such as aspirin, cold remedies and birth control pills. Includes vaccine producers but excludes vitamin producers, which are classified under Food Products.
20103020 Cannabis Producers	Companies that engage in cannabis cultivation, cannabis distribution including dispensaries, the processing and distribution of cannabis plants, and the creation of cannabis derivative products. Companies that primarily engage in the research, development and manufacturing of cannabis (THC/CBD) based drugs are classified in the Biotechnology or the Pharmaceuticals Subsector.
30101010 Banks	Primary activities involve retail banking and/or commercial banking. Attracts deposits from the general public and provide various financial services.
30201020 Consumer Lending	Companies that provide financial services to consumers including payday loans, student loans, automobile loans, etc.
30201025 Mortgage Finance	Companies that provide mortgages, mortgage insurance and other related services

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

30201030 Financial Data Providers	Companies provide financial decision support tools for investment institutions. Including financial database operators and index data providers.
30202000 Diversified Financial Services	Companies providing a diversified range of services such as investment banking, trading, and asset management. Diversified Investment Holding companies engaged in acquiring equity stake of listed securities are also classified in this group.
30202010 Asset Managers and Custodians	Companies that provide custodial, trustee and other related fiduciary services. i.e. mutual fund and private investment management. Also includes companies engaged in private equity and venture capital.
30202015 Investment Services	Companies that provide trading and brokerage services for financial assets such as equities, commodities, debts, currency, cryptocurrency. Also includes the operators of stock, currency, and other financial market exchanges.
30203000 Mortgage REITs: Diversified	Mortgage REITs that invest in a combination of segments with no specific dominance over one or the other
30203010 Mortgage REITs: Commercial	REITs primarily involved in lending money to commercial real estate owners and operators directly or indirectly through the purchase of mortgages, mortgage backed securities and other mortgage related assets
30203020 Mortgage REITs: Residential	REITs primarily involved in lending money to residential real estate owners and operators directly or indirectly through the purchase of mortgages, mortgage backed securities and other mortgage related assets
30204000 Closed End Investments	Corporate closed-ended investment entities identified under distinguishing legislation, such as investment trusts and venture capital trusts.
30205000 Open End and Miscellaneous Investment Vehicles	Cash shells, Special Purpose Acquisition Company (SPACs), Non corporate investment entities such as open-ended funds, unit trusts and ETFs and currency funds and split capital trusts.
30301010 Life Insurance	Companies engaged principally in life and health insurance.
30302010 Full Line Insurance	Companies that provide a wide range of insurance products such as a combination of life, property/casualty, and specialty insurance
30302015 Insurance Brokers	Insurance brokers and agents
30302020 Reinsurance	Companies engaged principally in reinsurance.
30302025 Property and Casualty Insurance	Companies engaged principally in accident, fire, automotive, marine, malpractice and other classes of nonlife insurance.
35101010 Real Estate Holding and Development	Companies that invest directly or indirectly in a variety of types of properties without a concentration on any single type
35101015 Real Estate Services	Companies that provide services to real estate companies but do not own the properties themselves. Includes agencies, brokers, leasing companies, management companies and advisory services.
35102000 Diversified REITs	REITS that invest in a combination of other defined REIT categories
35102010 Health Care REITs	REITs that primarily invest in health care facilities including hospitals, nursing homes and assisted living properties
35102015 Hotel and Lodging REITs	REITS that primarily invest in hotels, motels, resorts or other lodging properties
35102020 Industrial REITs	REITs that primarily invest in industrial properties including industrial warehouses and distribution properties
35102025 Infrastructure REITs	REITS that primarily invest in infrastructure assets including roads, bridges, tunnels, airports, power generation, fuels, pipelines, water and waste management, and communication assets
35102030 Office REITs	REITs that primarily invest in office properties
35102040 Residential REITs	REITs that primarily invest in residential properties including manufactured homes, multifamily homes, apartments, and student housing properties
35102045 Retail REITs	REITs that primarily invest in retail properties including malls, shopping centers, neighborhood and community shopping centers, strip malls, free standing stores, and factory outlets

