

STOXX SELECT DIVERSIFICATION SOLUTIONS

December, 2016



Agenda

1. STOXX Select Diversification Solutions (SDS): A success story
2. STOXX SDS: One concept, two recipes for success
3. STOXX SDS Benchmarks
4. STOXX SDS Themes

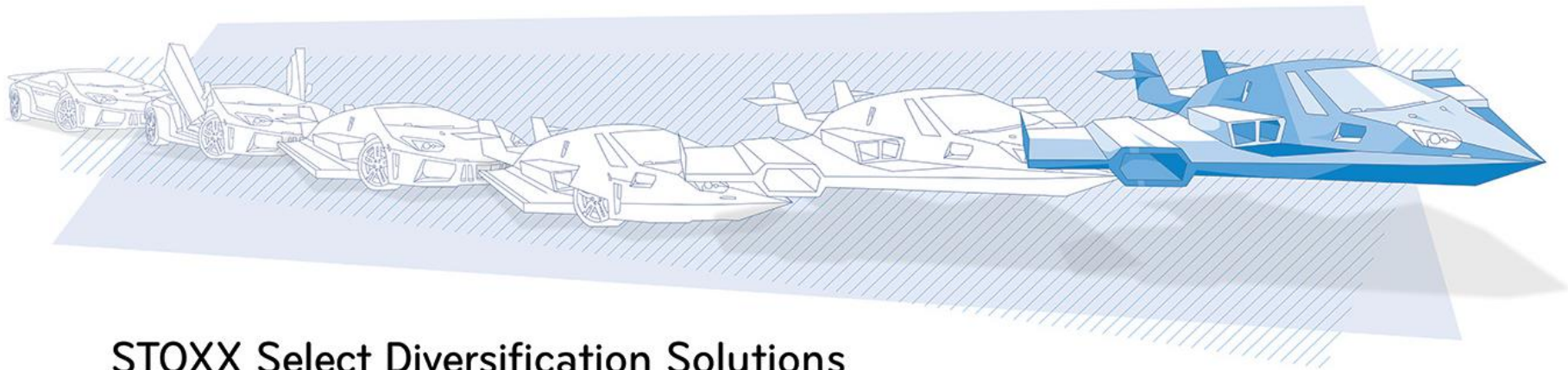
APPENDIX

1. STOXX SELECT DIVERSIFICATION SOLUTIONS: A SUCCESS STORY

Celebrating one year of STOXX Select Diversification Solutions

STOXX

INNOVATIVE. GLOBAL. INDICES.



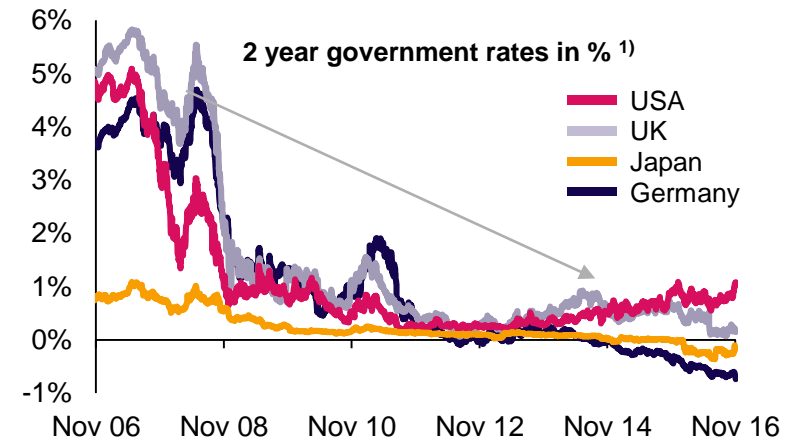
STOXX Select Diversification Solutions

Transforming benchmarks for superior performance and higher efficiency

Lookback: STOXX's high dividend benchmarks transformed the Structured Product landscape

Problem

- » Pricing / margins of capital protected products **threatened**:
 - » Low and falling interest rates
 - » Increased the costs of the zero coupon bond

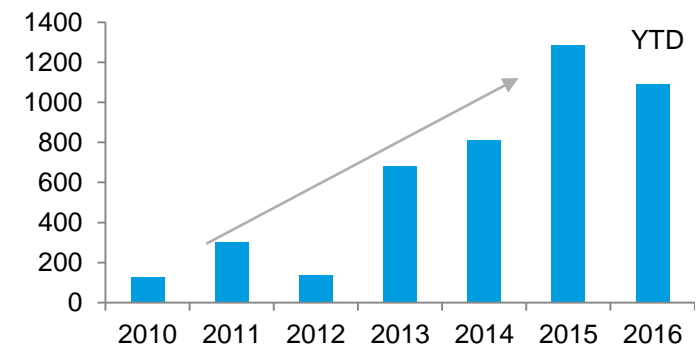


1st generation benchmark:

STOXX Select Dividend

- » High dividend solutions become new Structured Product benchmarks:
 - » STOXX Global Select Dividend 100
 - » EURO STOXX Select Dividend 30

EURm issuance in EURO STOXX Select Dividend 30 ²⁾



Simple yet powerful: STOXX 2nd generation Structured Solutions add low volatility focus

Problem

- » Hedging **cost reduction potential unexploited**:
 - » Volatility, a major variable in option pricing, was not considered by 1st generation Structured Solutions

2nd generation benchmark:

STOXX Select & Diversificat. Select

- » **Basic concept**: Combine high dividends & low volatility features
- » **Result**: Price-efficient products
 - » Hedging costs reduced by up to 60%
 - » Greater protection and higher participation for end investors
 - » Easy to explain

Issuers' and investors' preferences vary, so two index families exist:

- » **STOXX Diversification Select**: strong low volatility focus with a high dividend tilt
- » **STOXX Select**: low volatility focus while retaining some more emphasis on yield

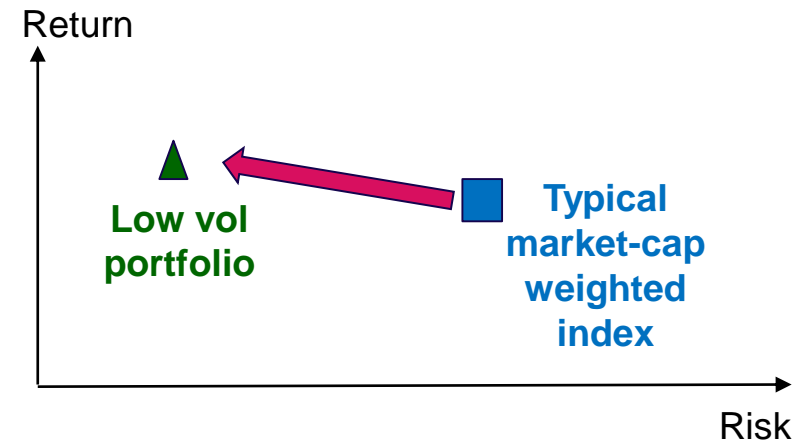
Benefits of low volatility & high dividend investing

High dividends

- » Paid out by companies that tend to be:
 - » Profitable
 - » Cash flow rich
 - » Strong Balance Sheet

Low volatility

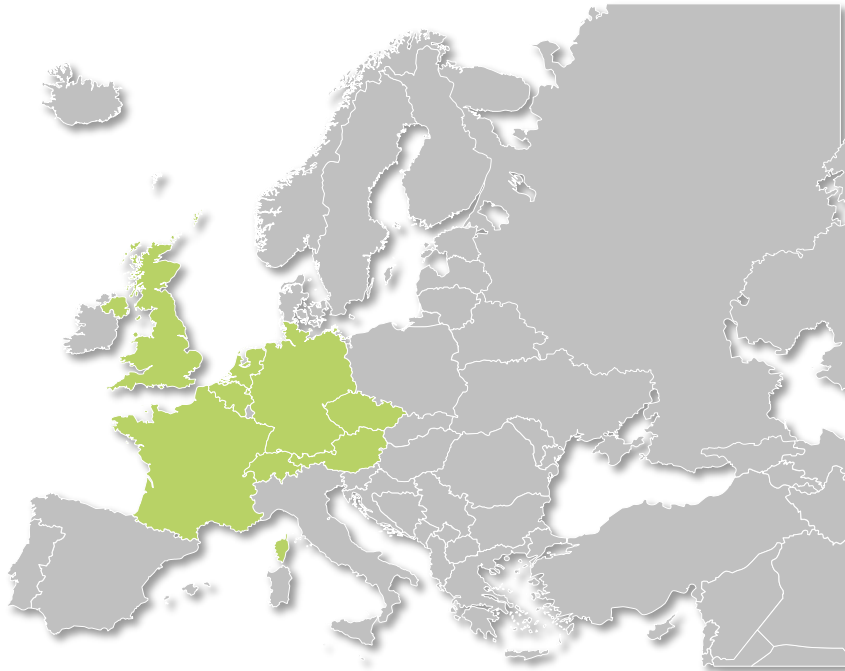
- » Strong empirical evidence of outperformance of low volatility stocks across market cycles (“low volatility anomaly”)



Jointly, low volatility & high dividend screens can help avoid “dividend traps”

STOXX SDS are becoming benchmark for structured product

SDS Products are sold across Europe...



...and is trusted by multiple SP distributors

Following counterparties publicly distributed structured products linked to SDS indices:

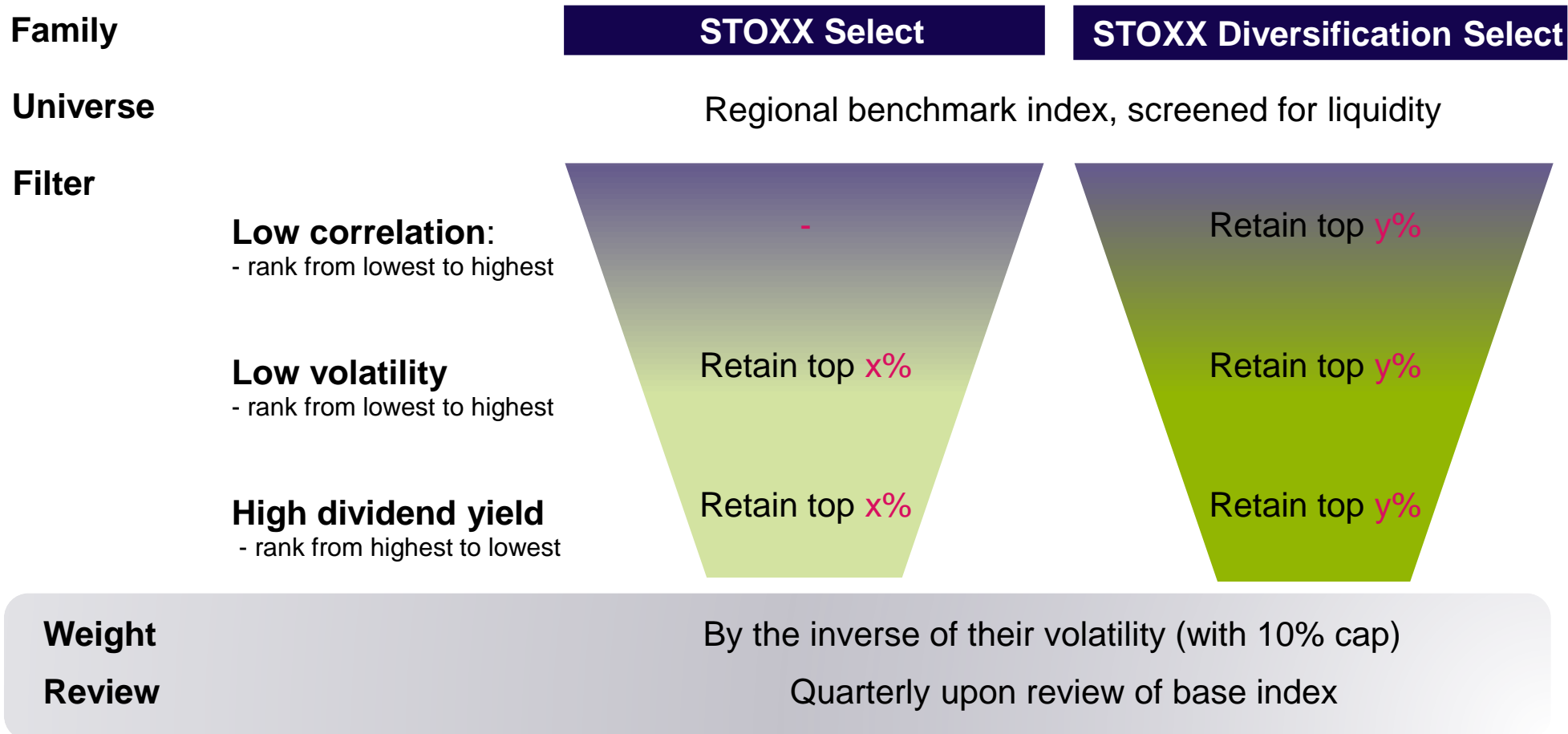
- » ABN AMRO Bank N.V.
- » AG Insurance
- » Amundi Asset Management
- » AXA Bank Belgium
- » BNP Paribas Fortis
- » Credit Suisse
- » Crelan
- » Deutsche Bank
- » Erste Group
- » Fintro
- » Goldman Sachs International
- » Kempen & Co

