

STOXX



STOXX® ESG Impact Indices

A smarter way to increase sustainability

February 2018



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02

Introduction

STOXX ESG Impact Indices are designed to have an impact on three dimensions

1. Increase sustainability

- Impact, i.e. increase, the exposure to ESG-related indicators of the resulting index relative to that of the benchmark

2. Decrease risk on constituent level

- Change in risk-characteristics of the index by focusing on those KPIs that tend to have a risk-reducing impact on a single stock level

3. Market impact

- As part of the entirety of ESG-related investments, they aim at incentivizing companies to improve their business practices in order to comply with international standards and to be considered for index inclusion



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Index methodology

STOXX ESG Impact indices aim at increasing sustainability while keeping benchmark characteristics

Universe

- The universe is defined by the STOXX Global 1800 (STOXX Global ESG Impact) and US companies within the STOXX Global 1800 (STOXX USA ESG Impact)¹⁾

Selection

- Standardization of each KPI within each ICB industry. The five standardized KPIs are then aggregated to a single score. Hereby, each KPI is weighted based on coefficients of a regression analysis²⁾

ESG KPI	Weight Factor
CDP emissions/energy reduction target (binary)	0.40
% of independent board members	0.05
% women on the board	0.30
Policy against child labor (binary)	0.40
Golden parachute agreement (binary)	-0.30

- Companies are then ranked according to the aggregated score and the top 50% are selected

Weighting

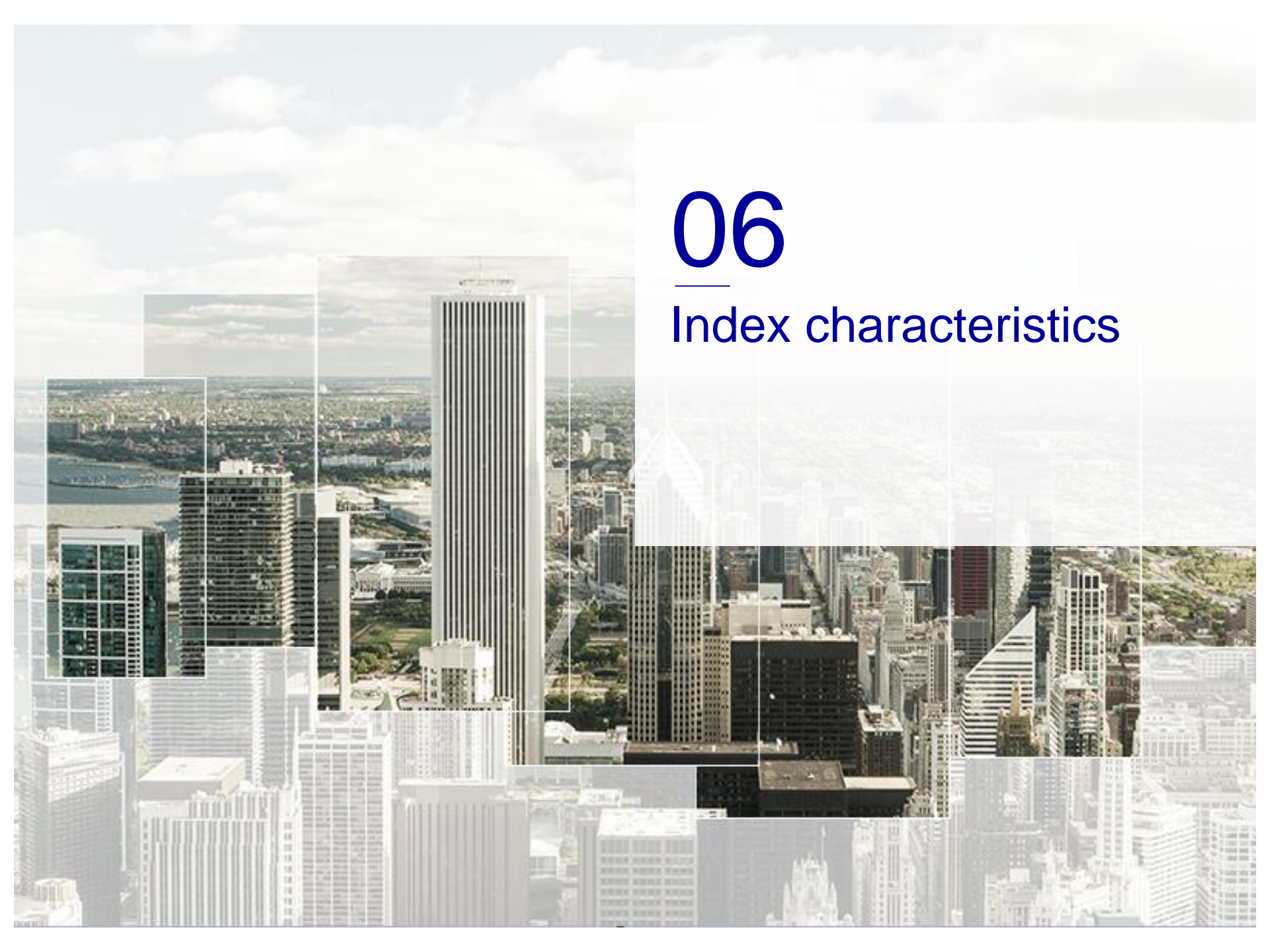
- The remaining companies are weighted based on the product of free-float market cap and a KPI-based tilt-factor. The tilt factor ranges from 0.5 to 1.5 in 0.25 increments. E.g. the 20% of companies with the lowest aggregated ESG score are given a tilt-factor of 0.5 while the 20% with the highest score are given a tilt-factor of 1.5