35102050 Storage REITs	REITs that primarily invest in public self-storage properties
35102060 Timber REITs	REITS that primarily invest in timberland and timber-related products and activities
35102070 Other Specialty REITs	REITs that primarily invest in any single type of facility or property not specifically defined within another REITs industry
40101010 Auto Services	Companies that provide assistance to individual vehicle owners
40101015 Tires	Manufacturers, distributors and re-treaders of automobile, truck and motorcycle tires.
40101020 Automobiles	Makers of passenger vehicles, including cars, sport utility vehicles (SUVs) and light trucks. Excludes makers of heavy trucks and makers of recreational vehicles (RVs and ATVs).
40101025 Auto Parts	Manufacturers and distributors of new and replacement parts for motorcycles and automobiles, such as engines, carburetors and batteries. Excludes producers of tires, which are classified under Tires.
40201010 Education Services	Companies that own and manage higher education systems, post-secondary degree programs or other educational services
40201020 Funeral Parlors and Cemetery	Companies that own and operate funeral homes, cemeteries, crematoriums and/or provide other funeral services.
40201030 Printing and Copying Services	Companies specializing in printing, copying and/or similar solutions for individuals and small businesses
40201040 Rental and Leasing Services: Consumer	Companies that lease automobiles, appliances, electronics or furniture to consumers
40201050 Storage Facilities	Companies that own and operate storage facilities (does not include companies structured as REITs
40201060 Vending and Catering Service	Companies that provide catering and food service and/or food ingredients to individuals or institutions
40201070 Consumer Services: Misc.	Consumer Services companies that are not categorized in the Education Services, Funeral Parlors and Cemeteries, Printing and Copying Services, Rental and Leasing Services, Storage Facilities or Vending and Catering Services categories
40202010 Home Construction	Constructors of residential homes, including manufacturers of mobile and prefabricated homes intended for use in one place.
40202015 Household Furnishings	Manufacturers and distributors of furniture, including chairs, tables, desks, and office furniture.
40202020 Household Appliance	Companies that manufacture and market household electrical appliances.
40202025 Household Equipment and Products	Companies that manufacture and supply various household products. Includes manufacturers of gardening tools, kitchen utensils, dishes and other home related products
40203010 Consumer Electronics	Companies primarily involved in the application of technology and electronics to the consumer discretionary sector.
40203040 Electronic Entertainment	Companies that design, manufacture and market video game software and related elements. Also includes consumer entertainment technology, e.g. Dolby
40203045 Toys	Manufacturers and distributors of toys and games as playing cards, board games, stuffed animals and dolls.
40203050 Recreational Products	Manufacturers and distributors of recreational equipment not classified in other "Leisure Goods" categories, including Musical Instruments
40203055 Recreational Vehicles and Boats	Companies that design, manufacture and market recreation vehicles (RVs), motorcycles or passenger boats
40203060 Photography	Companies that produce and/or market professional and/or personal imaging products including digital cameras and film cameras
40204020 Clothing and Accessories	Manufacturers and distributors of all types of clothing and accessories. Includes sportswear, sunglasses, eyeglass frames, leather clothing and goods, and processors of hides and skins. Excludes jewelry, which is categorized under Luxury Items

