

Euro Low Volatility Index

Comparison: Flexible and Fast Road to Portfolio Protection

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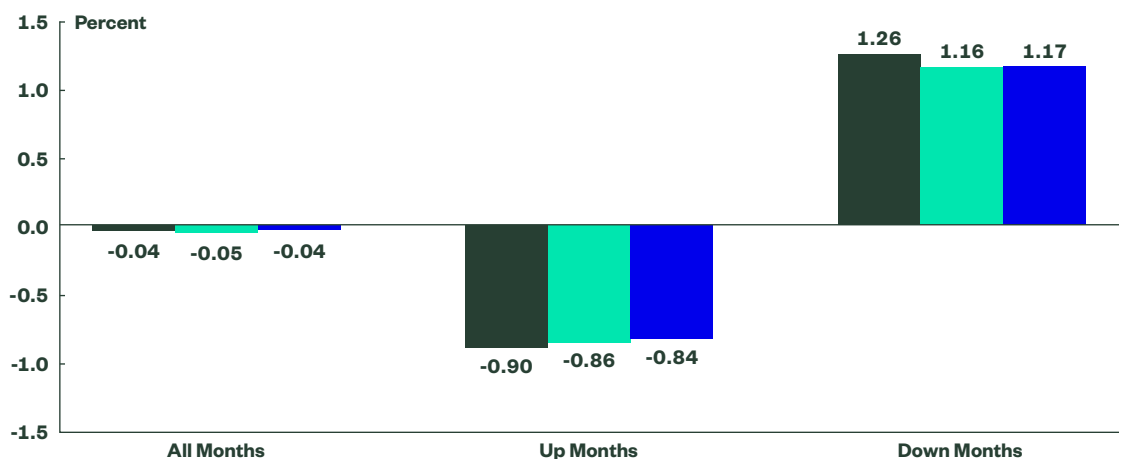
- Contrary to popular belief, low volatility strategies have achieved a higher level of volatility reduction than minimum volatility (or minimum variance) strategies.
- Low volatility's more regular rebalancing frequency can often react faster to prevailing market events.
- SPDR® ETFs offer a suite of low volatility strategies that follow a simple, yet effective methodology.

Low (or minimum) volatility index strategies have regularly attracted investors seeking to take long equity positions with lower historical risk. While many indices seek to target lower risk, less volatile stocks, SPDR ETFs offer a suite of low volatility strategies that follow a simple and yet effective methodology.

In this note, we take a look at the key distinctions between *Low Volatility* and *Minimum Volatility/Variance* index strategies.

Figure 1
Average Excess Returns of Volatility Strategies in Up and Down Markets
(Since Inception)

■ EURO STOXX® Low Risk Weighted 100 Index
■ MSCI EMU Minimum Volatility Index
■ MSCI EMU Select Dynamic Risk Weighted Index



Source: Bloomberg Finance L.P., as of 30 July 2021. The EURO STOXX® Low Risk Weighted 100 Index was inceptioned on 4 October 2012. Index performance is based on net total return in EUR. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Past performance is no guarantee of future results. It is not possible to invest directly into an index. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income as applicable.

Targeting Less Volatile Stocks Effectively

Research offered by Michael Jensen (1972) posed a considerable challenge to the capital asset pricing model (CAPM), which originally suggested a positive relationship between risk and return. Jensen's work, and subsequent empirical studies, demonstrated how lower volatility stocks have historically generated higher risk-adjusted returns.¹ This well-documented phenomenon, dating back to the 1970s, is referred to as the 'low volatility anomaly'.

As a result, many investment strategies have been constructed to capture this observable market behaviour, through investable indices. When constructing factor-based strategies, it is important that investors understand the index methodology. Construction variation can often produce a wide array of outcomes. The most common strategies, used by ETFs, for harvesting the return opportunity presented by the low volatility anomaly are *Low Volatility* and optimised *Minimum Volatility/Variance*.