1) Companies which do not adhere to the UN Global Compact Principles are excluded

2) The regression analyses hereby used each company's standard deviation as dependent variable and a broad selection of ESG-related KPIs as independent variables, while controlling for size, industry, country and time fixed effects

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Index characteristics



The selection and weighting methodology is found to have the desired impact on all five KPIs

Weighted averages of ESG KPIs

Weighted averages of ESG scores

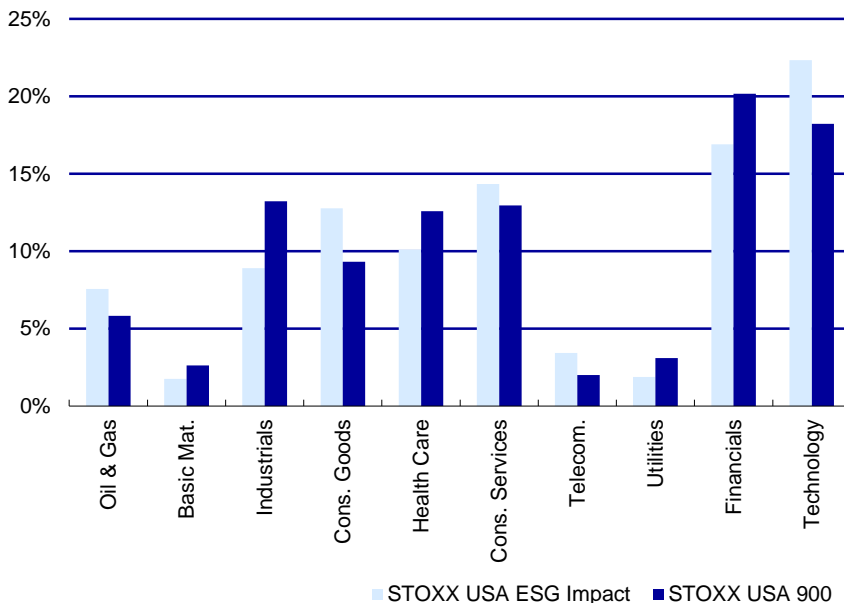
	STX USA ESG impact	Bench- mark ¹⁾	% change	STX Gl. ESG Impact	Bench- mark ¹⁾	% change
CDP em./en. reduction target	0.90	0.83	9%	0.93	0.85	10%
% of independent directors	86.34	85.14	1%	77.29	74.80	3%
% of women of the board	24.86	21.73	14%	24.47	21.10	16%
Policy against child labor	0.78	0.55	42%	0.83	0.56	50%
Golden parachute agreement	0.54	0.70	-23%	0.40	0.53	-24%

- In every case, the weighted averages of ESG scores are tilted into the desired direction
- The binary variable “existence of a policy against child labor” has hereby been increased the most with a relative increase of 50% in the STOXX Global ESG Impact index and 42% for the STOXX USA ESG Impact index