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

40204025 Footwear	Manufacturers and distributors of shoes, boots, sandals, sneakers and other types of footwear.
40204030 Luxury Items	Companies that manufacture and market jewelry, watches and gemstones.
40204035 Cosmetics	Companies that produce and market make-up and fragrance products (perfume). Excludes personal care products, which are classified under Consumer Staples
40301010 Entertainment	Companies that provide various media services including feature films, music and television shows and stations
40301020 Media Agencies	Companies that provide a wide range of marketing and public relations services such as promoting advertising space in telephone and professional directories, analyzing market research and other various marketing activities. Excluding website design/publishing, which are classified under the Consumer Digital Services Subsector.
40301030 Publishing	Companies that provide advertising and publishing services to customers in industrial, commercial, and design markets. This includes companies that publish books, magazines, comics, encyclopedias, financial reports, journals and/or newspapers
40301035 Radio and TV Broadcasters	Companies with principal activities that include operating commercial TV stations and/or radio broadcasting
40401010 Diversified Retailers	Retail outlets and wholesalers offering a wide variety of products including both hard goods and soft goods.
40401020 Apparel Retailers	Retailers and wholesalers specializing mainly in clothing, shoes, jewelry, sunglasses and other accessories.
40401025 Home Improvement Retailers	Retailers and wholesalers concentrating on the sale of home improvement products, including garden equipment, carpets, wallpaper, paint, home furniture, blinds and curtains, and building materials.
40401030 Specialty Retailers	Retailers and wholesalers concentrating on a single class of goods, such as electronics, books, automotive parts or closeouts. Includes automobile dealerships, duty-free shops and automotive fuel stations not owned by oil companies. Excludes Apparel and Home Improvement Retailers
40501010 Airlines	Companies providing primarily passenger air transport. Excludes airport operators and air freight transport, which are classified under 50206040 - Delivery Services.
40501015 Travel and Tourism	Companies providing travel and tourism related services, including travel agents, online travel reservation services, and companies that provide passenger transportation for leisure are included, such as tour buses, leisure cruisers and railways, and taxis. Excludes mass public transportation services which are classified under Industrial Transportation Sector.
40501020 Casinos and Gambling	Providers of gambling and casino facilities. Includes online casinos, racetracks and the manufacturers of pachinko machines and casino and lottery equipment.
40501025 Hotels and Motels	Operators and managers of hotels, motels, lodges, resorts, spas and campgrounds.
40501030 Recreational Services	Providers of leisure facilities and services, including fitness centers, amusement parks, concerts and sports/e-sports event promotion. Also includes companies that own and manage professional sports teams.
40501040 Restaurants and Bars	Operators of restaurants, fast-food facilities, coffee shops and bars. Includes integrated brewery companies. Excludes catering companies, which are classified as Vending and Catering Service.
45101010 Brewers	Manufacturers and shippers of cider or malt products such as beer, ale and stout.
45101015 Distillers and Vintners	Producers, distillers, vintners, blenders and shippers of wine and spirits such as whisky, brandy, rum, gin or liqueurs.
45101020 Soft Drinks	Manufacturers, bottlers and distributors of non-alcoholic beverages, such as soda, fruit juices, tea, coffee and bottled water.
45102010 Farming, Fishing, Ranching and Plantations	Companies that grow crops or raise livestock, operate fisheries or own nontobacco plantations. Includes manufacturers of livestock feeds and seeds and other agricultural products

45102020 Food Products	Food producers, including meatpacking, snacks, fruits, vegetables, dairy products and frozen seafood. Includes producers of pet food and manufacturers of dietary supplements, vitamins and related items. Excludes producers of fruit juices, tea, coffee, bottled water and other non-alcoholic beverages, which are classified under Soft Drinks.
45102030 Fruit and Grain Processing	Companies involved in the value-adding process of various "raw" or "unprocessed" agricultural products. May also produce and market such products.
45102035 Sugar	Companies that grow, refine, process and distribute sugar
45103010 Tobacco	Manufacturers and distributors of cigarettes, cigars and other tobacco products. Includes tobacco plantations.
45201010 Food Retailers and Wholesalers	Supermarkets, food-oriented convenience stores and other food retailers and distributors. Includes retailers of dietary supplements and vitamins.
45201015 Drug Retailers	Operators of pharmacies, including wholesalers and distributors catering to these businesses.
45201020 Personal Products	Makers and distributors of toiletries and personal-care and hygiene products, including deodorants, soaps, toothpaste, perfumes, diapers, shampoos, razors, condoms and feminine-hygiene products. Excludes makers of hormonal (oral or injection) and implants (intrauterine devices) and contraceptives, which are classified under the Pharmaceuticals Subsector.
45201030 Nondurable Household Products	Producers and distributors of pens, paper goods, batteries, light bulbs, tissues, toilet paper and cleaning products such as soaps and polishes.
45201040 Miscellaneous Consumer Staple Goods	Includes Consumer Staples companies that are not classified in any other Consumer Staples industry
50101010 Construction	Companies that provide construction and infrastructure development services to private and/or public sector clients.
50101015 Engineering and Contracting Services	Companies that provide capital project planning and solutions. Includes engineering contracts, infrastructure development, bid preparation, interior enhancement designs and architects.
50101020 Building, Roofing/Wallboard and Plumbing	Companies that design, manufacture, market and/or install non-climate control systems and related products such as siding, windows and water pipes.
50101025 Building: Climate Control	Companies that design, manufacture, market and/or install air conditioning, heating and/or refrigeration systems
50101030 Cement	Companies primarily engaged in manufacturing and distributing cement and cement-derived products
50101035 Building Materials: Other	Companies that provide materials to the building and construction industry, excluding air-conditioning, cement, heating, plumbing, roofing, and wall boards
50201010 Aerospace	Manufacturers, assemblers and distributors of aircraft and aircraft parts, including communication satellite, used in commercial or private air and/or space transport.
50201020 Defense	Producers of components and equipment for the defense industry, including military aircraft, radar equipment and weapons. Also included are companies that primarily provide services to the defense industry.
50202010 Electrical Components	Makers and distributors of basic electrical parts for finished products such as radios, televisions and other consumer electronics. Includes makers of cables, wires, ceramics, transistors, and electric adapters. Excludes communications-related equipment, which are classified under Telecommunications Equipment and makers of high-technology parts, which are classified under Electronic Components Subsector.
50202020 Electronic Equipment: Control and Filter	Companies primarily involved in providing mechanical and electronic security and/or filtration systems
50202025 Electronic Equipment: Gauges and Meters	Companies that design, manufacture and market products used to measure electric, gas, water, imaging, and other data for use in a variety of industries.
50202030 Electronic Equipment: Pollution Control	Companies primarily engaged in the production of pollution control equipment for purification of air and liquids.