Low Volatility follows a process of selecting a portfolio of the least volatile stocks.² The EURO STOXX® Low Risk Weighted 100 Index accomplishes this goal by selecting the 100 least volatile stocks in the EURO STOXX® Index. The portfolio then rebalances quarterly so that it can react quickly to prevailing market conditions, thus helping investors to continuously target the lowest volatility stocks.

Optimised Minimum Volatility (Variance) strategies are more complex than Low Volatility. Minimum Volatility strategies often use more constraints that limit allocation and portfolio turnover, while also considering the variation correlation of constituent securities.

Figure 2
Main Index Methodologies
Targeting Less Volatile
Stocks in Eurozone Equities

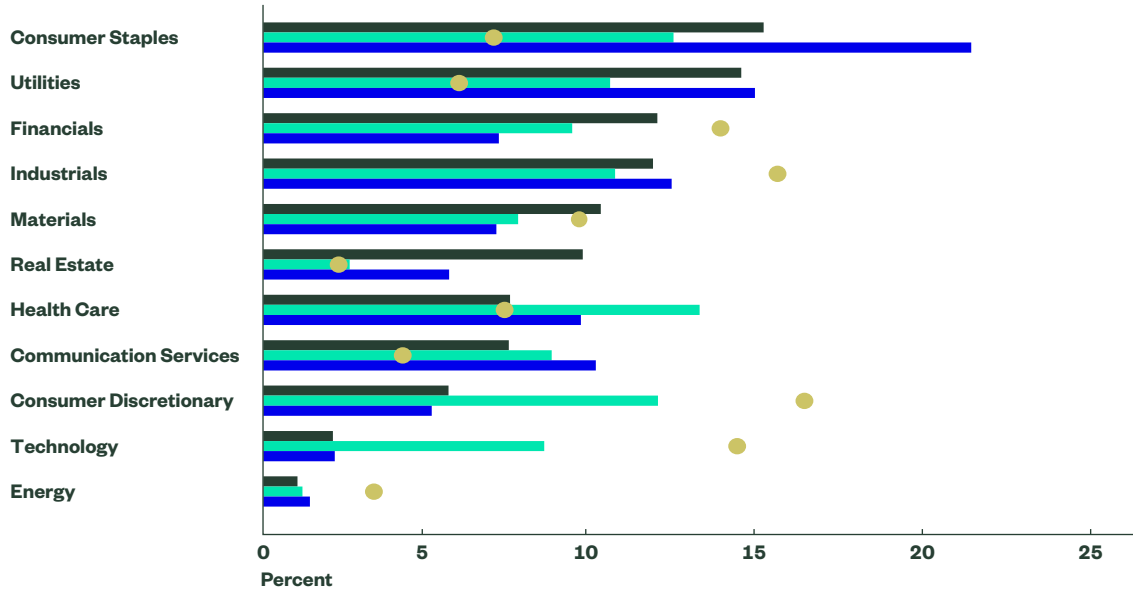
	EURO STOXX® Low Risk Weighted 100 Index	MSCI EMU Minimum Volatility Index	MSCI EMU Select Dynamic 50% Risk Weighted Index
Ticker	SXLV1T Index	M4EMVOE Index	M7CXEMRW Index
Selection Universe	EURO STOXX® Index	MSCI EMU Index	MSCI EMU Index
Construction	Rank and select Top 100, based on past volatility measure (standard deviation)	Minimize index volatility subject to constraints	Rank and select Top 50% (aggregate risk), based on past volatility measure (standard deviation)
Weighting Scheme	Price-weighted with a weighting factor based on the inverse of the preceding 12-month volatility	Determined by optimiser, using an estimated security covariance matrix, having taken into account constraints	Relative security price variance using weekly returns of the preceding 3-years
Stock Weight Constraint	Max weight: 10%	Max weight: Lower of 20x the stock's MSCI EMU weight or 1.5% Min weight: 0.05%	None
Country Constraint	None	Greater than 2.5% of MSCI EMU: ± 5% of the country's MSCI EMU weight Less than 2.5% of MSCI EMU: 3x of the country's MSCI EMU weight	None
Sector/Industry Constraint	None	± 5% of the sector's MSCI EMU weight	None
Factor Constraint	None	± 0.25 standard deviation of benchmark exposure to all factors (except Beta and Residual Volatility)	None
Turnover Constraint	None	Maximum 10% one-way turnover at each rebalance	A buffer of 20% of the cumulative targeted risk weight of 50% is used to mitigate index turnover
No. of Securities	Target 100	Floating	Floating
Rebalance Frequency	Quarterly (3rd Friday in March, June, September and December)	Semi-annually (Last business day of May and November)	Semi-annually (Last business day of May and November)