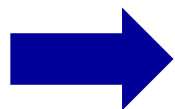
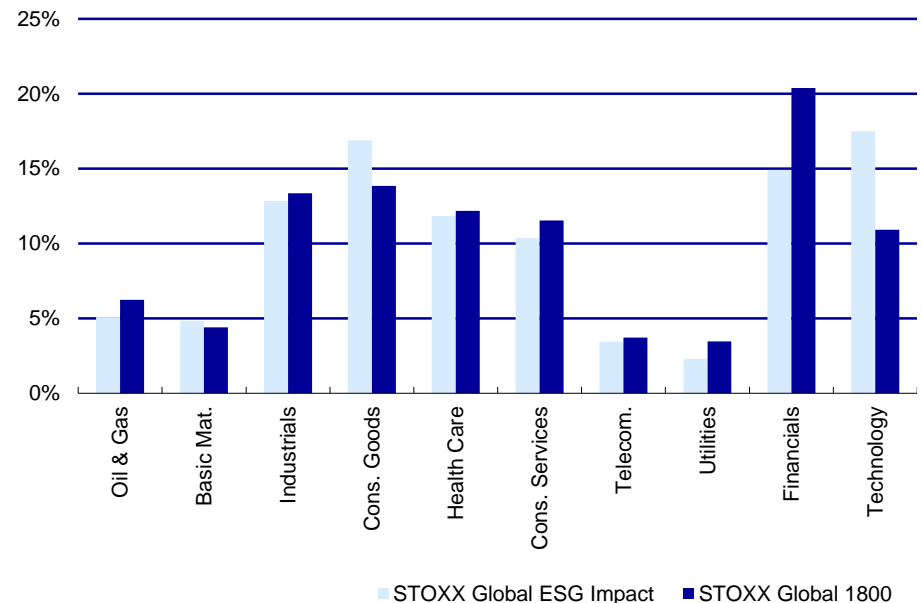
1) The benchmark (BM) for the STOXX Global ESG Impact index is the STOXX Global 1800, the BM for the STOXX USA Impact index are US companies within the STOXX Global 1800

Industry allocations of ESG Impact indices are similar to those of benchmarks

STOXX USA ESG Impact and STOXX USA 900¹⁾



STOXX Global ESG Impact and STOXX Global 1800¹⁾

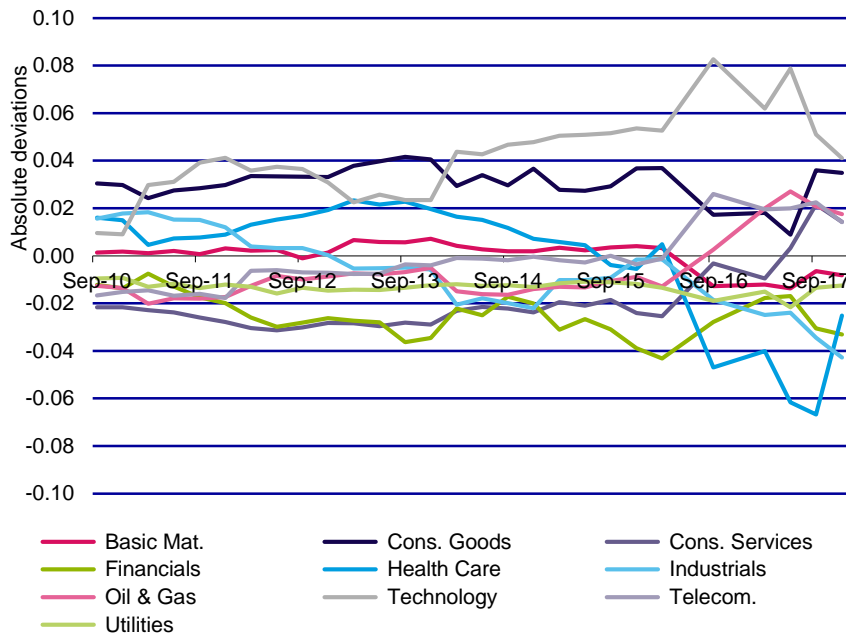


- Industry deviations relative to benchmarks are quite similar for the two regions with the Technology sector having the highest deviation of about five percentage points
- Technology and Consumer Goods are slightly over-weighted while most of the remaining industries are slightly underweighted