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

50202040 Electronic Equipment: Other	Companies that specialize in the development and production of electrical devices/components marketed to business clients.
50203000 Diversified Industrials	Companies engaged in three or more industrial business activities, none of which is the dominant business line
50203010 Paints and Coatings	Companies that manufacture and distribute paint, material coatings, and resins
50203015 Plastics	Companies that manufacture and market plastic products or chemicals used to make plastic
50203020 Glass	Companies that manufacture various structural glasses such as float glass, architectural glass, delicacy glass, automotive glass, and other glass products. Glass containers/bottles prepared for other markets are classified in 50203030 - Containers and Packaging. Specialized glass for application in electronics are classified in 10102015 - Electronic Components.
50203030 Containers and Packaging	Companies that may produces a wide range of packaging products and packaging related materials, including cartons, plastic bottles, jars, glass bottles, aluminum cans, dispensing pumps, aerosol valves, etc.
50204000 Machinery: Industrial	Companies that design, develop, manufacture, sell, and support general industrial machines and parts. This excludes all the other machinery subsectors specified
50204010 Machinery: Agricultural	Manufacturers and distributers of a range of farming equipment for irrigation, harvesting, plowing and other processes
50204020 Machinery: Construction and Handling	Companies that design, manufacture and market large-size industrial equipment for construction and ports.
50204030 Machinery: Engines	Companies that manufacture and distribute energy output devices and component parts, including diesel engines and gas engines
50204040 Machinery: Tools	Companies that manufactures and market value-adding equipment for various heavy industries
50204050 Machinery: Specialty	Companies that design, manufacture and market a specific type or group of industrial machines and parts. This excludes all the other Machinery industries categorized in the Machinery subsector.
50205010 Industrial Suppliers	Distributors and wholesalers of diversified products and equipment primarily used in the commercial and industrial sectors. Includes builder's merchants and companies providing Maintenance/Repair services.
50205015 Transaction Processing Services	Providers of computerized transaction processing services. Includes companies that engages in any aspects of global payment services such as routing of payment information and related data services that facilitate the authorization, clearing, and settlement of transactions. Includes card network operators, issuer and acquirer processors.
50205020 Professional Business Support Services	Companies that provide outsourced business operation services. This includes consulting services, corporate taxes, and business decision tools such as credit monitoring and KYC database service. Credit Agencies and Rating firms are classified under the Financial Data Providers Subsector.
50205025 Business Training and Employment Agencies	Providers of business or management training courses and employment services. Includes online job search companies.
50205030 Forms and Bulk Printing Services	Companies that provide printed business products including forms, checks, labels and IDs
50205040 Security Services	Companies that provide security services, install, service and monitor alarm and security systems.
50206010 Trucking	Companies that provide commercial trucking or mass public bus services. Excludes road and tunnel operators, which are classified under Transportation Services Subsector.
50206015 Commercial Vehicles and Parts	Companies that design, develop, manufacture, and distribute light, medium and heavy duty trucks and vans. Also includes related aftermarket distribution of parts
50206020 Railroads	Companies that operate railway systems for transporting goods and mass public rail services.

