MINIMUM VARIANCE

STOXX® GLOBAL 1800 EX JAPAN MINIMUM VARIANCE UNCONSTRAINED INDEX

Index description

The STOXX Global 1800 ex Japan Minimum Variance Unconstrained index weights the components of the underlying STOXX Global 1800 ex Japan index so that portfolio variance is minimized. STOXX uses Axioma's factor model for the optimization process. The Unconstrained version applies loosely stated constraints to seek an improved risk profile. It targets investors seeking a more optimal portfolio in terms of replicated volatility.

Key facts

»Minimized volatility is suitable for risk-averse investors. At the same time, the return of the index is higher than the benchmark.

»Suitable as a liquid underlying for ETFs and structured products. It is easy to replicate as it has fewer components than the underlying Index. It also has predictable rebalancing dates and is optimized to allow tracking (low turnover, transaction costs analysis, etc.).

»Capping constraints are applied in accordance with the Undertakings for Collective Investment in Transferable Securities (UCITS) directive to ensure that funds can easily track the index.
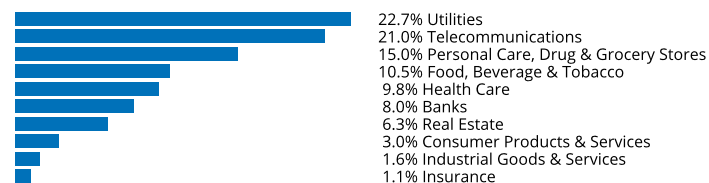
»Two versions - Constrained and Unconstrained - cater to different investor needs.

»The Unconstrained version offers a first-of-its-kind index for a true minimum variance mandate.
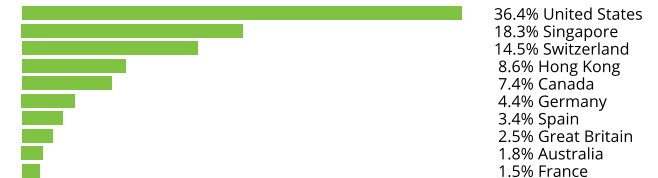
Descriptive statistics

Index	Market cap (EUR bn.)		Components (EUR bn.)				Component weight (%)		Turnover (%)
	Full	Free-float	Mean	Median	Largest	Smallest	Largest	Smallest	Last 12 months
STOXX Global 1800 ex Japan Minimum Variance Unconstrained Index	N/A	96.4	0.8	0.2	7.8	0.0	8.1	0.0	59.9
STOXX Global 1800 ex Japan Index	51,275.3	46,722.7	33.4	12.2	2,490.5	0.4	5.3	0.0	3.2

Supersector weighting (top 10)

22.7% Utilities
21.0% Telecommunications
15.0% Personal Care, Drug & Grocery Stores
10.5% Food, Beverage & Tobacco
9.8% Health Care
8.0% Banks
6.3% Real Estate
3.0% Consumer Products & Services
1.6% Industrial Goods & Services
1.1% Insurance

Country weighting

36.4% United States
18.3% Singapore
14.5% Switzerland
8.6% Hong Kong
7.4% Canada
4.4% Germany
3.4% Spain
2.5% Great Britain
1.8% Australia
1.5% France

Risk and return figures[1]

Index returns			Return (%)					Annualized return (%)		
	Last month	YTD	1Y	3Y	5Y	Last month	YTD	1Y	3Y	5Y
STOXX Global 1800 ex Japan Minimum Variance Unconstrained Index	-2.6	-0.3	-5.5	21.7	40.7	N/A	N/A	-5.5	6.8	7.1
STOXX Global 1800 ex Japan Index	2.2	8.6	2.9	45.2	66.2	N/A	N/A	2.9	13.4	10.8
Index volatility and risk			Annualized volatility (%)					Annualized Sharpe ratio[2]		
STOXX Global 1800 ex Japan Minimum Variance Unconstrained Index	6.3	9.5	10.8	10.2	14.7	N/A	N/A	-0.7	0.6	0.5
STOXX Global 1800 ex Japan Index	12.0	13.2	17.1	16.1	19.0	N/A	N/A	0.1	0.8	0.5
Index to benchmark			Correlation					Tracking error (%)		
STOXX Global 1800 ex Japan Minimum Variance Unconstrained Index	0.3	0.5	0.6	0.6	0.8	12.0	11.9	13.7	12.3	11.9
Index to benchmark			Beta					Annualized information ratio		
STOXX Global 1800 ex Japan Minimum Variance Unconstrained Index	0.2	0.4	0.4	0.4	0.6	-4.6	-1.8	-0.8	-0.6	-0.4

[1] For information on data calculation, please refer to STOXX calculation reference guide.
[2] Based on EURIBOR1M

(EUR, gross return), all data as of May 31, 2023

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Fundamentals (for last 12 months)

