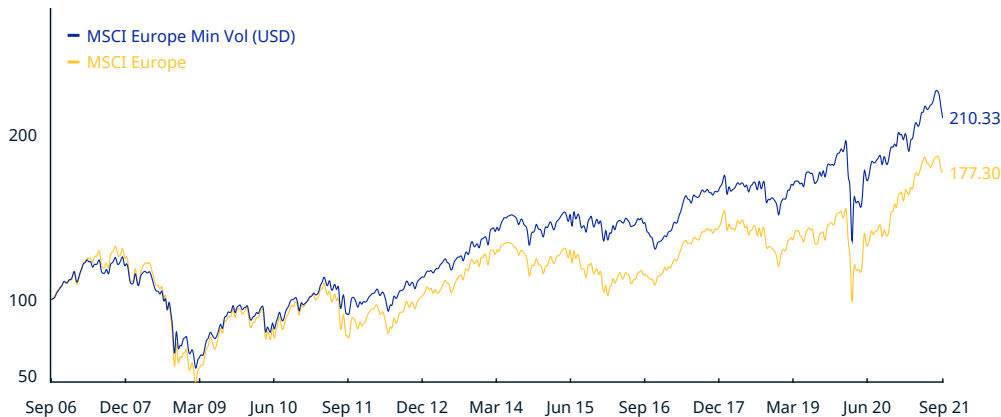


# MSCI Europe Minimum Volatility (USD) Index (USD)

The MSCI Europe Minimum Volatility (USD) Index aims to reflect the performance characteristics of a minimum variance strategy applied to the large and mid cap equity universe across the European Developed Markets (DM) countries\*. The index is calculated by optimizing the MSCI Europe Index, its parent index, in USD for the lowest absolute risk (within a given set of constraints). Historically, the index has shown lower beta and volatility characteristics relative to the MSCI Europe Index.

## CUMULATIVE INDEX PERFORMANCE – NET RETURNS (USD) (SEP 2006 – SEP 2021)



## ANNUAL PERFORMANCE (%)

Year	MSCI Europe Min Vol (USD)	MSCI Europe
2020	5.06	5.38
2019	22.09	23.77
2018	-7.92	-14.86
2017	22.94	25.51
2016	-6.86	-0.40
2015	4.36	-2.84
2014	1.69	-6.18
2013	22.66	25.23
2012	14.51	19.12
2011	1.12	-11.06
2010	2.73	3.88
2009	24.44	35.83
2008	-37.64	-46.42
2007	9.64	13.86

## INDEX PERFORMANCE – NET RETURNS (%) (SEP 30, 2021)

	1 Mo	3 Mo	1 Yr	YTD	ANNUALIZED				Since Nov 30, 2001	Div Yld (%)	P/E	P/E Fwd	P/BV
					3 Yr	5 Yr	10 Yr	Since Nov 30, 2001					
MSCI Europe Min Vol (USD)	-6.57	-1.62	14.99	5.82	7.35	7.48	8.30	8.51	2.66	20.34	19.30	2.62	
MSCI Europe	-4.78	-1.55	27.25	10.07	7.81	8.85	8.15	6.14	2.56	18.45	15.13	2.10	

## FUNDAMENTALS (SEP 30, 2021)

## INDEX RISK AND RETURN CHARACTERISTICS (NOV 30, 2001 – SEP 30, 2021)

	Beta	Tracking Error (%)	Turnover (%) <sup>1</sup>	ANNUALIZED STD DEV (%) <sup>2</sup>			SHARPE RATIO <sup>2,3</sup>			Since Nov 30, 2001	MAXIMUM DRAWDOWN	
				3 Yr	5 Yr	10 Yr	3 Yr	5 Yr	10 Yr		(%)	Period YYYY-MM-DD
MSCI Europe Min Vol (USD)	0.75	6.30	20.00	14.88	13.13	12.54	0.47	0.52	0.64	0.54	54.73	2007-10-31–2009-03-09
MSCI Europe	1.00	0.00	1.93	19.35	16.27	15.79	0.42	0.53	0.53	0.34	62.99	2007-10-31–2009-03-09

<sup>1</sup> Last 12 months

<sup>2</sup> Based on monthly net returns data

<sup>3</sup> Based on ICE LIBOR 1M

\* DM countries in Europe include: Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the UK.

The MSCI Europe Minimum Volatility (USD) Index was launched on Nov 30, 2009. Data prior to the launch date is back-tested data (i.e. calculations of how the index might have performed over that time period had the index existed). There are frequently material differences between back-tested performance and actual results. Past performance – whether actual or back-tested – is no indication or guarantee of future performance.

### INDEX CHARACTERISTICS

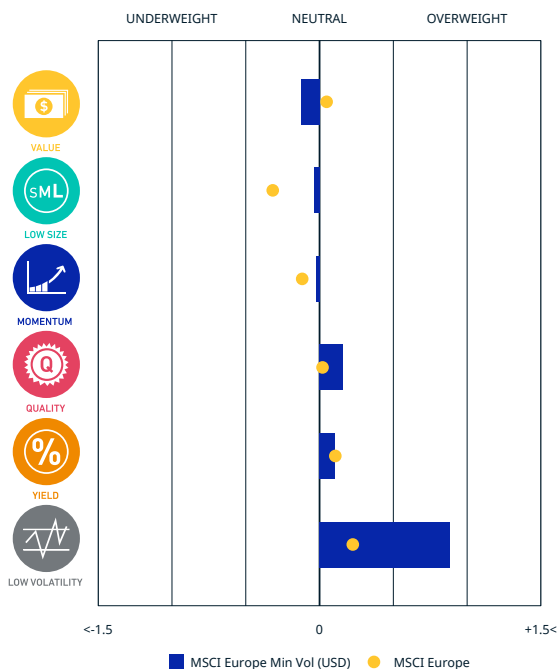
	MSCI Europe Min Vol (USD)	MSCI Europe
<b>Number of Constituents</b>	162	432
	Weight (%)	
<b>Largest</b>	1.82	3.23
<b>Smallest</b>	0.02	0.02
<b>Average</b>	0.62	0.23
<b>Median</b>	0.51	0.12