Source: STOXX Ltd. and MSCI. The information contained above is for illustrative purposes only.

A Flexible Approach to Lower Volatility

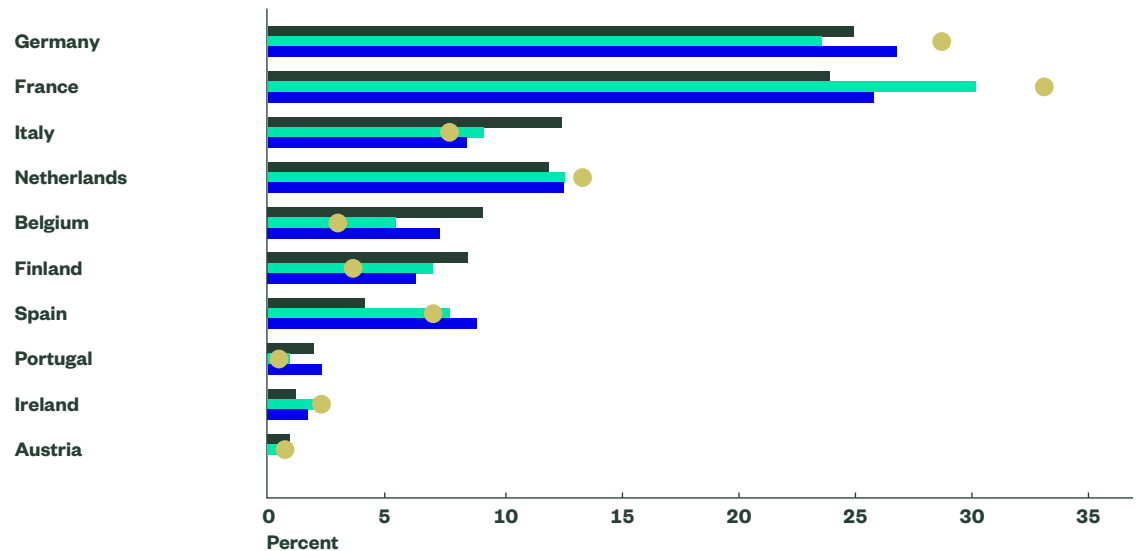
The matrix in Figure 2 explains the key distinctions between the construction methodologies of Low Volatility and Minimum Volatility indices. The critical feature is the relatively *'unconstrained'* nature of a low volatility approach. By limiting the allocation constraints, the low volatility strategy has the flexibility to go *'wherever it needs to'* in targeting lower volatility. This will often lead to dislocations in sector and country exposure (see Figure 3) across the various strategies. It is important to remember that these allocations are an *outcome* of investing in the least volatile stocks. This flexibility also helps promote the more dynamic approach enjoyed by low volatility strategies discussed in the next section (and displayed in Figure 5).

Figure 3a
Sector Exposure of Volatility Strategies



Source: FactSet, BarraOne as of 2 August 2021. This information should not be considered a recommendation to invest in a particular sector. It is not known whether the sectors shown will be profitable in the future. Diversification does not ensure a profit or guarantee against loss.