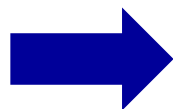
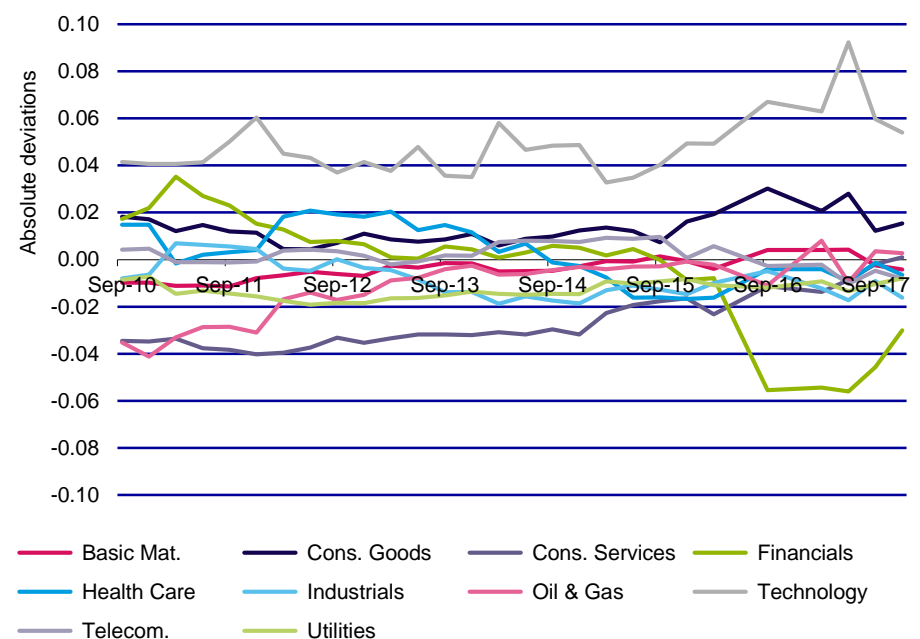
1) Data as of Feb 08, 2018