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

50206025 Railroad Equipment	Companies that manufacture, supply and distribute railroad supplies
50206030 Marine Transportation	Providers of on-water transportation for commercial markets, such as container shipping. Also includes shipbuilders. Excludes ports, which are classified under Transportation Services.
50206040 Delivery Services	Operators of mail and package delivery services for commercial and consumer use. Includes courier and logistic services primarily involving air transportation.
50206050 Commercial Vehicle-Equipment Leasing	Companies that rents and lease operational equipment to commercial clients, such as: rails, tankers, freight cars, related equipment plus aviation assets (jets and airplanes).
50206060 Transportation Services	Companies providing services to the Industrial Transportation sector, including companies that manage airports, train depots, roads, bridges, tunnels, ports, and providers of logistic services to shippers of goods. Includes companies that provide aircraft and vehicle maintenance services.
55101000 Diversified Materials	Companies involved in manufacturing a diversified range of materials (e.g., bauxite, abrasive materials and composite material)
55101010 Forestry	Owners and operators of timber tracts, forest tree nurseries and sawmills. Excludes providers of finished wood products such as wooden beams, which are classified under Building Materials. Also excludes timber REITs, which are classified under Real Estate.
55101015 Paper	Companies that manufacture and market paper products including office paper, cardboard, tissue paper, newsprint, commercial pulp, etc.
55101020 Textile Products	Companies that produce and distribute various textile products such as cotton yarns, denims, and other finished fabrics.
55102000 General Mining	Companies engaged in the exploration, extraction or refining of minerals not defined elsewhere within the Mining sector. Also includes companies engaged in diversified metals and mining, marketing of mining commodities,and providers of contracted drilling services. Excludes companies that primarily provide services to Oil and Gas companies which are classified in the Oil Equipment and Services Subsector and companies that mine, process and market coal, which are classified under Coal Subsector.
55102010 Iron and Steel	Companies that mine for iron ore and companies that produce, process, and distribute steel products. This can include welding consumables, strip steel, rods, bars, wires, piping, tubing, rails, and structural products as well as sheets and coils
55102015 Metal Fabricating	Companies that manufacture and supply fabricated metal components such as, rings, piping materials, hinges, springs, etc.
55102035 Aluminum	Companies that mine or process bauxite or manufacture and distribute aluminum bars, rods and other products for use by other industries. Excludes manufacturers of finished aluminum products, such as siding, which are categorized according to the type of end product.
55102040 Copper	Companies primarily involved in the mining, extraction and distribution of copper and related minerals
55102050 Nonferrous Metals	Producers and traders of metals and primary metal products other than iron, aluminum and steel. Excludes companies that make finished products, which are categorized according to the type of end product.
55103020 Diamonds and Gemstones	Companies engaged in the exploration for and production of diamonds and other gemstones.
55103025 Gold Mining	Prospectors for and extractors or refiners of gold-bearing ores.
55103030 Platinum and Precious Metals	Companies engaged in the exploration for and production of platinum, silver and other precious metals not defined elsewhere.
55201000 Chemicals: Diversified	Companies that manufacture and market a diversified range of industrial chemicals
55201010 Chemicals and Synthetic Fibers	Companies that manufacture and distribute chemical fibers for various applications
55201015 Fertilizers	Companies that manufacture and market nitrogen fertilizers and other agricultural chemicals
55201020 Specialty Chemicals	Companies that manufacture and market a specific type or group of chemicals elsewhere in the Chemicals subsector