» STOXX SDS Indices were launched in Q4 2015 – over 1 bn EUR sold since launch¹

2. STOXX SDS: ONE CONCEPT, TWO RECIPES

Methodologies compared: STOXX Select vs. STOXX Diversification Select

Differentiation: Low correlation filter. Each filter retains equal % of components

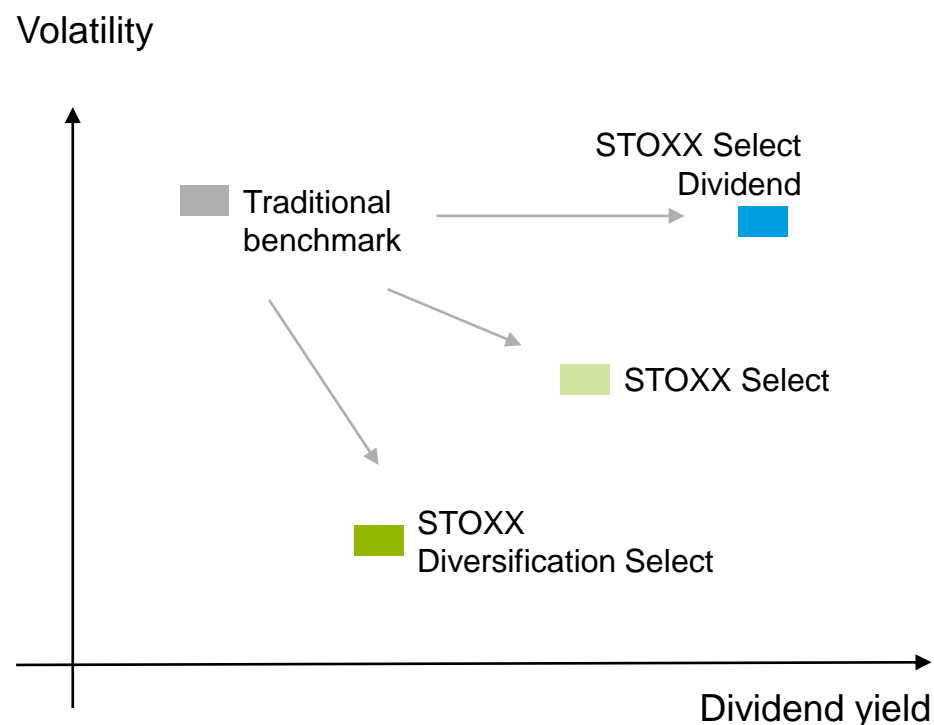


STOXX Structured Product index family overview

Methodologies in overview

Methodology element	Bench- mark	Select Dividend	Select	Diversific. Select
Low correlation filter	-	-	-	✓
Low volatility filter	-	-	✓	✓
High dividend filter	-	✓	✓	✓
Weighting scheme basis	Mkt. cap	Dividend yield	1/volatility	1/volatility
Resulting focus				
Low volatility	○	○	++	+++
High dividend	○	+++	++	+

Illustration of typical index features



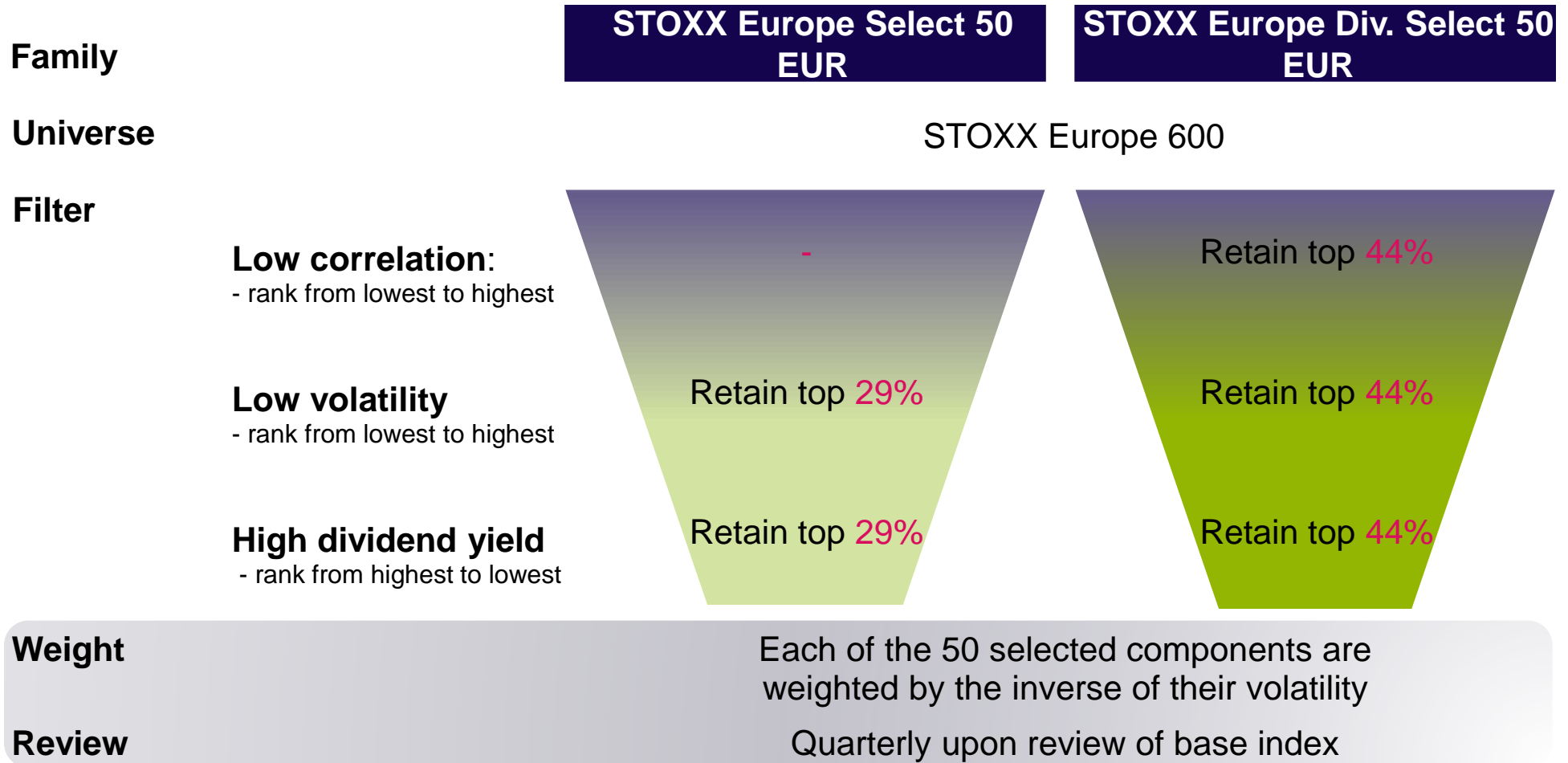
3. STOXX SDS BENCHMARKS

3.1. STOXX SDS EUROPE

Index construction methodology: STOXX Europe Select 50 vs. STOXX Europe Diversification Select 50



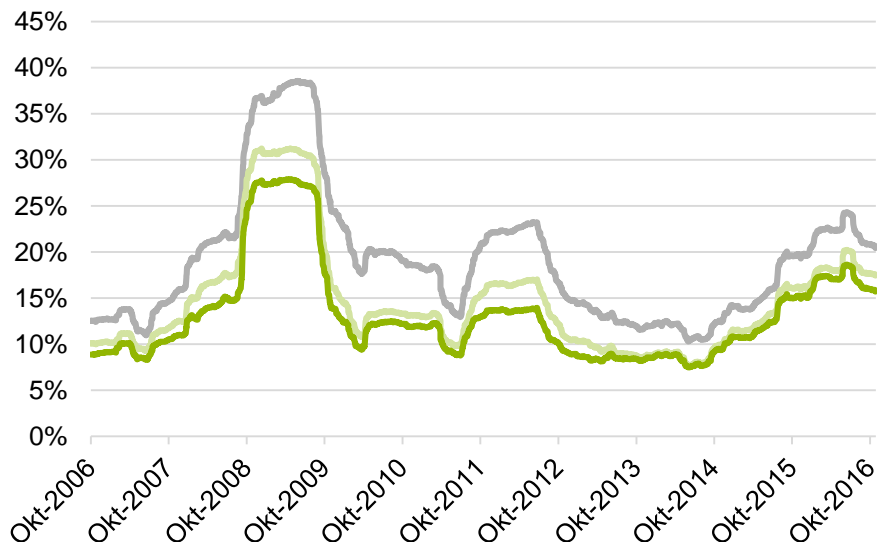
Each filter retains equal % of components



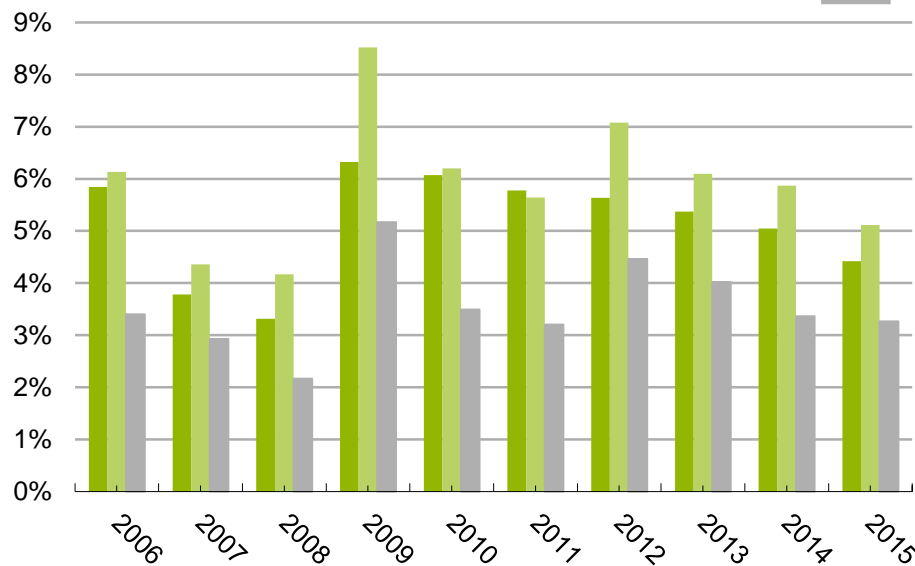
Result: STOXX SDS deliver lower volatility and higher dividend yield than their benchmark, ...



Trailing 12m volatility ¹⁾



Yearly gross dividend yield ²⁾



■ STOXX Europe Diversification Select 50 EUR (GR)
 ■ STOXX Europe Select 50 EUR (GR)
 ■ STOXX Europe 600 EUR (GR)

>> STOXX Diversification Select family persistently delivered lowest volatility.

>> STOXX Select family persistently delivered highest dividend yield

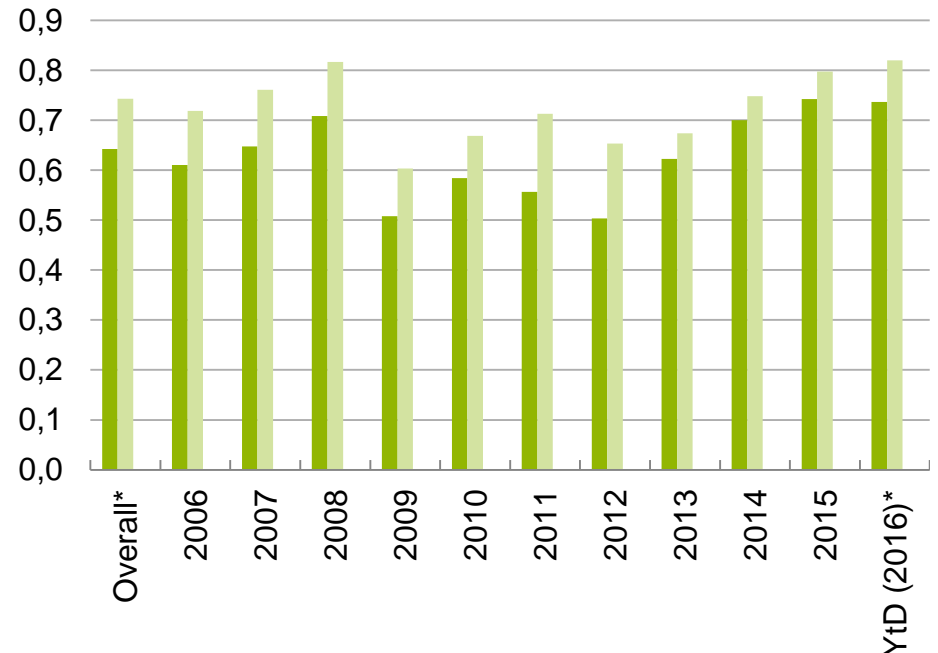
... SDS also outperformed across market cycles, except during strong bull market periods