Figure 3b
Country Exposure of Volatility Strategies (Top 10)



Source: FactSet, BarraOne as of 2 August 2021. This information should not be considered a recommendation to invest in a particular country. It is not known whether the countries shown will be profitable in the future. Diversification does not ensure a profit or guarantee against loss.

The flexibility provided by the low volatility approach is often the feature most cited for driving the excess return in down markets (Figure 1), since low volatility is able to hold more of the lowest volatility stocks. Figure 4 explains the detailed performance of our low volatility approach in each of the major market pullbacks, experienced by the broader market (EURO STOXX® Index), in recent years.

Figure 4

**Low Volatility Performance
in Major Market Selloffs**

Period	Date	EURO STOXX® Index (%)	EURO STOXX® Low Risk Weighted 100 Index (%)**	Allocation Effect	Selection Effect	Low Vol Outperformance (%)	MSCI EMU Minimum Volatility Index (%)†	Min Vol Outperformance (%)
2020 Q1	20-FEB-2020 to 23-MAR-2020	-34.94	-33.91	-0.15	1.17	1.02	-31.15	3.79
2018 Q4	3-OCT-2018 to 27-DEC-2018	-14.77	-11.82	1.56	1.38	2.94	-10.23	4.54
2015 Q3	14-AUG-2015 to 29-SEP-2015	-12.17	-8.56	0.41	3.20	3.61	-9.36	2.81
2012 Q2	2-APR-2012 to 4-JUN-2012	-13.81	-6.83	3.03	3.96	6.98	-11.73	2.08
2011 Q3	2-MAY-2011 to 4-OCT-2011	-28.27	-17.81	4.52	5.94	10.46	-18.87	9.40
GFC	19-SEP-2008 to 9-MAR-2009	-44.42	-32.29	4.58	7.55	12.13	-36.79	7.63

Source: STOXX Ltd. as of the date indicated. Past performance is not a reliable indicator of future performance. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income as applicable. † Bloomberg Finance LP as of the date indicated. Index ticker M4EMVOE Index was used as a proxy for Min Vol. The intensity of the colour indicates the relative size of the data points in a given column(s) from lowest to highest.

**The EURO STOXX® Low Risk Weighted 100 Index was incepted on 4 October 2012, returns prior to this date are based hypothetical index positions using the index methodology.

**A Dynamic Approach
to Volatility Investing**

In addition to the flexibility offered by the ‘unconstrained’ nature of the low volatility approach, the more frequent rebalance schedule of the Low Volatility Index means that they are more ‘dynamic’ than the minimum volatility/variance strategies available. While this may lead to higher turnover, this is a feature of the strategy. As the standard performance chart (Figure 6) will demonstrate, the ETF is historically capable of absorbing the potentially higher transaction costs associated with tracking the index.

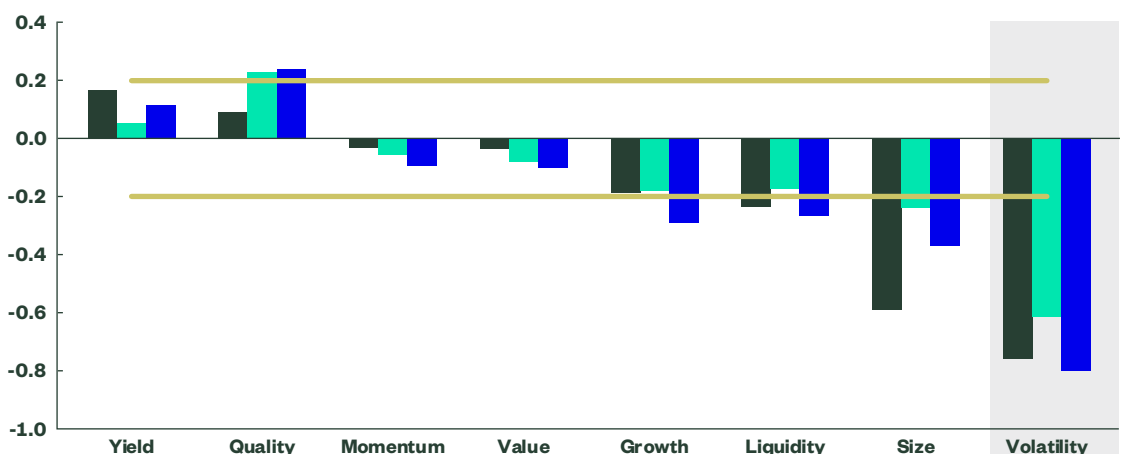
The dynamic quarterly rebalance, coupled with the flexibility of the diversification approach, help the Low Volatility Index to often display significantly low volatility (Figure 5).