Deviation in industry allocations are found to be quite stable over time

STOXX USA ESG Impact vs. STOXX USA 900



STOXX Global ESG Impact vs. STOXX Global 1800

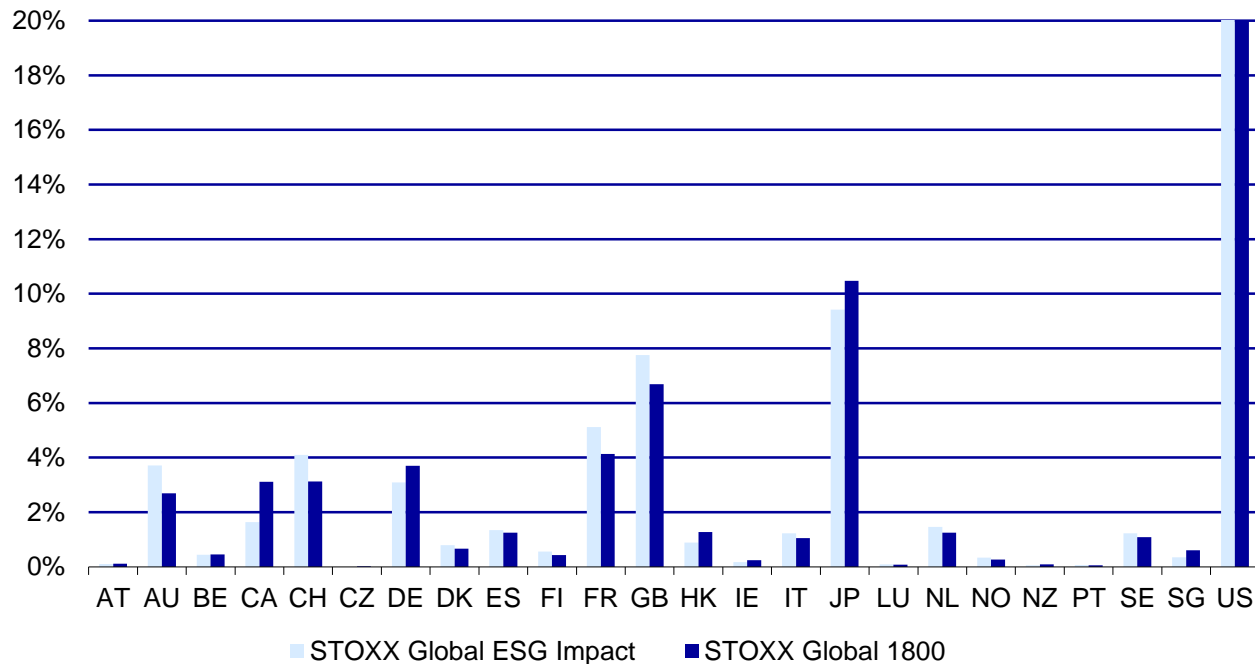


Deviations in industry allocation between STOXX ESG Impact indices and benchmarks are quite stable over time

1) Historical data from Sep. 2010 - Dec. 2017

Due to constraint on country deviations, STOXX ESG Impact show country allocation similar to that of benchmark

STOXX Global ESG Impact and STOXX Global 1800 ¹⁾



- The country allocation of the STOXX Global ESG Impact Index is very close to that of the benchmark
- The similar country allocation is due to the definition of max. allowed deviation of just 1%
- The USA accounts for approx. 56.1% of overall allocation, followed by Japan and the UK with 9.42% and 7.75% respectively

1) Industry allocation based on Feb. 08, 2018

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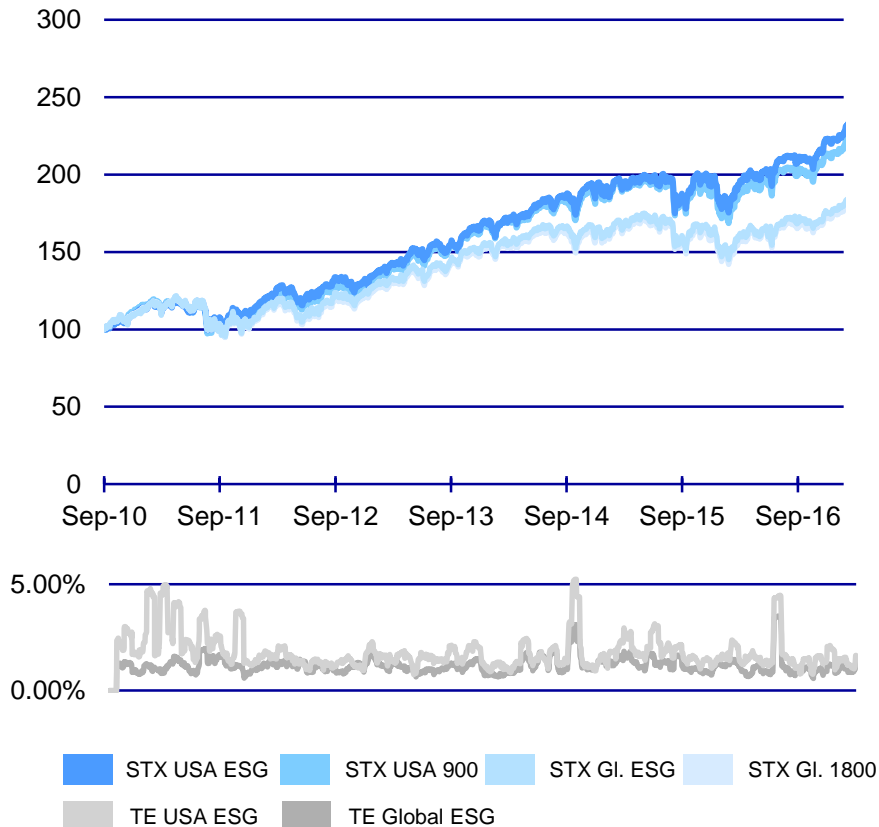
Risk and return analysis



Over the time period observed, STOXX ESG Impact slightly outperformed their benchmarks