Returns by period ¹⁾



Beta vs. STOXX Europe 600 by period ¹⁾

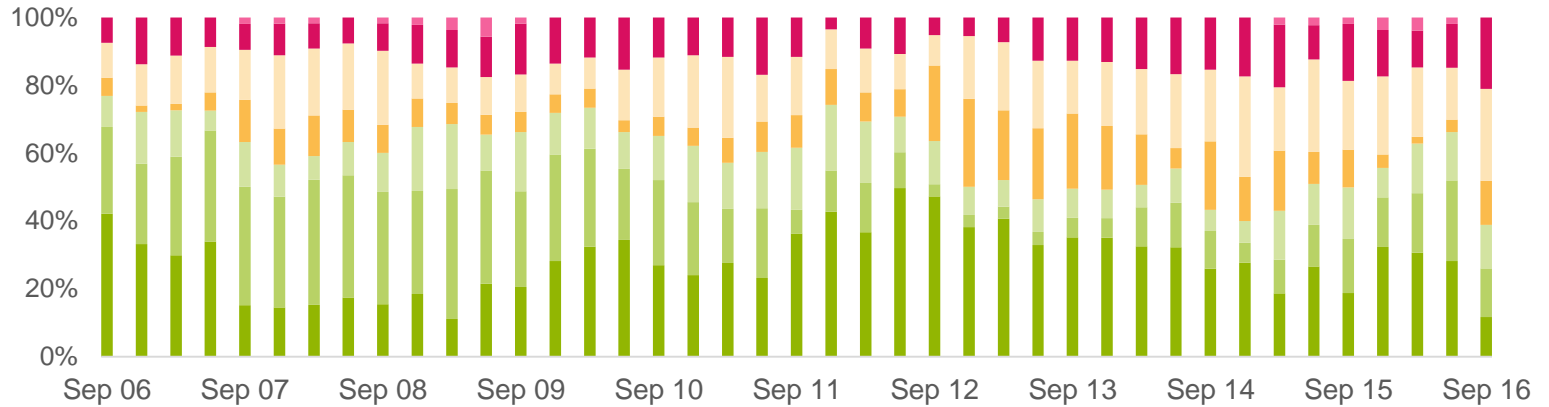


■ STOXX Europe Diversification Select 50 EUR (GR)
 ■ STOXX Europe Select 50 EUR (GR)
 ■ STOXX Europe 600 EUR (GR)

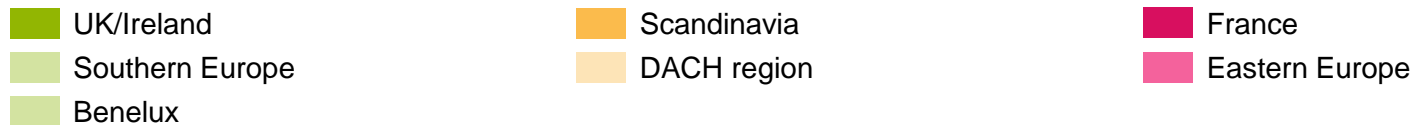
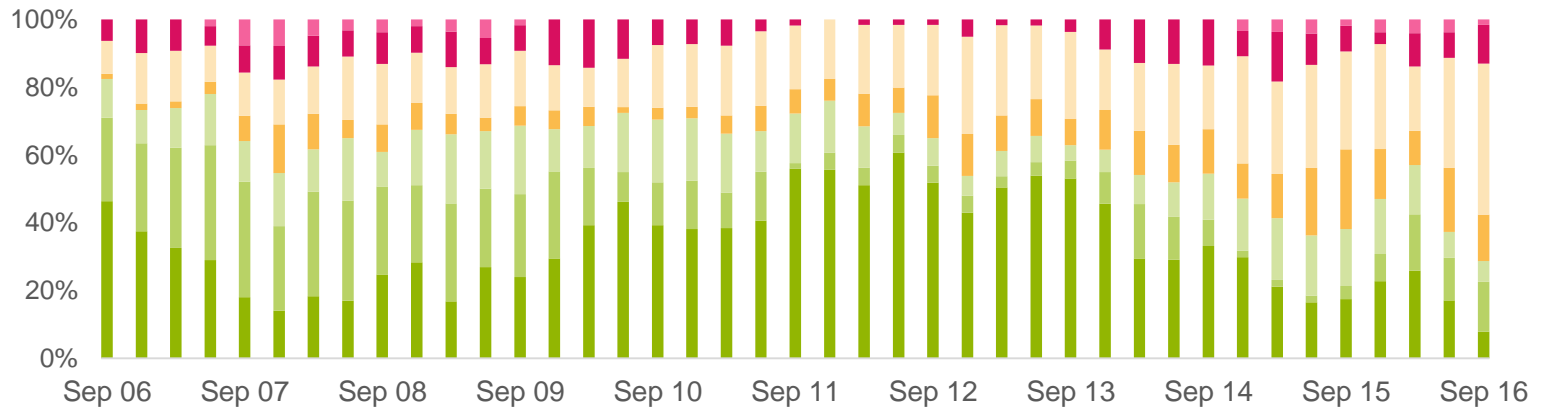
Region Allocation



**STOXX Europe
Select 50 EUR**



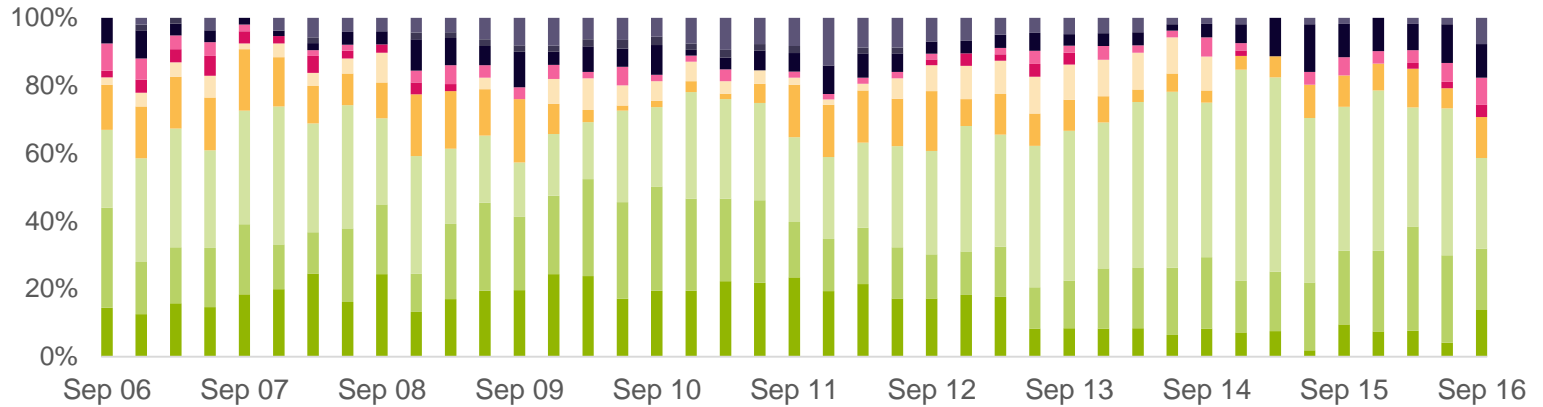
**STOXX Europe
Diversification
Select 50 EUR**



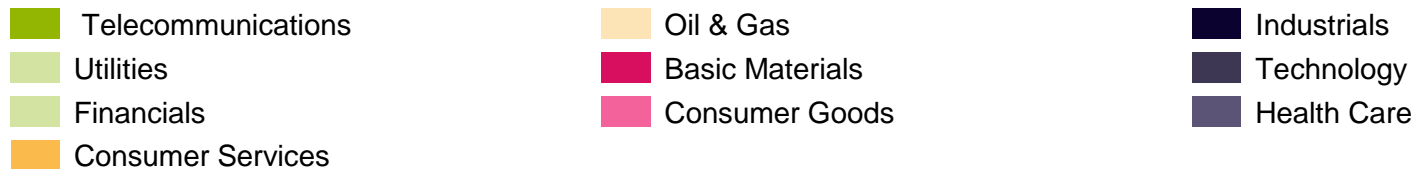
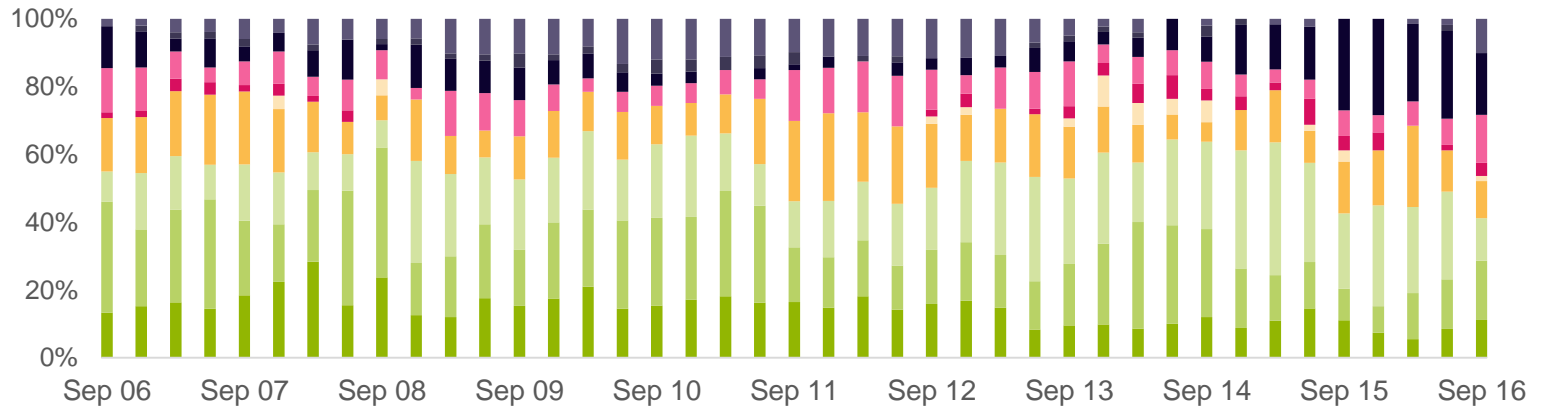
Industry Allocation



**STOXX Europe
Select 50 EUR**



**STOXX Europe
Diversification
Select 50 EUR**



STOXX SDS achieve outperformance at lower volatility and higher divided yield



Key figures ¹⁾

Key figures ¹⁾	STOXX Europe Div. Select 50 EUR	STOXX Europe Select 50 EUR	STOXX Europe 600 (benchmark)
Return, ann.	6.8%	6.0%	3.1%
Volatility, all.	14.4%	16.2%	20.7%
Gross div. yield	4.9%	5.7%	3.5%
Max. drawdown	44.5%	47.1%	58.4%
Sharpe ratio	0.45	0.37	0.20
Tracking error vs. benchmark	9.3%	7.3%	0.0%
Beta vs. benchmark	0.64	0.74	1.00