Figure 5a

**FaCS Active Exposure
Comparison**

(vs. EURO STOXX® Index)

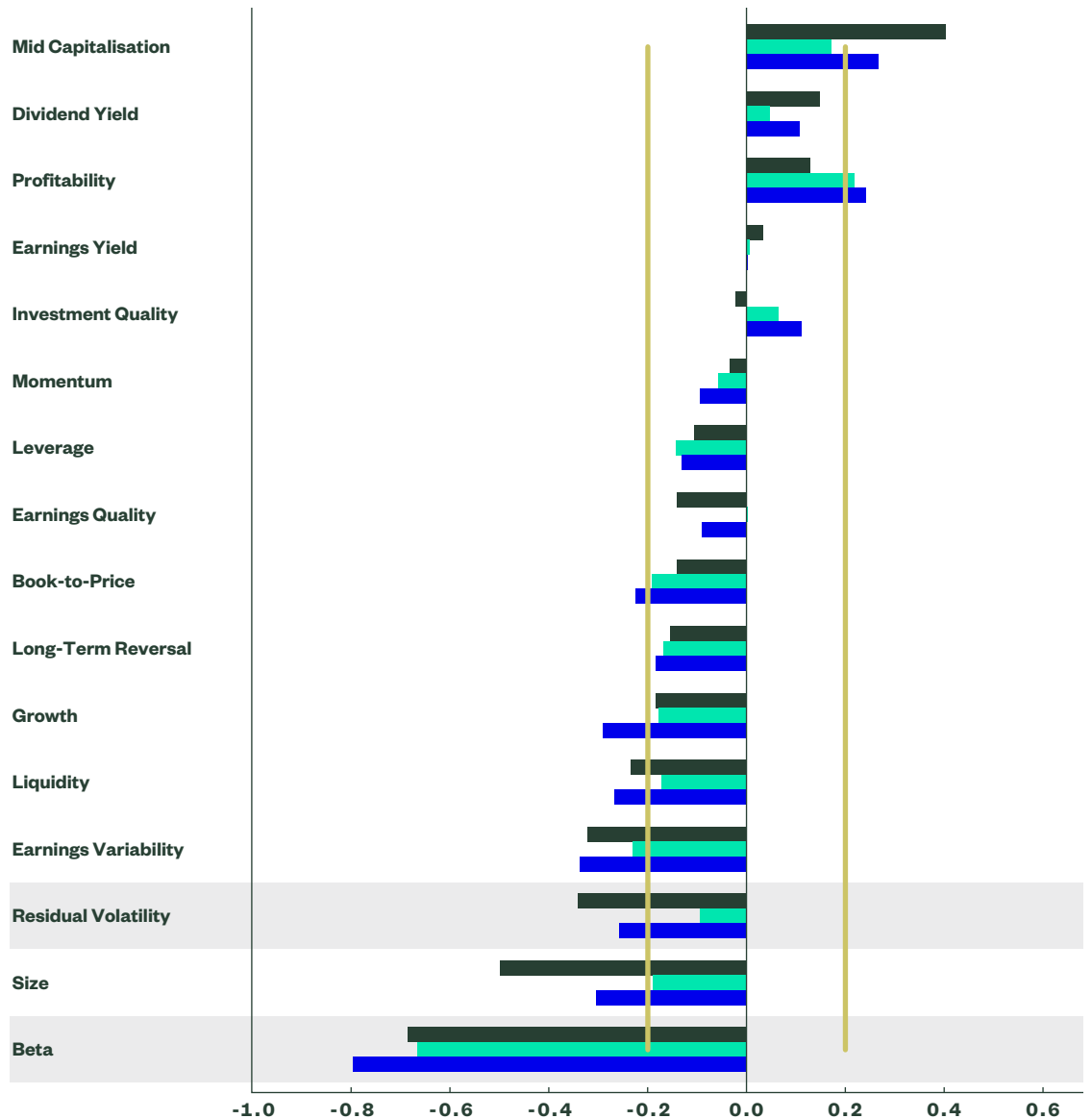
- EURO STOXX® Low Risk Weighted 100 Index
- MSCI EMU Minimum Volatility Index
- MSCI EMU Dynamic 50% Risk Weighted Index
- Significance Level (±0.20)