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

60101000 Integrated Oil and Gas	Companies that engage in all three fields of petroleum production: Extraction (upstream), Transportation (midstream), and Refining and Marketing (downstream).
60101010 Oil: Crude Producers	Companies engaged in the exploration for and drilling, production, and supply of crude oil on land
60101015 Offshore Drilling and Other Services	Companies that primarily explore and drill for oil and gas in offshore areas.
60101020 Oil Refining and Marketing	Companies primarily engaged in the refining and marketing of petroleum products (downstream).
60101030 Oil Equipment and Services	Suppliers of equipment and services to oil fields and offshore platforms, such as drilling, exploration, seismic-information services and platform construction.
60101035 Pipelines	Operators of pipelines carrying oil, gas or other forms of fuel. Excludes pipeline operators that derive the majority of their revenues from direct sales to end users, which are classified under Gas Distribution.
60101040 Coal	Companies that mine, process and market coal
60102010 Alternative Fuels	Companies that produce alternative fuels such as ethanol, methanol, hydrogen and bio-fuels that are mainly used to power vehicles, and companies that are involved in the production of vehicle fuel cells and/or the development of alternative fueling infrastructure.
60102020 Renewable Energy Equipment	Companies that develop or manufacture renewable energy equipment utilizing sources such as solar, wind, tidal, geothermal, hydro and waves.
65101010 Alternative Electricity	Companies generating and distributing electricity from a renewable source. Includes companies that produce solar, water, wind and geothermal electricity.
65101015 Conventional Electricity	Companies generating and distributing electricity through the burning of fossil fuels such as coal, petroleum and natural gas, and through nuclear energy.
65102000 Multi-Utilities	Companies that engage in multiple utilities that have no particular dominance over one another.
65102020 Gas Distribution	Distributors of gas to end users. Excludes providers of natural gas as a commodity, which are classified under the Oil and Gas industry.
65102030 Water	Companies providing water to end users, including water treatment plants.
65103035 Waste and Disposal Services	Providers of pollution control and environmental services for the management, recovery and disposal of solid and hazardous waste materials, such as landfills and recycling centers. Excludes manufacturers of industrial air and water filtration equipment, which are classified under Industrial Machinery.

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

STOXX Ltd. introduced ICB on September 20, 2004 and applies the current classification based on the latest modification effective September 22, 2008.

SUBSECTOR ASSIGNMENT FOR STOXX OPTIMISED MARKET QUARTILES

Effective up until September 2020 review, the STOXX Optimised Market Quartile indices combine subsectors to four market segments which are used in the calculation of the Market Quartile indices.

Description	ICB	ICB Name
Consumer Discretionary	3353	Automobiles
	3355	Auto Parts
	3357	Tires
	3722	Durable Household Products
	3726	Furnishings
	3728	Home Construction
	3745	Recreational Products
	3747	Toys
	3763	Clothing & Accessories
	3765	Footwear
	5371	Apparel Retailers
	5373	Broadline Retailers
	5375	Home Improvement Retailers
	5377	Specialized Consumer Services
	5379	Specialty Retailers
	5553	Broadcasting & Entertainment
	5555	Media Agencies
	5557	Publishing
	5752	Gambling
	5753	Hotels
	5755	Recreational Services
	5757	Restaurant & Bars
	5759	Travel & Tourism
Consumer Staples	3533	Brewers
	3535	Distillers & Vintners
	3537	Soft Drinks
	3573	Farming & Fishing
	3577	Food Products
	3724	Nondurable Household Products
	3767	Personal Products
	3785	Tobacco
	5337	Food Retailers & Wholesalers
Defensive	0537	Integrated Oil & Gas
	4533	Health Care Providers
	4535	Medical Equipment
	4537	Medical Supplies