Index	Price/earnings incl. negative		Price/earnings excl. negative		Price/ book	Dividend yield (%) [3]	Price/ sales	Price/ cash flow
	Trailing	Projected	Trailing	Projected	Trailing	Trailing	Trailing	Trailing
STOXX Global 1800 ex Japan Minimum Variance Unconstrained Index	17.7	15.8	17.6	15.8	1.8	3.2	2.1	2.1
STOXX Global 1800 ex Japan Index	23.3	17.5	19.1	17.2	0.1	2.2	2.0	5.7

Performance and annual returns[4]
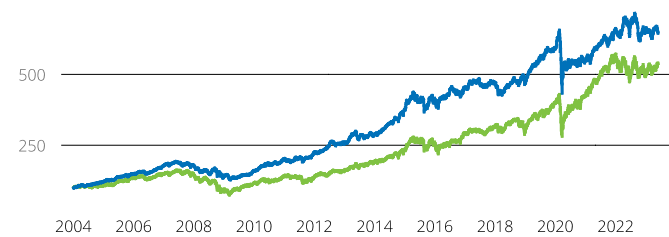
— STOXX® Global 1800 ex Japan Minimum Variance Unconstrained Index

— STOXX® Global 1800 ex Japan Index
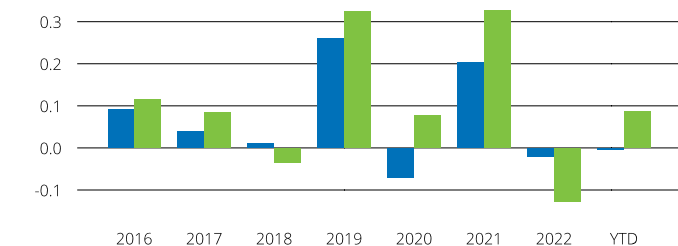
■ STOXX® Global 1800 ex Japan Minimum Variance Unconstrained Index

■ STOXX® Global 1800 ex Japan Index

Methodology

On the basis of the underlying index, a covariance matrix is set up by determining the correlation between each component and specific factors. Using Axioma's factor model, the variance-covariance structure of the components is determined, which is then minimized with respect to applicable constraints. The constraints applied cover individual capping, effective number of assets, rebalancing and turnover. The full list of factors including the requirements to be met can be accessed in our Index rulebook: http://www.stoxx.com/indices/rulebooks.html

Versions and symbols

Index		ISIN	Symbol	Bloomberg	Reuters
Gross Return	EUR	CH0225579900	SGXEUNG		.SGXEUNG
Gross Return	EUR	CH0225579900	SGXEUNG		.SGXEUNG
Net Return	EUR	CH0225579959	SGXEUNN		.SGXEUNN
Net Return	EUR	CH0225579959	SGXEUNN		.SGXEUNN
Price	EUR	CH0224472131	SGXEUNP		.SGXEUNP
Price	EUR	CH0224472131	SGXEUNP		.SGXEUNP
Gross Return	JPY	CH0224473212	SGXYUNG	SGXYUNG INDEX	.SGXYUNG
Gross Return	JPY	CH0224473212	SGXYUNG	SGXYUNG INDEX	.SGXYUNG
Net Return	JPY	CH0224473246	SGXYUNN		.SGXYUNN
Net Return	JPY	CH0224473246	SGXYUNN		.SGXYUNN

Complete list available here: www.stoxx.com/data/vendor_codes.html

Quick facts

Weighting	Optimization
Cap factor	4.5% / 8% / 35%
No. of components	Variable
Review frequency	Monthly

To learn more about the inception date, the currency, the calculation hours and historical values, please see our data vendor code sheet.

BACKTESTED PERFORMANCE
This document contains index performance data based on backtesting, i.e. calculations of how the index might have performed prior to launch if it had existed using the same index methodology and based on historical constituents. Backtested performance information is purely hypothetical and is provided in this document solely for information purposes. Backtested performance does not represent actual performance and should not be interpreted as an indication of actual performance.

CUSTOMIZATION
The index can be used as a basis for the definition of STOXX® Customized Indices, which can be tailored to specific client or mandate needs. STOXX offers a wide range of customization, in terms of component selection, weighting schemes and personalized calculation methodologies.

[3] gr. div. yield is calculated as gr. return index return minus price index return
[4] STOXX data from Jan. 02, 2004 to May 31, 2023

(EUR, gross return), all data as of May 31, 2023

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Top 10 Components[5]

Company	Supersector	Country	Weight (%)
Singapore Telecommunications L	Telecommunications	Singapore	8.12
Church & Dwight Co.	Personal Care, Drug & Grocery Stores	United States	5.08
SWISSCOM	Telecommunications	Switzerland	4.56
Oversea-Chinese Banking Corp.	Banks	Singapore	4.50
IBERDROLA	Utilities	Spain	3.27
BCE Inc.	Telecommunications	Canada	3.21
Fortis Inc.	Utilities	Canada	3.05
NESTLE	Food, Beverage & Tobacco	Switzerland	3.05
HENKEL PREF	Consumer Products & Services	Germany	2.97
Link Real Estate Investment Tr	Real Estate	Hong Kong	2.34

[5] Based on the composition as of May 31, 2023