Index ¹⁾



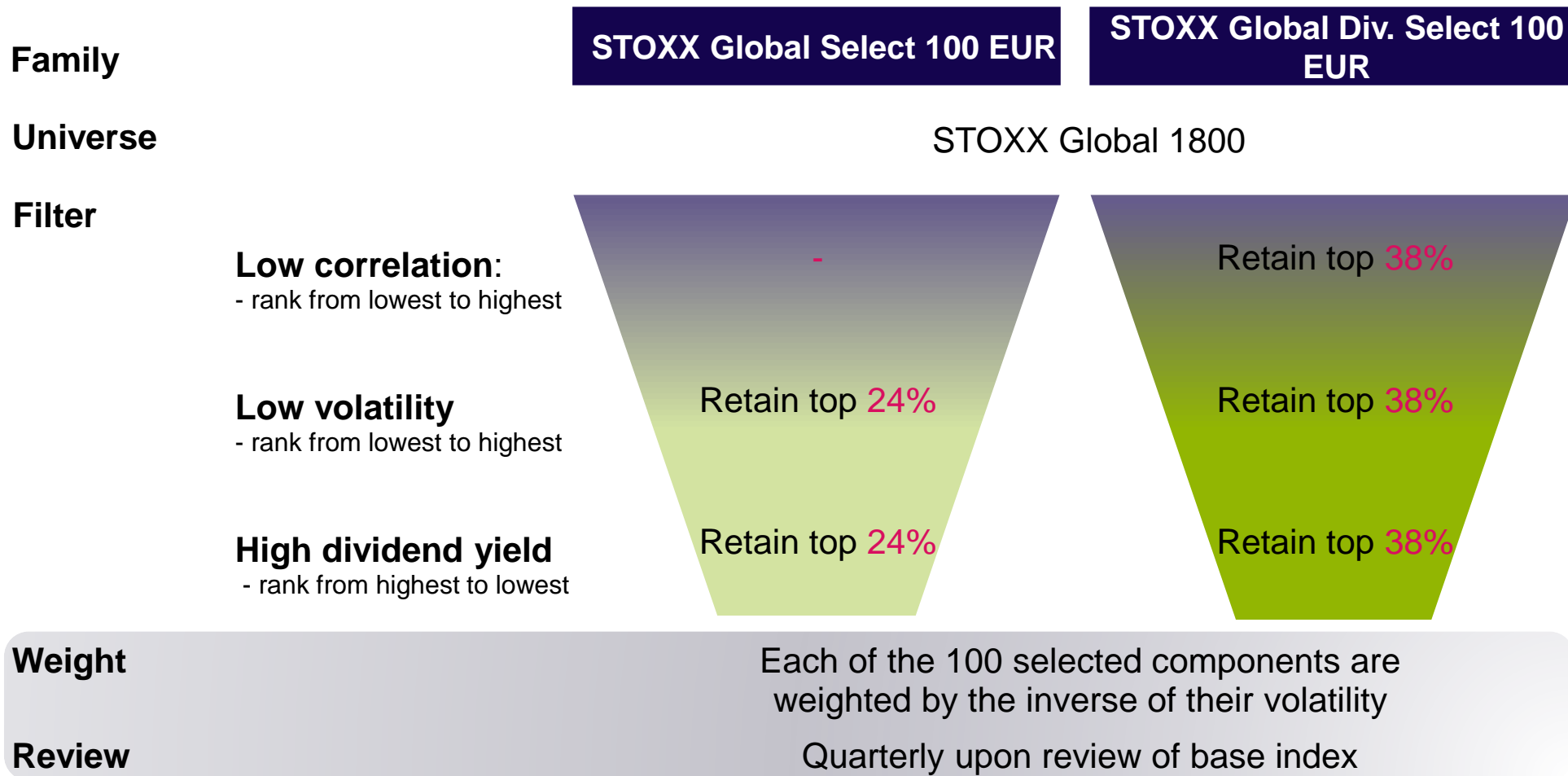
- STOXX Europe Diversification Select 50 EUR (GR)
- STOXX Europe Select 50 EUR (GR)
- STOXX Europe 600 EUR (GR)

3.2. STOXX SDS GLOBAL

Index construction methodology: STOXX Global Select 100 vs. STOXX Global Diversification Select 100



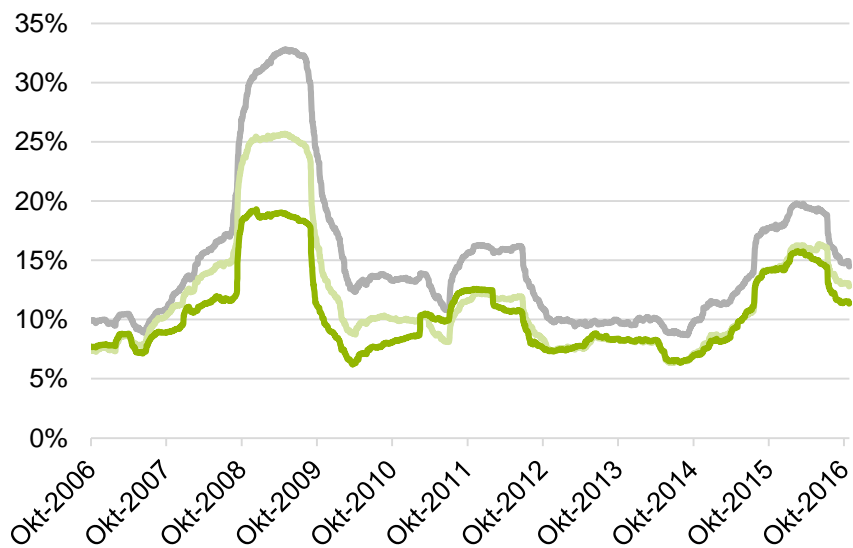
Each filter retains equal % of components



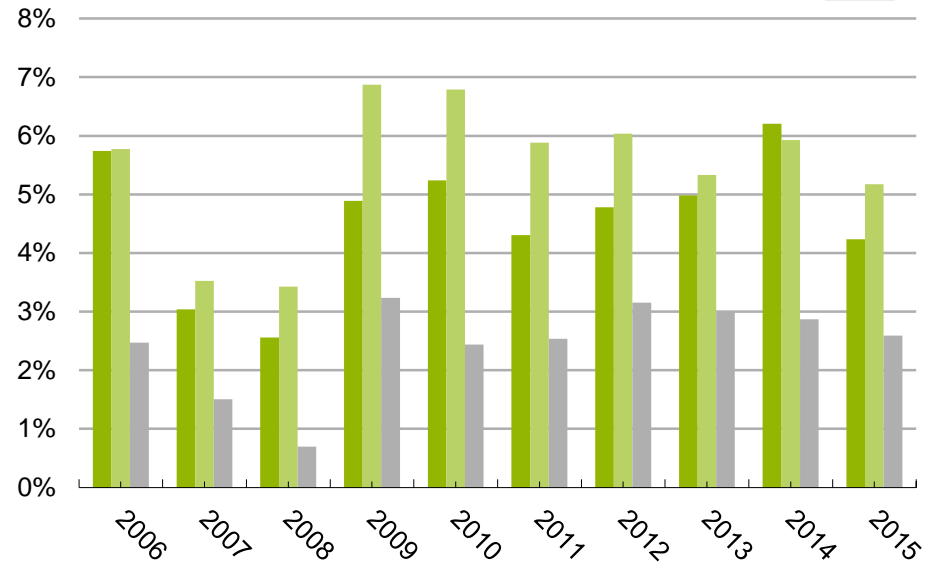
Result: Not only did SDS deliver lower volatility and higher dividends than their benchmark, ...



Trailing 12m volatility ¹⁾



Yearly gross dividend yield ²⁾



■ STOXX Global Diversification Select 100 EUR (GR)
 ■ STOXX Global Select 100 EUR (GR)
 ■ STOXX Global 1800 EUR (GR)

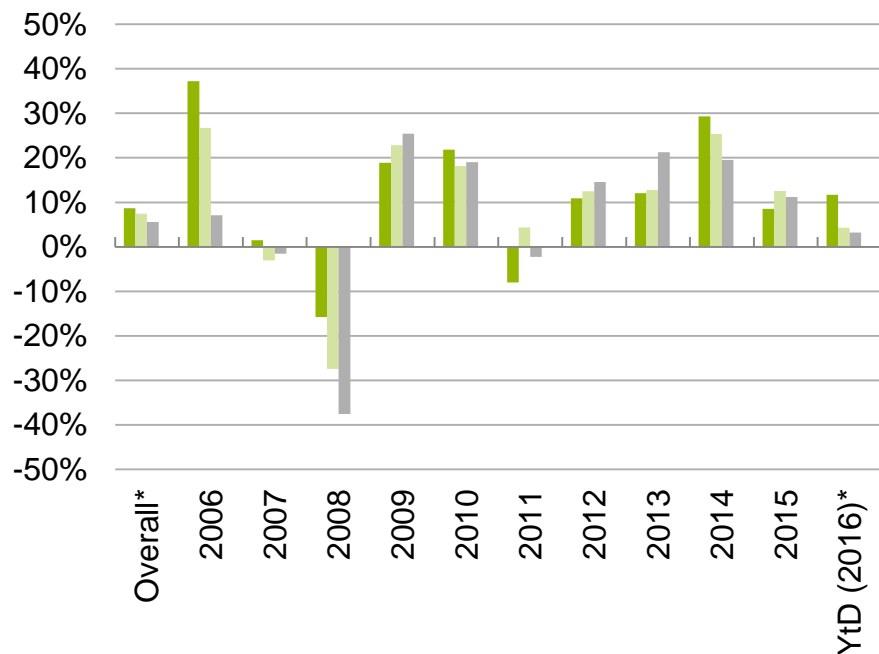
>> STOXX Diversification Select family persistently delivered lowest volatility.

>> STOXX Select family persistently delivered highest dividend yield

... SDS also offered protection when most needed, especially Diversification Select in recent credit crisis



Returns by period ¹⁾



Beta vs. STOXX Global 1800 period ¹⁾

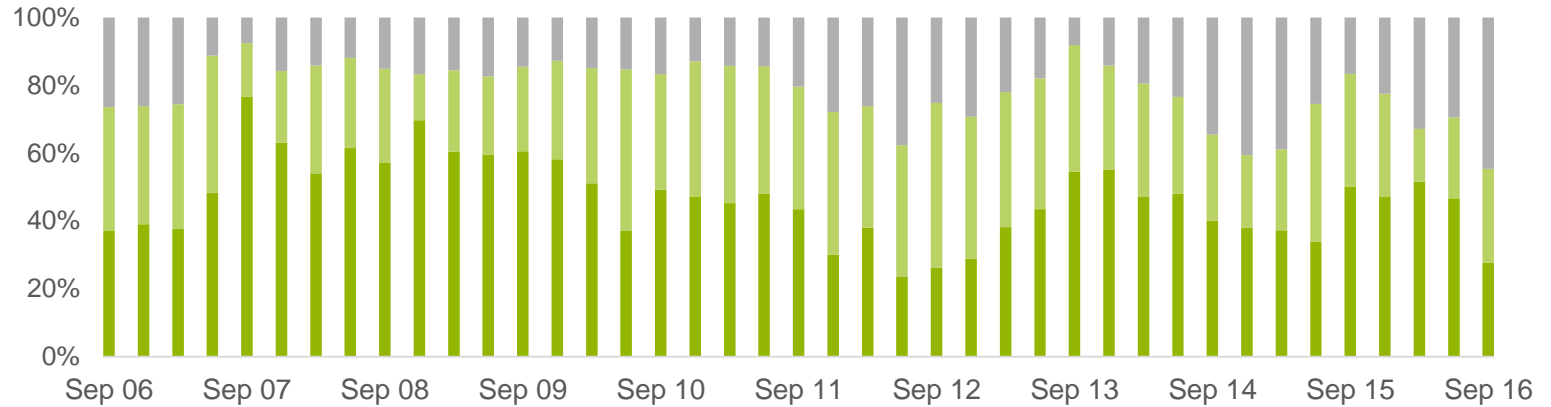


■ STOXX Global Diversification Select 100 EUR (GR)
 ■ STOXX Global Select 100 EUR (GR)
 ■ STOXX Global 1800 EUR (GR)

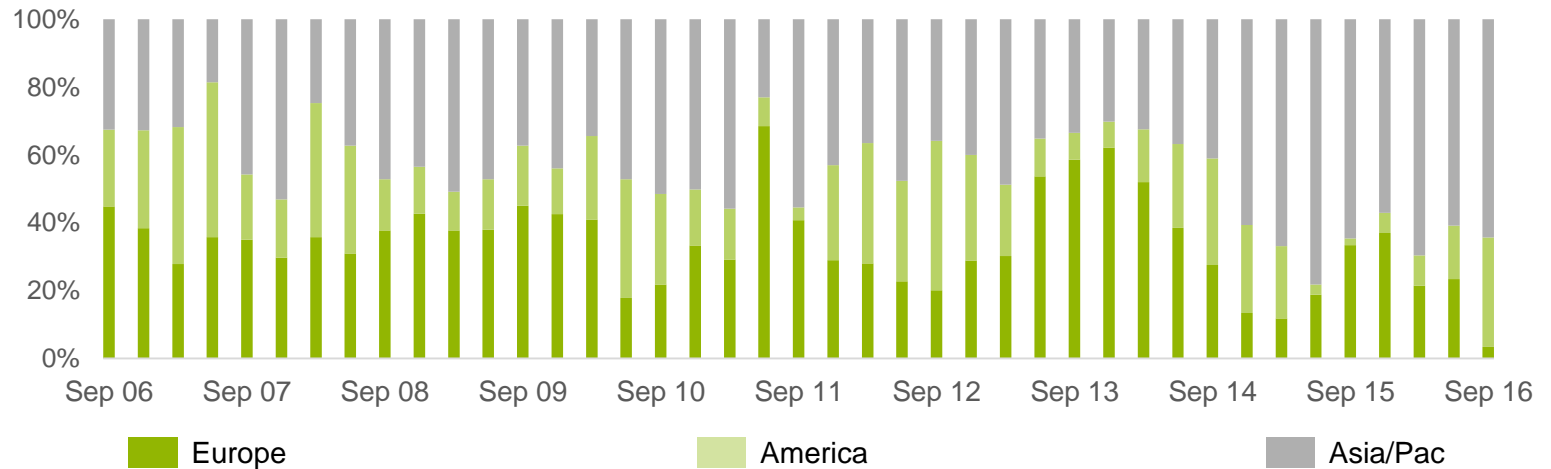
Region Allocation



**STOXX Global
Select 100 EUR**



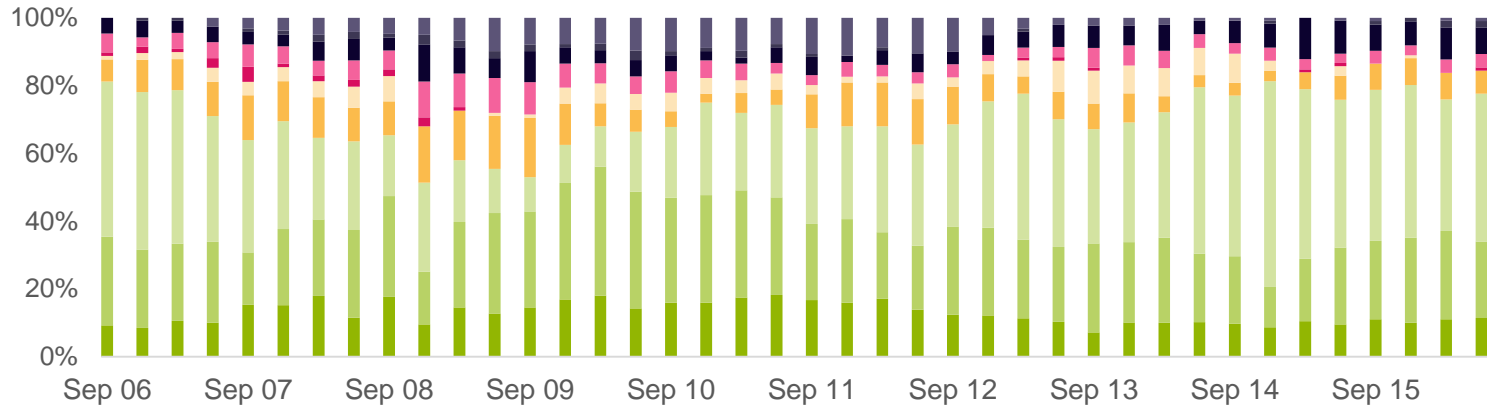
**STOXX Global
Diversification
Select 100 EUR**