Source: FactSet, BarraOne as of 2 August 2021. (FaCS) stands for MSCI's Factor Classification Standards.

Figure 5b
GEMLT Active
Exposure Comparison
 (vs. EURO STOXX® Index)

- EURO STOXX® Low Risk Weighted 100 Index
- MSCI EMU Minimum Volatility Index
- MSCI EMU Dynamic 50% Risk Weighted Index
- Significance Level (± 0.20)



Source: FactSet, BarraOne as of 2 August 2021. (GEMLT) stands for MSCI Barra's Global Equity Model for Long-Term Investors.

Conclusion

One strategy that has often attracted investors seeking to take long equity positions with lower historical risk is low (or minimum) volatility. While many indices seek to target lower risk, less volatile stocks, SPDR ETFs offer a suite of low volatility strategies that follow a simple and yet effective methodology.

The Low Volatility strategies tracked by SPDR ETFs offer two important features that set them apart from minimum volatility/variance indices. Our low volatility indices are largely unconstrained, which allows them more flexibility in targeting lower volatility, and they are more dynamic as a result of rebalancing more frequently. In one simple trade, investors can seek to lower the risk exposure in their portfolio, while remaining invested in global equities using the SPDR® EURO STOXX® Low Volatility UCITS ETF.

SPDR ETFs

The investment objective of the SPDR family of Low Volatility ETFs is to track the performance of US (S&P® 500), Eurozone (EURO STOXX®) and Global (STOXX® Global 1800) equity securities, which historically have exhibited low volatility characteristics. Historically, both the S&P® 500 Low Volatility Index and EURO STOXX® Low Risk Weighted 100 Index have demonstrated better risk-adjusted returns versus the benchmark universes from which they select their constituent stocks, in part by offering lower historical drawdowns. The STOXX® Global Low Risk Weighted Diversified 200 Index was launched in 2019.

SPDR® EURO STOXX® Low Volatility UCITS ETF

The SPDR® EURO STOXX® Low Volatility UCITS ETF seeks to fully replicate the EURO STOXX® Low Risk Weighted 100 Index, which represents the 100 lowest volatility companies from the EURO STOXX® Index. Constituents are selected based on their 12-month historical volatility and weighted by the inverse of their 12-month historical volatility subject to a 10% component cap at rebalance.

The EURO STOXX® Index is a broad benchmark index representing large, mid and small capitalisation companies of 12 Eurozone countries: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, and Spain.