Performance and volatility analysis

Index Performance¹⁾



Risk and return characteristics¹⁾

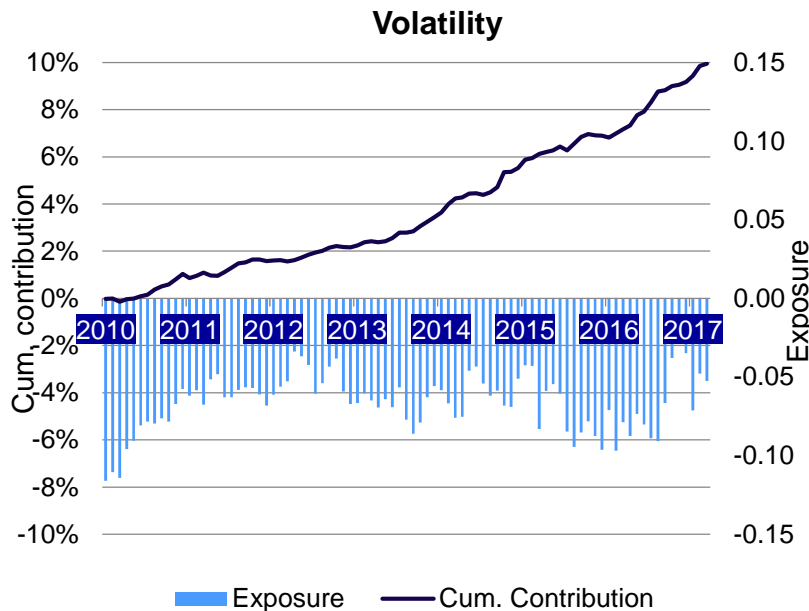
	STOXX USA ESG Impact	STOXX USA 900	STOXX Global ESG Impact	STOXX Global 1800
Return (Overall)	13.7%	13.1%	10.7%	10.3%
Return 1y (ann.)	14.0%	13.9%	17.2%	16.2%
Return 3y (ann.)	10.4%	9.1%	8.5%	8.1%
Return 5y (ann.)	13.2%	12.7%	10.2%	10.0%
Volatility (Overall)	14.1%	14.4%	13.2%	12.9%
Volatility 1y (ann.)	9.6%	9.3%	7.6%	7.3%
Volatility 3y (ann.)	12.6%	12.6%	11.4%	11.2%
Volatility 5y (ann.)	12.2%	12.3%	10.8%	10.6%
SR (Overall)	0.96	0.90	0.81	0.80
SR 1y	1.30	1.33	1.99	1.93
SR 3y	0.80	0.71	0.73	0.71
SR 5y	1.05	1.01	0.92	0.91
Max. Drawdown	17.7%	21.3%	21.7%	22.0%

1) STOXX data as of Feb. 08, 2018. Annualized USD Net returns and annualized volatility (standard deviation) figures are used

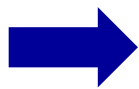
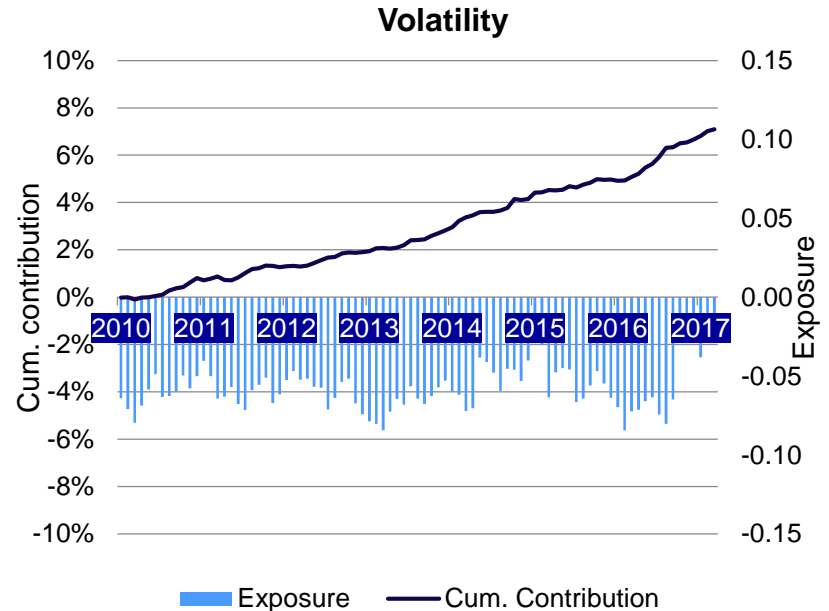
Negative exposure to volatility translates into positive excess returns