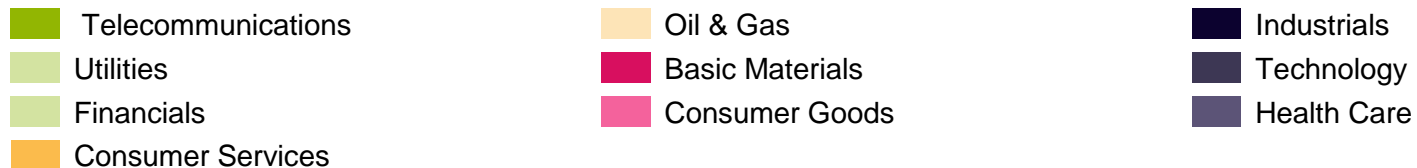
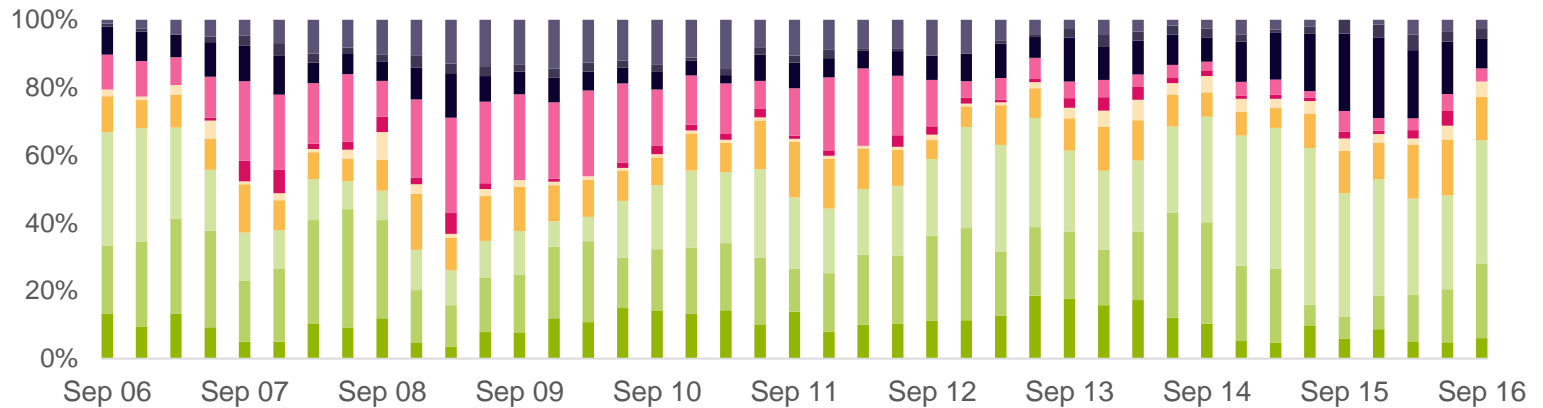
Industry Allocation



**STOXX Global
Select 100 EUR**



**STOXX Global
Diversification
Select 100 EUR**



STOXX SDS achieve outperformance at lower volatility and higher divided yield

Key figures ¹⁾

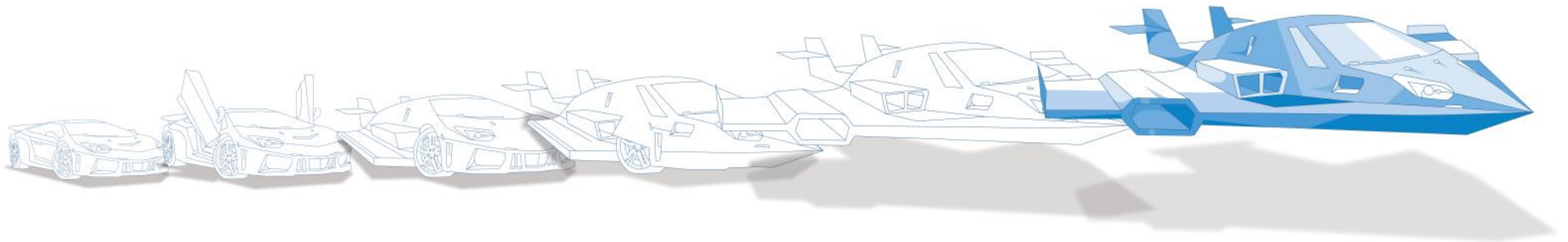
Key figures ¹⁾	STOXX Global Div. Select 100 EUR	STOXX Global Select 100 EUR	STOXX Global 1800 (benchmark)
Return	8.6%	7.5%	5.6%
Volatility	11.2%	13.0%	16.4%
Gross div. yield	4.4%	5.3%	2.3%
Max. drawdown	29.4%	44.6%	53.7%
Sharpe ratio	0.70	0.53	0.35
Tracking error vs. Benchmark	11.3%	7.4%	0.0%
Beta vs. benchmark	0.50	0.71	1.00

Index ¹⁾



- STOXX Global Diversification Select 100 EUR (GR)
- STOXX Global Select 100 EUR (GR)
- STOXX Global 1800 EUR (GR)

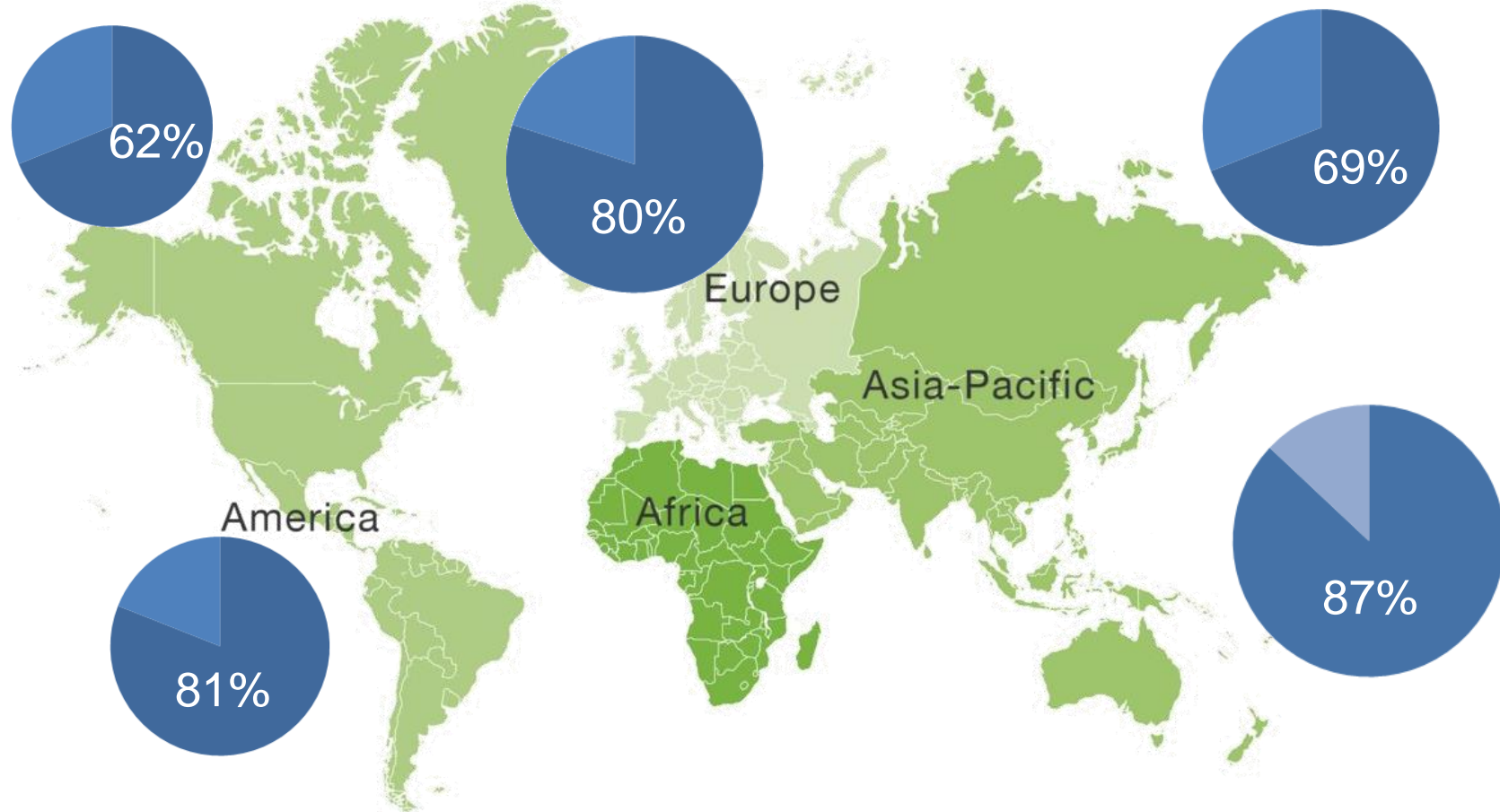
4. STOXX SDS THEMES



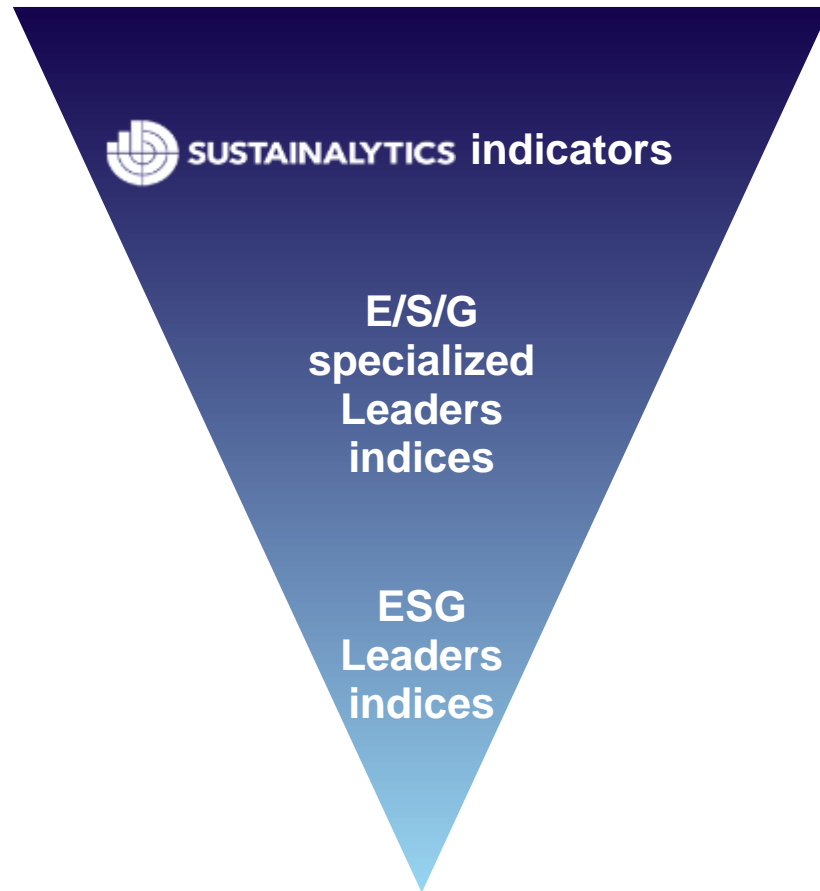
4.1 ESG

The new ESG Investment Paradigm – ESG 2.0.