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

Description	ICB	ICB Name
	4573	Biotechnology
Description	ICB	ICB Name
Defensive	4577	Pharmaceuticals
	5333	Drug Retailers
	6535	Fixed Line Telecommunications
	6575	Mobile Telecommunications
	7535	Conventional Electricity
	7537	Alternative Electricity
	7573	Gas Distribution
	7575	Multiutilities
	7577	Water
	8534	Insurance Brokers
	8536	Property & Casualty Insurance
	8538	Reinsurance
Cyclical	0533	Exploration & Production
	0573	Oil Equipment & Services
	0577	Pipelines
	0583	Renewable Energy Equipment
	0587	Alternative Fuels
	1353	Commodity Chemicals
	1357	Specialty Chemicals
	1733	Forestry
	1737	Paper
	1753	Aluminium
	1755	Nonferrous Metals
	1757	Iron & Steel
	1771	Coal
	1773	Diamonds & Gemstonds
	1775	General Mining
	1777	Gold Mining
	1779	Platinum & Precious Metals
	2353	Building Materials & Fixtures
	2357	Heavy Construction
	2713	Aerospace
	2717	Defense
	2723	Containers & Packaging
	2727	Diversified Industrials
	2733	Electrical Components & Equipment
	2737	Electronic Equipment
	2753	Commercial Vehicles & Trucks
	2757	Industrial Machinery
	2771	Delivery Services
	2773	Marine Transportation
	2775	Railroads
	2777	Transportation Services
	2779	Trucking
	2791	Business Support Services

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

Description	ICB	ICB Name
Cyclical cont.	2793	Business Training & Employment Agencies
	2795	Financial Administration
	2797	Industrial Suppliers
	2799	Waste & Disposal Services
	3743	Consumer Electronics
	5751	Airlines
	8355	Banks
	8532	Full Line Insurance
	8575	Life Insurance
	8633	Real Estate Holding & Development
	8637	Real Estate Services
	8671	Industrial & Office REITs
	8672	Retail REITs
	8673	Residential REITs
	8674	Diversified REITs
	8675	Specialty REITs
	8676	Mortgage REITs
	8677	Hotel & Lodging REITs
	8771	Asset Managers
	8773	Consumer Finance
	8775	Specialty Finance
	8777	Investment Services
	8779	Mortgage Finance
	8985	Equity Investment Instruments
	8995	Nonequity Investment Instruments
	9533	Computer Services
	9535	Internet
	9537	Software
	9572	Computer Hardware
	9574	Electronic Office Equipment
	9576	Semiconductors
	9578	Telecommunications Equipment

Effective with September 2020 review, the STOXX Optimised Market Quartile indices combine subsectors to four market segments which are used in the calculation of the Market Quartile indices.

Description	ICB	ICB Name
Consumer Discretionary	15102010	Cable Television Services
	40101010	Auto Services
	40101015	Tires
	40101020	Automobiles
	40101025	Auto Parts
	40201010	Education Services
	40201020	Funeral Parlors and Cemetery

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

	40201030	Printing and Copying Services
	40201040	Rental and Leasing Services: Consumer
	40201050	Storage Facilities
	40201060	Vending and Catering Service
	40201070	Consumer Services: Misc.
	40202010	Home Construction
	40202015	Household Furnishings
	40202020	Household Appliance
	40202025	Household Equipment and Products
	40203040	Electronic Entertainment
	40203045	Toys
	40203050	Recreational Products
	40203055	Recreational Vehicles and Boats
	40203060	Photography
	40204020	Clothing and Accessories
	40204025	Footwear
	40204030	Luxury Items
	40301010	Entertainment
	40301020	Media Agencies
	40301030	Publishing
	40301035	Radio and TV Broadcasters
	40401010	Diversified Retailers
	40401020	Apparel Retailers
	40401025	Home Improvement Retailers
	40401030	Specialty Retailers
	40501015	Travel and Tourism
	40501020	Casinos and Gambling
	40501025	Hotels and Motels
	40501030	Recreational Services
	40501040	Restaurants and Bars
	55101020	Textile Products
Consumer Staples	45101010	Brewers
	45101015	Distillers and Vintners
	45101020	Soft Drinks
	45102010	Farming, Fishing, Ranching and Plantations
	45102020	Food Products
	45102030	Fruit and Grain Processing
	45102035	Sugar
	45201030	Nondurable Household Products
	40204035	Cosmetics
	45201020	Personal Products
	45201040	Miscellaneous Consumer Staple Goods
	45103010	Tobacco
	45201010	Food Retailers and Wholesalers
Defensive	15102015	Telecommunications Services
	20101010	Health Care Facilities
	20101020	Health Care Management Services
	20101025	Health Care Services