### TOP 10 CONSTITUENTS

	Country	Index Wt. (%)	Parent Index Wt. (%)	Sector
NOVO NORDISK B	DK	1.82	1.51	Health Care
HERMES INTERNATIONAL	FR	1.63	0.41	Cons Discr
MERCK KGAA STAMM	DE	1.60	0.26	Health Care
GIVAUDAN	CH	1.55	0.39	Materials
ROCHE HOLDING GENUSS	CH	1.52	2.39	Health Care
GROUPE BRUXELLES LAMBERT	BE	1.49	0.12	Financials
COLOPLAST B	DK	1.46	0.17	Health Care
DEUTSCHE TELEKOM	DE	1.46	0.62	Comm Svcs
KUEHNE & NAGEL INTL	CH	1.41	0.17	Industrials
NOVARTIS	CH	1.41	1.70	Health Care
<b>Total</b>		<b>15.35</b>	<b>7.75</b>	

### FACTORS - KEY EXPOSURES THAT DRIVE RISK AND RETURN

#### MSCI FACTOR BOX



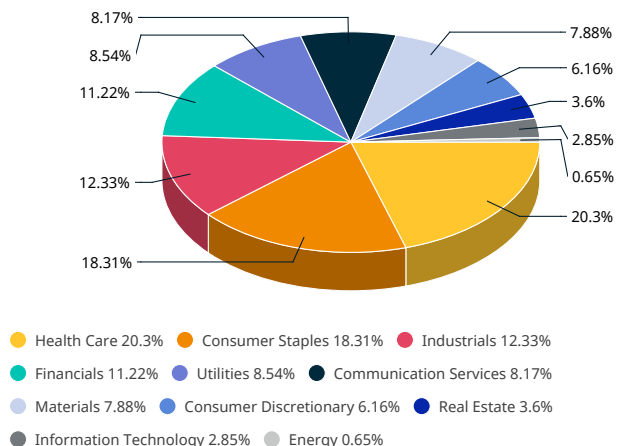
#### MSCI FaCS

- VALUE**  
Relatively Inexpensive Stocks
- LOW SIZE**  
Smaller Companies
- MOMENTUM**  
Rising Stocks
- QUALITY**  
Sound Balance Sheet Stocks
- YIELD**  
Cash Flow Paid Out
- LOW VOLATILITY**  
Lower Risk Stocks

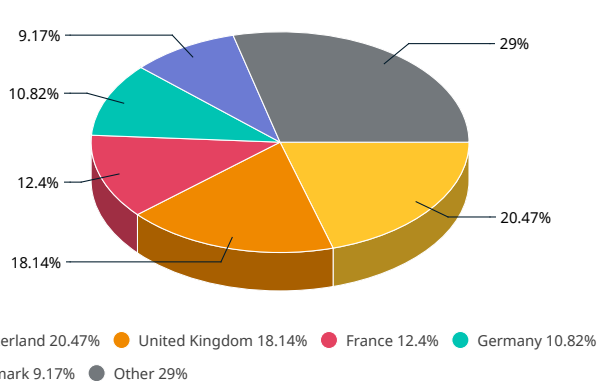
MSCI FaCS provides absolute factor exposures relative to a broad global index - MSCI ACWI IMI.

Neutral factor exposure (FaCS = 0) represents MSCI ACWI IMI.

### SECTOR WEIGHTS



### COUNTRY WEIGHTS



## INDEX METHODOLOGY

The [MSCI Minimum Volatility Indexes](#) are designed to provide the lowest return variance for a given covariance matrix of stock returns. Each MSCI Minimum Volatility Index is calculated using Barra Optimizer to optimize a given MSCI parent index for the lowest absolute volatility with a certain set of constraints. These constraints help maintain index replicability and investability and include index turnover limits, for example, along with minimum and maximum constituent, sector and/or country weights relative to the parent index. Each Minimum Volatility Index is rebalanced (or is re-optimized) semi-annually in May and November. Indexes may also be optimized for various currencies.

## FACTOR BOX AND FaCS METHODOLOGY

MSCI FaCS is a standard method ([MSCI FaCS Methodology](#)) for evaluating and reporting the Factor characteristics of equity portfolios. MSCI FaCS consists of Factor Groups (e.g. Value, Size, Momentum, Quality, Yield, and Volatility) that have been extensively documented in academic literature and validated by MSCI Research as key drivers of risk and return in equity portfolios. These Factor Groups are constructed by aggregating 16 factors (e.g. Book-to-Price, Earnings/Dividend Yields, LT Reversal, Leverage, Earnings Variability/Quality, Beta) from the latest Barra global equity factor risk model, GEMLT, designed to make fund comparisons transparent and intuitive for use. The MSCI Factor Box, which is powered by MSCI FaCS, provides a visualization designed to easily compare absolute exposures of funds/indexes and their benchmarks along 6 Factor Groups that have historically demonstrated excess market returns over the long run.

## ABOUT MSCI

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