Investors around the world are looking for sustainable investments to make a positive impact on the societies, economies and environments they inhabit¹⁾



STOXX's approach uses Sustainalytics for its ESG scores



- » Set and weighting of KPIs indicators is sector specific. Weighting matrix is transparent and publicly available. Data is provided by **Sustainalytics, the award-winning research firm specialized in ESG.**
- » Specialized ESG Leaders indices:
 - » **STOXX Global ESG Environmental Leaders**
 - » **STOXX Global ESG Social Leaders**
 - » **STOXX Gloval ESG Governance Leaders**
- » **STOXX Global ESG Leaders** universe are constructed as the weighted sum of members of specialized E/S/G Leaders indices

STOXX ESG Leaders Universe contains 345 companies from universe of 1,800¹⁾

Universe  1,800 stocks

266 companies excluded (data not available, exclusion criteria: UN Global Compact & controversial weapons)

1,189 not qualified (failed selection process)

Environmental Leaders Index (238)

Social Leaders Index (243)

Governance Leaders Index (247)

» Top 10 total average rating: 95.66

Overlap (117)

» Top 10 total average rating: 96.72

- » Swiss Reinsurance
- » Allianz
- » Gecina
- » Atos
- » DNB

- » British Land Co.
- » Whitbread
- » Hammerson
- » City Developments
- » AXA

- » ADP
- » Terna
- » Gecina
- » Amec Foster Wheeler
- » Croda Intl.

- » Endesa
- » Clariant
- » Atlas Copco
- » Evonik Industries
- » Inpex Corp.

- » Teck Resources
- » Goldcorp
- » ArcelorMittal
- » IMI
- » Stockland

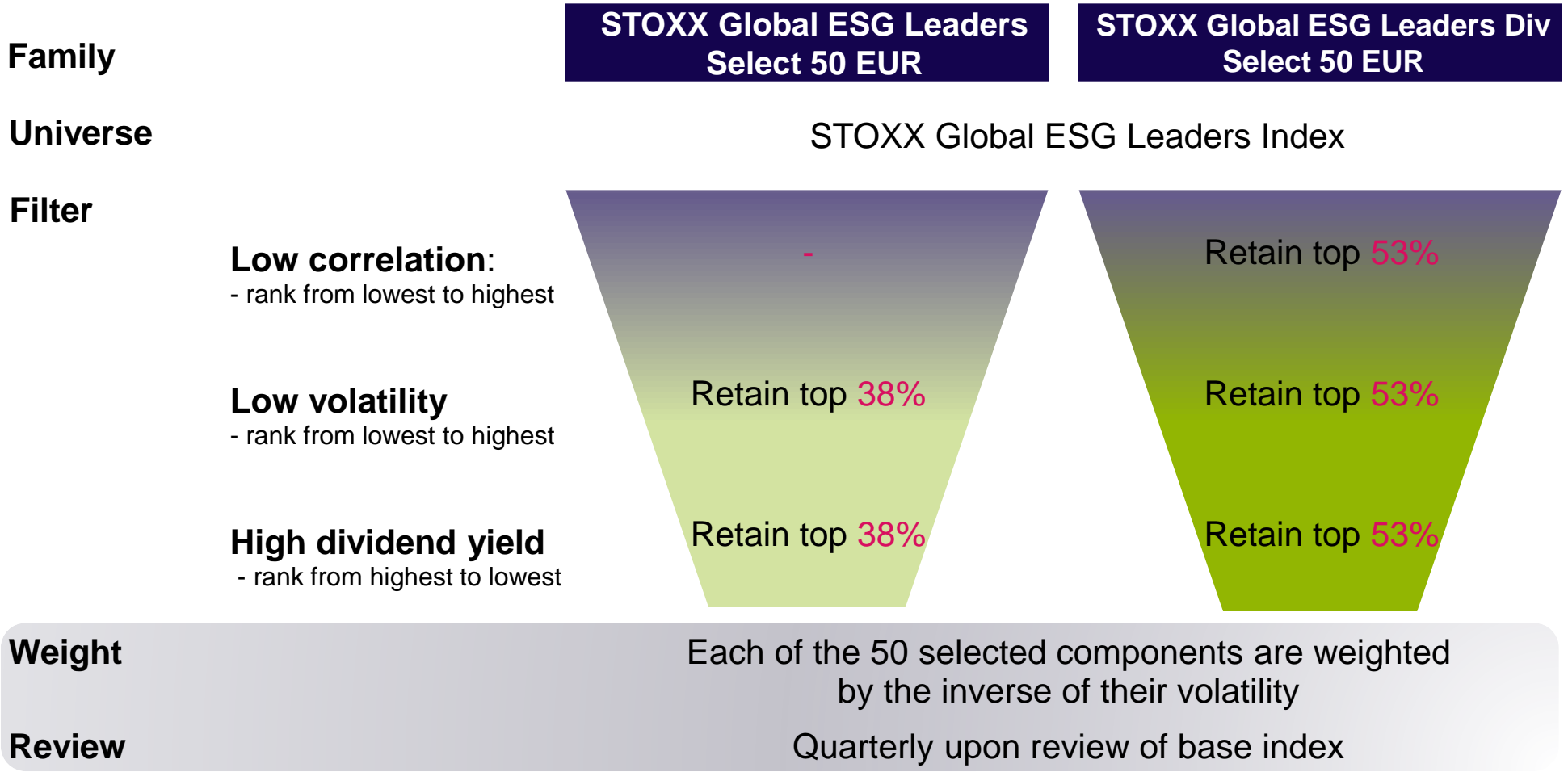
- » Norsk Hydro
- » Snam Rete Gas
- » EDP Energias de Portugal
- » Tullow Oil
- » TELUS

» Top 10 total average rating: 96.89

Index construction methodology: STOXX Global ESG Leaders Select 50 vs. STOXX Global ESG Leaders Div. Select 50



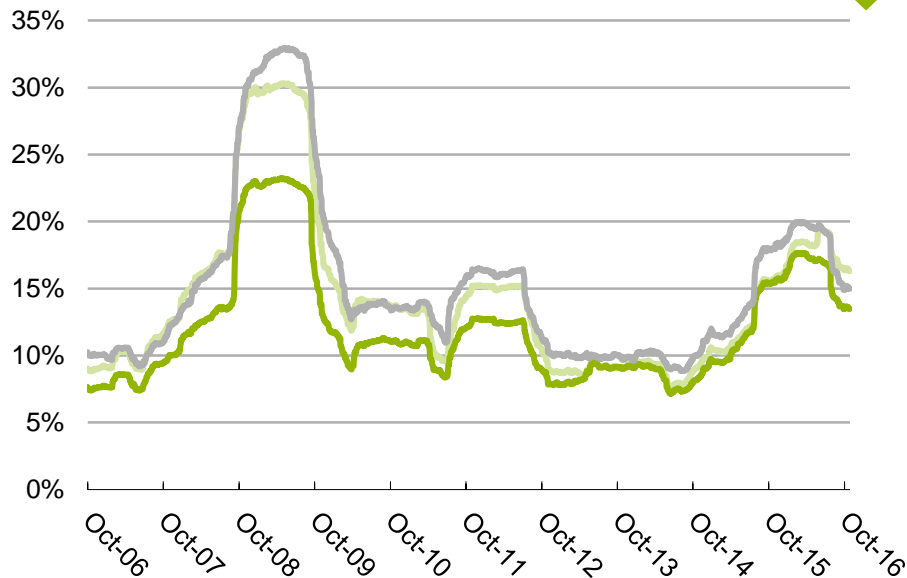
Each filter retains equal % of components



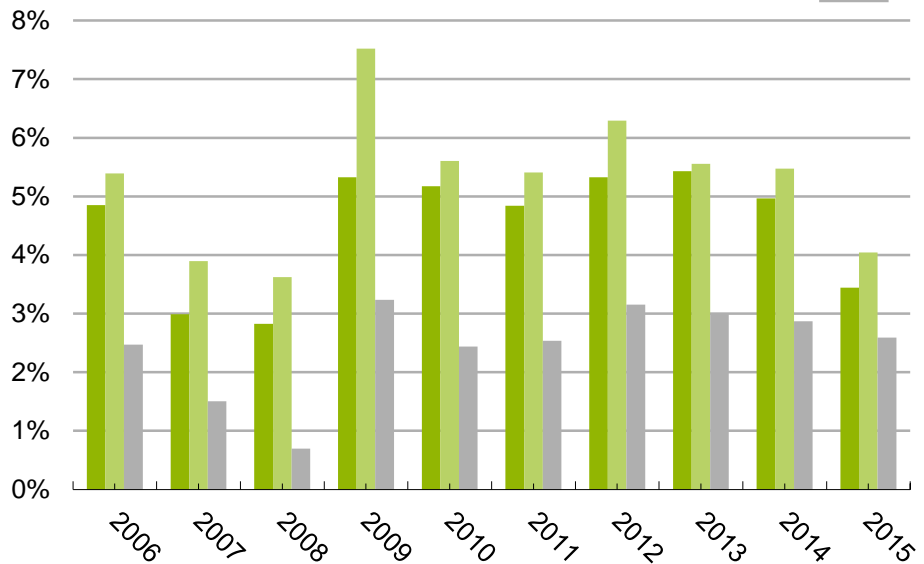
Result: Not only did SDS ESG Leaders deliver sustainable income (high dividends & low volatility),



Trailing 12m volatility ¹⁾



Yearly gross dividend yield ²⁾



■ STOXX Global ESG Leaders Div. Select 50 EUR (GR)
 ■ STOXX Global ESG Leaders Select 50 EUR (GR)
 ■ STOXX Global 1800 EUR (GR)

>> STOXX Diversification Select family persistently delivered lowest volatility.

>> STOXX Select family persistently delivered highest dividend yield

.....SDS ESG Leaders also outperformed the benchmark while integrating best-in-class ESG principles

Key figures ¹⁾

Key figures ¹⁾	STOXX Global ESG Leaders Diversificat. Select 50	STOXX Global ESG Leaders Select 50	STOXX Global 1800
Return	7.2%	6.0%	5.6%
Volatility	12.8%	15.5%	16.4%
Gross div. yield	4.4%	5.2%	2.3%
Max. drawdown	38.0%	47.2%	53.7%
Sharpe ratio	0.53	0.39	0.35
Tracking error vs. Benchmark	8.1%	9.4%	0.0%
Beta vs. benchmark	1.12	0.88	1.00

Index ¹⁾



- STOXX Global ESG Leaders Diversification Select 100 EUR (GR)
- STOXX Global ESG Leaders Select 100 EUR (GR)
- STOXX Global 1800 EUR (GR)

4.2. SDS LOW CARBON

Low Carbon is not a trend, but a long-term commitment by governments, financial sector and investors globally

Investors worth a total of \$24 trillion committed to participate in the transition to a low-carbon economy

Risks

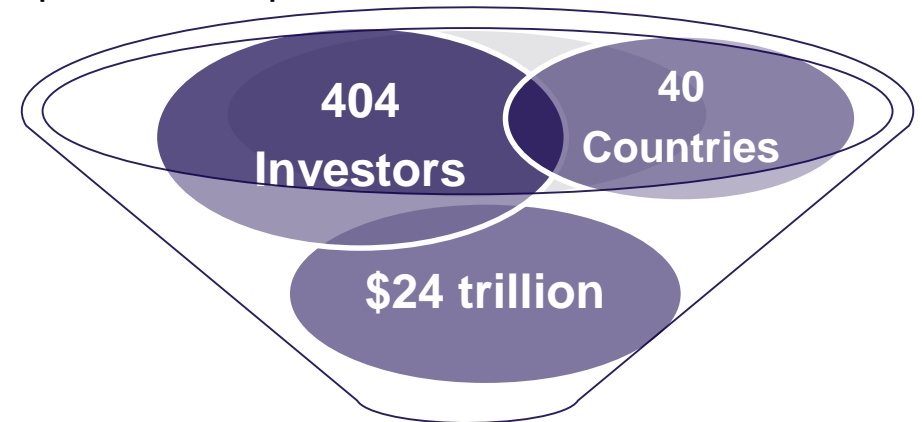
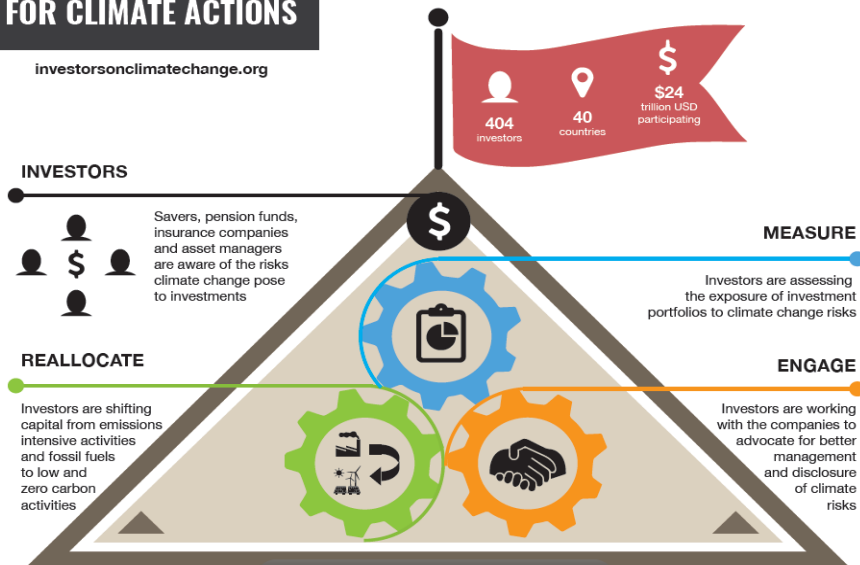
- » Research¹⁾ shows that climate change could cost up to 19% of global GDP by end of 2030
- » Investors are seeking ways to mitigate the financial costs of climate change