Exposure to volatility factor and resulting excess returns

STOXX USA ESG Impact vs. BM¹⁾²⁾



STOXX Global ESG Impact vs. BM¹⁾²⁾



Both indices, the STOXX Global ESG impact index and the STOXX USA Impact index are significantly negatively exposed to volatility. This translates into positive excess returns

1) Time period : Oct. 2010 – Dec 2017. Currency: USD

2) The benchmark (BM) for the STOXX Global ESG Impact index is the STOXX Global 1800, the BM for the STOXX USA Impact index are US companies within the STOXX Global 1800

The factor attribution of the STOXX USA ESG Impact index indicates that the volatility factor adds positively to ex. returns

Summary

Factor attribution of excess returns [2010-2017]¹⁾²⁾

Source of Return	Contribution	Risk	IR	T-Stat
Portfolio	15.05%	10.73%		
Benchmark	14.75%	10.74%		
Active	0.30%	1.51%	0.20	0.54
Specific Return	-0.32%	1.20%	-0.26	-0.71
Factor Contribution	0.62%	0.81%	0.76	2.05
Style	0.45%	0.58%	0.78	2.10
Exchange Rate Sensitivity	0.01%	0.04%	0.22	0.59
Growth	-0.04%	0.06%	-0.66	-1.78
Leverage	0.01%	0.03%	0.33	0.90
Liquidity	0.03%	0.16%	0.16	0.43
Medium-Term Momentum	-0.13%	0.14%	-0.92	-2.47
Short-Term Momentum	-0.01%	0.19%	-0.07	-0.19
Size	-0.04%	0.45%	-0.09	-0.24
Value	0.06%	0.08%	0.71	1.91
Volatility	0.58%	0.32%	1.79	4.83
Country	0.00%	0.01%	0.17	0.47
Industry	0.18%	0.48%	0.37	0.99
Currency	0.00%	0.01%	-0.05	-0.14
Market	-0.01%	0.02%	-0.92	-2.47
Sectors	0.18%	0.48%	0.37	0.99



With 0.58%, the volatility factor is found to be the most significant contributor to excess return

1) Time period : Oct. 2010 – Dec. 2017. Currency: USD

2) The benchmark (BM) for the STOXX USA Impact index are the US companies within the STOXX Global 1800

The factor attribution of the STOXX GI. ESG Impact index indicates that the volatility factor adds positively to ex. returns

Summary

Factor attribution of excess returns [2010-2017]¹⁾²⁾

Source of Return	Contribution	Risk	IR	T-Stat
Portfolio	11.70%	11.89%		
Benchmark	11.19%	11.69%		
Active	0.50%	1.08%	0.46	1.24
Specific Return	-0.24%	0.78%	-0.30	-0.81
Factor Contribution	0.74%	0.77%	0.96	2.59
Style	0.40%	0.51%	0.80	2.16
Exchange Rate Sensitivity	0.00%	0.02%	0.00	-0.01
Growth	-0.01%	0.04%	-0.34	-0.93
Leverage	0.01%	0.02%	0.56	1.50
Liquidity	0.01%	0.11%	0.10	0.28
Medium-Term Momentum	-0.01%	0.09%	-0.12	-0.32
Short-Term Momentum	-0.06%	0.15%	-0.36	-0.98
Size	-0.04%	0.41%	-0.09	-0.25
Value	0.00%	0.02%	0.06	0.17
Volatility	0.50%	0.27%	1.82	4.90
Country	0.09%	0.27%	0.34	0.91
Industry	0.28%	0.38%	0.74	1.99
Currency	-0.03%	0.27%	-0.11	-0.29
Market	-0.01%	0.02%	-0.66	-1.78
Sectors	0.28%	0.38%	0.74	1.99



With 0.50%, the volatility factor is found to be the most significant contributor to excess return

1) Time period : Oct. 2010 – Dec. 2017. Currency: USD

2) The benchmark (BM) for the STOXX Global ESG Impact index is the STOXX Global 1800

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