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

	20101030	Health Care: Misc.
	20102010	Medical Equipment
	20102015	Medical Supplies
	20102020	Medical Services
	20103010	Biotechnology
	20103015	Pharmaceuticals
	30302015	Insurance Brokers
	30302020	Reinsurance
	30302025	Property and Casualty Insurance
	45201015	Drug Retailers
	60101000	Integrated Oil and Gas
	65101010	Alternative Electricity
	65101015	Conventional Electricity
	65102000	Multi-utilities
	65102020	Gas Distribution
	65102030	Water
Cyclical	10101010	Computer Services
	10101015	Software
	10101020	Consumer Digital Services
	10102010	Semiconductors
	10102015	Electronic Components
	10102020	Production Technology Equipment
	10102030	Computer Hardware
	10102035	Electronic Office Equipment
	15101010	Telecommunications Equipment
	30101010	Banks
	30201020	Consumer Lending
	30201025	Mortgage Finance
	30201030	Financial Data Providers
	30202000	Diversified Financial Services
	30202010	Asset Managers and Custodians
	30202015	Investment Services
	30203000	Mortgage REITs: Diversified
	30203010	Mortgage REITs: Commercial
	30203020	Mortgage REITs: Residential
	30204000	Closed End Investments
	30205000	Open End and Miscellaneous Investment Vehicles
	30301010	Life Insurance
	30302010	Full Line Insurance
	35101010	Real Estate Holding and Development
	35101015	Real Estate Services
	35102000	Diversified REITs
	35102010	Health Care REITs
	35102015	Hotel and Lodging REITs
	35102020	Industrial REITs
	35102025	Infrastructure REITs
	35102030	Office REITs

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

	35102040	Residential REITs
	35102045	Retail REITs
	35102050	Storage REITs
	35102060	Timber REITs

Description	ICB	ICB Name
Cyclical cont.	35102070	Other Specialty REITs
	40203010	Consumer Electronics
	40501010	Airlines
	50101010	Construction
	50101015	Engineering and Contracting Services
	50101020	Building, Roofing/Wallboard and Plumbing
	50101025	Building: Climate Control
	50101030	Cement
	50101035	Building Materials: Other
	50201010	Aerospace
	50201020	Defense
	50202010	Electrical Components
	50202020	Electronic Equipment: Control and Filter
	50202025	Electronic Equipment: Gauges and Meters
	50202030	Electronic Equipment: Pollution Control
	50202040	Electronic Equipment: Other
	50203000	Diversified Industrials
	50203010	Paints and Coatings
	50203015	Plastics
	50203020	Glass
	50203030	Containers and Packaging
	50204000	Machinery: Industrial
	50204010	Machinery: Agricultural
	50204020	Machinery: Construction and Handling
	50204030	Machinery: Engines
	50204040	Machinery: Tools
	50204050	Machinery: Specialty
	50205010	Industrial Suppliers
	50205015	Transaction Processing Services
	50205020	Professional Business Support Services
	50205025	Business Training and Employment Agencies
	50205030	Forms and Bulk Printing Services
	50205040	Security Services
	50206010	Trucking
	50206015	Commercial Vehicles and Parts
	50206020	Railroads
	50206025	Railroad Equipment
	50206030	Marine Transportation
	50206040	Delivery Services
	50206050	Commercial Vehicle-Equipment Leasing
	50206060	Transportation Services
	55101000	Diversified Materials

APPENDIX A: INDUSTRY CLASSIFICATION BENCHMARK

Description	ICB	ICB Name
	55101010	Forestry
	55101015	Paper
	55102000	General Mining
	55102010	Iron and Steel
	55102015	Metal Fabricating
Cyclical cont.	55102035	Aluminum
	55102040	Copper
	55102050	Nonferrous Metals
	55103020	Diamonds and Gemstones
	55103025	Gold Mining
	55103030	Platinum and Precious Metals
	55201000	Chemicals: Diversified
	55201010	Chemicals and Synthetic Fibers
	55201015	Fertilizers
	55201020	Specialty Chemicals
	60101010	Oil: Crude Producers
	60101015	Offshore Drilling and Other Services
	60101020	Oil Refining and Marketing
	60101030	Oil Equipment and Services
	60101035	Pipelines
	60101040	Coal
	60102010	Alternative Fuels
	60102020	Renewable Energy Equipment
	65103035	Waste and Disposal Services