Opportunities

- » Investors are discovering the potential of investments in renewable energy and the low-carbon economy
- » Such investments offer favorable risk-return profiles compared to the benchmark

INVESTOR PLATFORM FOR CLIMATE ACTIONS

investorsonclimatechange.org

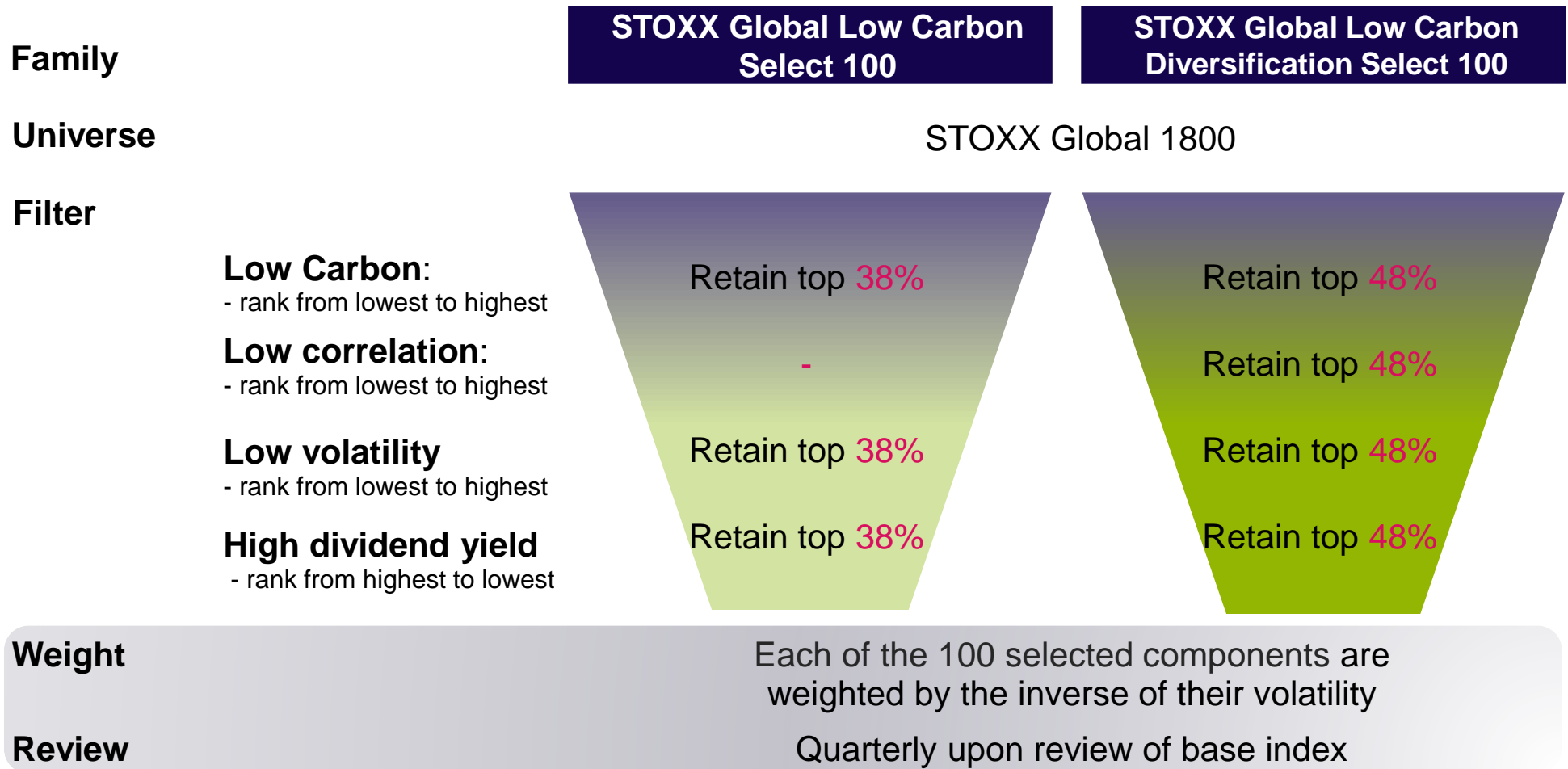


Global Investor Statement on Climate Change

Index construction methodology: STOXX Global Low Carbon Select 100 and STOXX Global Low Carbon Div. Select 100



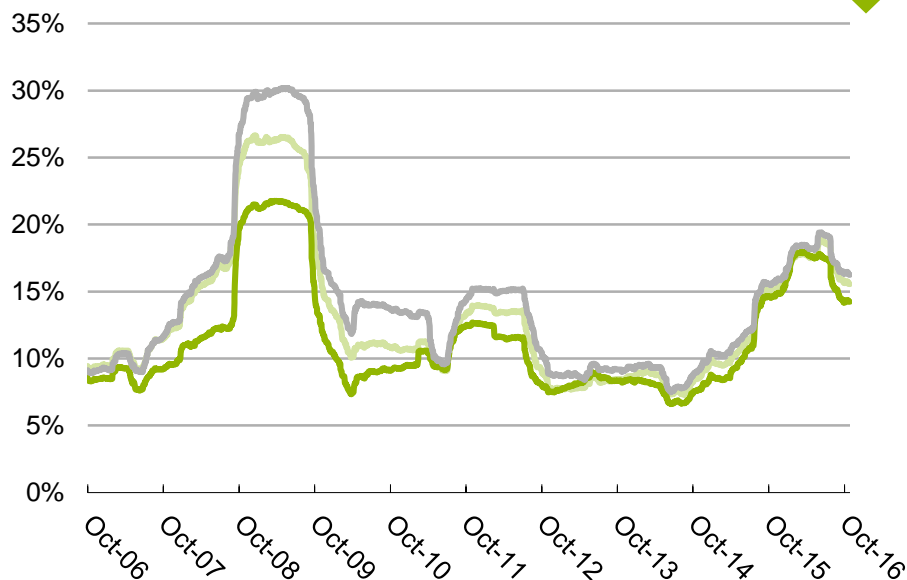
Additional filter for Low Carbon. Each filter retains equal % of components



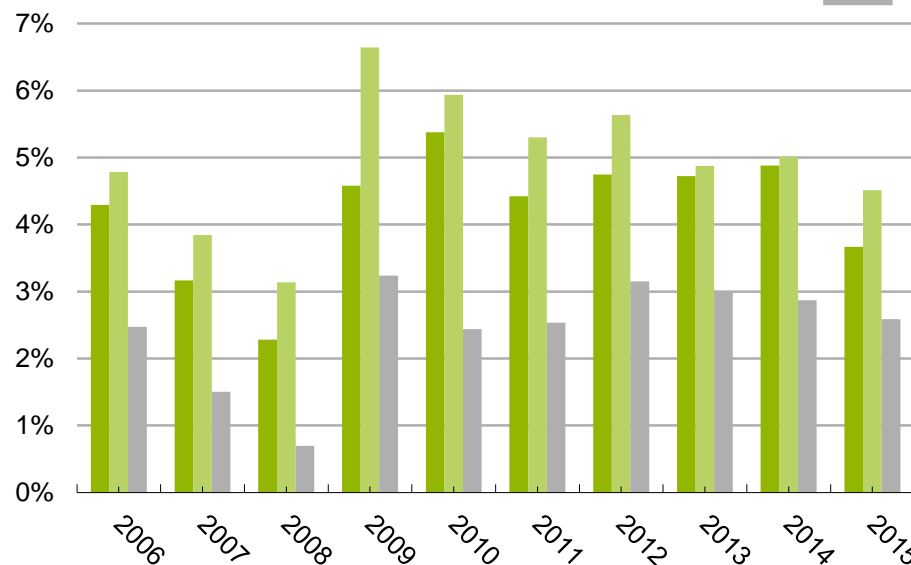
Result: Not only did SDS Low Carbon deliver lower volatility and higher dividends than their benchmark, ...



Trailing 12m volatility ¹⁾



Yearly gross dividend yield ²⁾



■ STOXX Global Low Carbon Div. Select 100 EUR (GR)
 ■ STOXX Global Low Carbon Select 100 EUR (GR)
 ■ STOXX Global 1800 EUR (GR)

>> STOXX Diversification Select family persistently delivered lowest volatility

>> STOXX Select family persistently delivered highest dividend yield

.....SDS Low Carbon also outperformed the benchmark while significantly reducing the carbon footprint

Key figures ¹⁾

Key figures ¹⁾	STOXX Global Low Carbon Div. Select 100	STOXX Global Low Carbon Select 100	STOXX Global 1800
Return	8.3%	6.8%	5.6%
Volatility	12.1%	14.0%	16.4%
Gross div. yield	4.1%	4.8%	2.3%
Max. drawdown	34.4%	44.8%	53.7%
Sharpe ratio	0.64	0.47	0.35
Carbon Reduction	-61.48%	-70.22%	0.0%
Tracking error vs. Benchmark	9.1%	8.1%	0.0%
Beta vs. benchmark	1.13	1.01	1.00

Index ¹⁾



- STOXX Global Low Carbon Div. Select 100 EUR (GR)
- STOXX Global Low Carbon Select 100 EUR (GR)
- STOXX Global 1800 EUR (GR)

APPENDIX

List of all Select & Diversification Select Indices

Select Indices

Global

STOXX Global Select 100 EUR & USD
STOXX Emerging Markets Select 100 EUR & USD
STOXX Global ESG Leaders Select 50 EUR & USD
STOXX Global ESG Environmental Leaders Select 30 EUR
STOXX Global ESG Governance Leaders Select 30 EUR
STOXX Global ESG Social Leaders Select 30 EUR
STOXX Global Low Carbon Select 100 EUR

Europe

EURO STOXX Select 50 EUR
EURO STOXX Low Carbon Select 50
STOXX Europe Select 50 EUR
STOXX Europe ESG Leaders Select 30 EUR
STOXX Europe ESG Environmental Leaders Select 30 EUR
STOXX Europe ESG Governance Leaders Select 30 EUR
STOXX Europe ESG Social Leaders Select 30 EUR
STOXX Europe Low Carbon Select 50 EUR
STOXX Europe Sustainability Select 30 EUR
STOXX Europe Christian Select 30 EUR
STOXX True Exposure Europe 50% Select 30 EUR & USD
STOXX Nordic Select 30 SEK¹⁾

Other regions

STOXX North America Select 50 EUR & USD
STOXX Asia/Pacific Select 50 EUR & JPY
STOXX USA Select 50 USD
STOXX Japan Select 50 JPY
STOXX Canada Select 30 CAD
STOXX USA Low Carbon Select 50 USD

Diversification Select Indices

STOXX Global Diversification Select 100 EUR & USD
STOXX Emerging Markets Diversification Select 100 EUR & USD
STOXX Global ESG Leaders Diversification Select 50 EUR & USD
STOXX Global ESG Environmental Diversification Leaders Select 30 EUR
STOXX Global ESG Governance Diversification Leaders Select 30 EUR
STOXX Global ESG Social Leaders Diversification Select 30 EUR
STOXX Global Low Carbon Diversification Select 100 EUR

EURO STOXX Diversification Select 50 EUR
EURO STOXX Low Carbon Diversification Select 50
STOXX Europe Diversification Select 50 EUR
STOXX Europe ESG Leaders Diversification Select 30 EUR
STOXX Europe ESG Environmental Leaders Diversification Select 30 EUR
STOXX Europe ESG Governance Leaders Diversification Select 30 EUR
STOXX Europe ESG Social Leaders Diversification Select 30 EUR
STOXX Europe Low Carbon Diversification Select 50 EUR
STOXX Europe Sustainability Diversification Select 30 EUR
STOXX Europe Christian Diversification Select 30 EUR
STOXX True Exposure Europe 50% Diversification Select 30 EUR & USD
STOXX Nordic Diversification Select 30 SEK

STOXX North America Diversification Select 50 EUR & USD
STOXX Asia/Pacific Diversification Select 50 EUR & JPY
STOXX USA Diversification Select 50 USD
STOXX Japan Diversification Select 50 JPY
STOXX Canada Diversification Select 30 CAD
STOXX USA Low Carbon Diversification Select 50 USD

List of Select & Diversification Select Indices available on Bloomberg

Select Indices

SXW1SEE - STOXX Global Select 100 EUR Price
SXW1SEGR - STOXX Global Select 100 EUR Gross Return
SGESGSEP - STOXX Global ESG Leaders Select 50 EUR Price
SGESGSEG - STOXX Global ESG Leaders Select 50 EUR Gross Return
SGENVSEP - STOXX Global ESG Environmental Leaders Select 30 EUR Price
SGGOVSEP - STOXX Global ESG Governance Leaders Select 30 EUR Price
SGSOCSEP - STOXX Global ESG Social Leaders Select 30 EUR Price
SXW1CSEE - STOXX Global Low Carbon Select 100 Price
EDESEP - STOXX Emerging Markets Select 100 EUR Price
EDESEGR - STOXX Emerging Markets Select 100 EUR Gross Return

SXXSEE - EURO STOXX Select 50 EUR Price
SXXSET - EURO STOXX Select 50 EUR Net Return
SXXCSEE - EURO STOXX Low Carbon Select 50 Price
SXCHSEP - STOXX Europe Christian Select 30 EUR Price
SXCHSER - STOXX Europe Christian Select 30 EUR Net Return
SEESGSEP - STOXX Europe ESG Leaders Select 30 EUR Price
SEESGSER - STOXX Europe ESG Leaders Select 30 EUR Net Return
STREMSEP - STOXX True Exposure Europe 50% Select 30 EUR Price
STREMSER - STOXX True Exposure Europe 50% Select 30 EUR Net Return
SEENVSEP - STOXX Europe ESG Environmental Leaders Select 30 EUR Price
SEGOVSEP - STOXX Europe ESG Governance Leaders Select 30 EUR Price
SESOCSEP - STOXX Europe ESG Social Leaders Select 30 EUR Price
SXXCSEP - STOXX Europe Low Carbon Select 50 Price
BDXSEX - STOXX Nordic Select 30 SEK Price
SXXSEP - STOXX Europe Select 50 EUR Price
SXXSER - STOXX Europe Select 50 EUR Net Return

SXUCSEP - STOXX USA Low Carbon Select 50 Price
SXUCSER - STOXX USA Low Carbon Select 50 Net Return

Diversification Select Indices

SXW1DSE - STOXX Global Diversification Select 100 EUR Price
SXW1DSGR - STOXX Global Diversification Select 100 EUR Gross Return
SGESGDSP - STOXX Global ESG Leaders Diversification Select 50 EUR Price
SGESGDSP - STOXX Global ESG Leaders Diversification Select 50 EUR Gross Return
SGENVDSP - STOXX Global ESG Environmental Leaders Diversification Select 30 EUR Price
SGGOVDSP - STOXX Global ESG Governance Leaders Diversification Select 30 EUR Price
SGSOCDSP - STOXX Global ESG Social Leaders Diversification Select 30 EUR Price
SXW1CDSE - STOXX Global Low Carbon Diversification Select 100 Price
EDEDSP - STOXX Emerging Markets Diversification Select 100 EUR Price
EDEDSP - STOXX Emerging Markets Diversification Select 100 EUR Gross Return
EDEDSP - STOXX Emerging Markets Diversification Select 100 USD Price

SXXDSE - EURO STOXX Diversification Select 50 EUR Price
SXXDST - EURO STOXX Diversification Select 50 EUR Net Return
SXXCDSE - EURO STOXX Low Carbon Diversification Select 50 Price
SXCHDSP - STOXX Europe Christian Diversification Select 30 EUR Price
SXCHDSR - STOXX Europe Christian Diversification Select 30 EUR Net Return
SEESGDSP - STOXX Europe ESG Leaders Diversification Select 30 EUR Price
SEESGDSP - STOXX Europe ESG Leaders Diversification Select 30 EUR Net Return
STREMDSP - STOXX True Exposure Europe 50% Diversification Select 30 EUR Price
STREMDSP - STOXX True Exposure Europe 50% Diversification Select 30 EUR Net Return
SEENVDSP - STOXX Europe ESG Environmental Leaders Diversification Select 30 EUR Price
SEGOVDSP - STOXX Europe ESG Governance Leaders Diversification Select 30 EUR Price
SESOCDSP - STOXX Europe ESG Social Leaders Diversification Select 30 EUR Price
SXXCDSP - STOXX Europe Low Carbon Diversification Select 50 Price
BDXDSX - STOXX Nordic Diversification Select 30 SEK Price
SXXDSP - STOXX Europe Diversification Select 50 EUR Price
SXXDSR - STOXX Europe Diversification Select 50 EUR Net Return
SXXDSR - STOXX Europe Diversification Select 50 EUR Gross Return

SXUCDSP - STOXX USA Low Carbon Diversification Select 50 Price

STOXX Select Indices

Low volatility screening before the dividend yield selection

Pre volatility exclusion

- » By applying a screening excluding high volatility stocks, the methodology targets those low volatility stocks generating higher returns than its higher volatilities peers
 - » And benefits from the low volatility anomaly
- » It also reduces the risk to select those stocks whose dividend yield is high as a consequence of a share price drop
 - » Since the volatility of those stocks would probably be ranked among the highest one
- » The methodology will then be built as a step by step approach excluding first high volatility then selecting top dividend payers

How to define the volatility screening

- » In order to exclude high volatility stocks, the methodology defines a threshold - a reference volatility level:
 - » Each company whose volatility is above the threshold are excluded from the base universe
- » The question comes from the nature of this threshold
 - » Should it be a fixed number (top 100)
 - » Should it be a relative number (top 20%)
 - » Should it be compared to a benchmark (below the EURO STOXX 50 volatility)
- » Those suggestions works only in different set up and do not ensure a balanced strategy; the universes range from 150 to 1800 stocks

Equal Strength Ratio (ESR) in the STOXX Select methodology

Balanced approach with a step-by-step methodology

Description

- » The ESR allows a balanced allocation of strategy resources
 - » The ratio of inclusion/exclusion is the same at each step
- » It also allows us to have one single methodology that could be applied to almost all benchmarks
- » The ESR will be calculated as
$$ESR = \sqrt{\frac{x}{N}}$$
- » Where
 - » x number of stocks in the Select index
 - » N number of stocks in the base universe

Example

- » Parent Index - STOXX Europe 600
- » Target Index - STOXX Europe Select 50
- » Assuming all 600 stocks are eligible (all data is available) and therefore compose the base universe (N)
 - » Calculation of the ESR as $\sqrt{\frac{50}{600}} \approx 29\%$
- » Exclusion of all stocks whose volatility is not among the top 29%
- » Among the 174 remaining stocks (600*29%), selection of the top 29% in terms of dividend i.e. top 50 (174*29%)

Low-correlation filter added: STOXX Diversification Select Indices

Fully achieved low-risk due to low correlation between stocks

Easy add on

- » The ESR has been defined in order to have a balanced approach with two screening (low volatility & high dividend)
 - » But can work with three steps as well
 - » The only modification to bring will be the switch from the square root to the cubic root

- » The formula becomes

$$ESR = \sqrt[3]{\frac{x}{N}}$$

- » Where
 - » x number of stocks in the Diversification Select index
 - » N number of stocks in the base universe

Example

- » Parent Index - STOXX Europe 600
- » Target Index - STOXX Europe Diversification Select 50
- » Calculation of the ESR as $\sqrt[3]{50/600} \approx 44\%$
- » Exclusion of all stocks whose correlation is not among the top 44%
- » Among the 262 remaining stocks (600*44%), selection of the top 44% in terms of volatility
- » Among the 114 remaining stocks (262*44%), selection of the top 44% in terms of dividend yield i.e. selection of the top 50

Low-correlation filter added: STOXX Diversification Select Indices

Equal Strength Ratio modification

Easy add on

- » The ESR has been defined in order to have a balanced approach with two screening (low volatility & high dividend)
 - » But can work with three steps as well
 - » The only modification to bring will be the switch from the square root to the cubic root

- » The formula becomes

$$ESR = \sqrt[3]{\frac{x}{N}}$$

- » Where
 - » x number of stocks in the Diversification Select index
 - » N number of stocks in the base universe

Example

- » Parent Index - STOXX Europe 600
- » Target Index - STOXX Europe Diversification Select 50
- » Calculation of the ESR as $\sqrt[3]{50/600} \approx 44\%$
- » Exclusion of all stocks whose correlation is not among the top 44%
- » Among the 262 remaining stocks (600*44%), selection of the top 44% in terms of volatility
- » Among the 114 remaining stocks (262*44%), selection of the top 44% in terms of dividend yield i.e. selection of the top 50

Overview

Similar balanced approaches

Select methodology

- » Different benchmarks (Global 1800, ESG, EM 1500, USA 900, JP 600, TRU indices,...)
- » Stocks whose data is not available and liquidity is too low¹⁾ are excluded from the parent index
- » All remaining stocks are ranked in ascending order in terms of volatility (max between the 3m and 12 historical volatility) and those not among the top ESR% are excluded
- » All remaining constituents are ranked in descending order in terms of historical 12m dividend yield and the top ESR% are selected
- » All constituents are weighted according to the inverse of the volatility

Diversification Select methodology

- » Built on the same benchmarks, excluding the same constituents based on liquidity and data availability
- » ESR is calculated now with the cubic root instead of the square root
- » Same volatility & dividend screenings with the addition of the correlation screening
 - » All remaining stocks are ranked in ascending order in terms correlation (average correlation with all other constituents of the base universe) and those not among the top x%¹⁾ are excluded
- » Same weighting scheme

An extension to low volatility & high dividend – the correlation dimension

Diversification brought to the smart beta world

Design

- » A new screening will be added to exclude from the base universe the stocks that are highly correlated
- » The aim is to diversify the risk, lower the drawdown and the overall volatility
- » Low volatility and high dividend screenings usually tilt the composition to specific sectors (e.g. Financials) or region (e.g. UK).
- » The low correlation screening, on top of the low volatility one, will reduce the risk and allow stronger exposure to the target stocks



Key client benefits

- » For each stocks of the base universe, a correlation number will be calculated as
 - » The average correlation of the stocks with all other constituents of the base universe
 - » Calculated on daily log returns in the currency of the final index
 - » Over 12 months
- » Once this number is calculated, the strategy will be able to pick up those stocks whose average correlation is the lowest towards other security of the base universe, even if those are from the industry or the same country

Equal Strength Ratio (ESR) in the STOXX Low Carbon Select methodology

Balanced approach to a step by step methodology

Description

- » The ESR allows a balanced allocation of strategy resources
 - » The ratio of inclusion/exclusion is the same at each step
- » It also allows us to have one single methodology that could be applied to almost all benchmarks

- » The ESR will be calculated as

$$ESR = \sqrt[3]{\frac{x}{N}}$$

- » Where
 - » x number of stocks in the Select index
 - » N number of stocks in the base universe

Example

- » Parent Index: STOXX Global 1800
- » Target Index: STOXX Global Low Carbon Select 100
- » Assuming all 1800 stocks are eligible (all data is available), and are therefore part of the base universe (N)

- » Calculation of the ESR as $\sqrt[3]{\frac{100}{1800}} \approx 38\%$

- » For each of the 10 ICB industries, exclusion of all stocks whose Carbon Intensity¹⁾ is not among the top 38% within the respective ICB industry
- » Among the 686 remaining stocks (round down of 1800*38%), exclusion of all stocks whose volatility is not among the top 38%
- » Among the 261 remaining stocks, selection of the top 38% in terms of dividend i.e. selection of the top 100

Addition of the correlation dimension to the Low Carbon Select strategy – STOXX Low Carbon Diversification Select Indices

Equal Strength Ratio modification

Easy add on

- » The ESR has been defined to have a balanced approach with a 3-step screening process (carbon screening, low volatility & high dividend)
 - » But can work with four steps as well
 - » The only modification will be the change from cubic root to the fourth root

- » The formula becomes


$$ESR = \sqrt[4]{\frac{x}{N}}$$

- » Where
 - » x number of stocks in the Diversification Select index
 - » N number of stocks in the base universe

Example

- » Parent Index: STOXX Global 1800
- » Target Index: STOXX Global Low Carbon Diversification Select 100
 - » Calculation of the ESR as $\sqrt[4]{\frac{100}{1800}} \approx 48\%$
- » For each of the 10 ICB industries, exclusion of all stocks whose Carbon Intensity¹⁾ is not among the top 48% within the respective ICB industry
- » Among the 873 remaining stocks (round down of $1800 \cdot 48\%$), selection of the top 48% in terms of correlation
- » Among the 423 remaining stocks, exclusion of all stocks whose volatility is not among the top 48%
- » Among the 205 remaining stocks, selection of the top 48% in terms of dividend yield i.e. selection of the top 100

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