Figure 6
Standard Performance

Fund/Index Name	1 Month	3 Months	6 Months	Year to Date	1 Year	3 Years	5 Years	Since Inception
Inception Date 24/03/2014								
SPDR® EURO STOXX® Low Volatility UCITS ETF	3.85	8.42	15.16	13.65	21.02	4.89	6.98	8.52
EURO STOXX® Low Risk Weighted 100 Index	3.90	8.34	15.04	13.55	21.01	4.62	6.77	8.30
Difference	-0.05	0.08	0.12	0.10	0.01	0.27	0.21	0.22
EURO STOXX® Index†	1.46	5.01	18.54	16.91	33.75	7.72	9.67	7.87
Difference	2.39	3.41	-3.38	-3.26	-12.73	-2.83	-2.69	0.65

Source: State Street Global Advisors, *Morningstar and Bloomberg, as of 30 July 2021.

Performance is net of fees. **Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. The performance data do not take account of the commissions and costs incurred on the issue and redemption, or purchases and sale, of units. Visit [spdrs.com](https://www.spdrs.com) for most recent month-end performance.** Performance returns for periods of less than one year are not annualised. Index returns are unmanaged and do not reflect the deduction of any fees or expenses.

Endnotes

- 1 Michael C. Jensen, ed., Studies in the Theory of Capital Markets. Praeger Publishers Inc, 1972.
- 2 In the methodology, volatility of the constituents, within each eligible universe, is calculated using available price return data for the trailing one year of trading days leading up to each index rebalancing reference date.

Appendix

Figure 7
Brinson Attribution by Sector
 (Q1 2020)

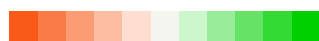
Sector	EURO STOXX® Low Risk Weighted 100 Index			EURO STOXX® Index			Attribution Analysis		
	Average Weight	Total Return	Contrib. To Return	Average Weight	Total Return	Contrib. To Return	Allocation Effect	Selection Effect	Total Effect
Total	—	-33.91	—	—	-34.94	—	-0.24	1.25	1.02
Financials	16.48	-40.82	-7.10	15.53	-44.74	-7.51	-0.09	0.75	0.65
Industrials	11.20	-37.69	-4.40	14.44	-41.51	-6.32	0.19	0.44	0.63
Communication Services	7.99	-24.06	-1.69	5.03	-28.04	-1.31	0.20	0.30	0.50
Utilities	19.94	-31.70	-6.09	7.38	-31.49	-2.26	0.45	-0.03	0.42
Energy	3.88	-35.87	-1.39	4.27	-42.39	-1.93	0.06	0.25	0.31
Consumer Staples	11.25	-24.23	-2.51	9.40	-24.42	-2.07	0.18	0.01	0.19
Materials	3.95	-26.89	-1.01	8.95	-32.48	-2.85	-0.12	0.20	0.08
Consumer Discretionary	3.97	-30.83	-1.22	13.01	-32.71	-4.18	-0.21	0.05	-0.16
Technology	0.05	-5.58	-0.05	10.70	-31.48	-3.30	-0.36	-0.03	-0.39
Health Care	3.16	-28.60	-0.88	8.40	-27.14	-2.13	-0.38	-0.05	-0.43
Real Estate	18.12	-39.66	-7.58	2.89	-36.07	-1.08	-0.16	-0.62	-0.78

Source: STOXX Ltd. from 20 February 2020 to 23 March 2020.

Figure 8
Brinson Attribution by Sector
 (Q4 2018)

Sector	EURO STOXX® Low Risk Weighted 100 Index			EURO STOXX® Index			Attribution Analysis		
	Average Weight	Total Return	Contrib. To Return	Average Weight	Total Return	Contrib. To Return	Allocation Effect	Selection Effect	Total Effect
Total	—	-11.82	—	—	-14.77	—	1.30	1.64	2.94
Real Estate	12.56	-8.92	-1.12	2.47	-10.71	-0.26	0.40	0.21	0.61
Consumer Staples	12.33	-5.31	-0.59	9.57	-7.66	-0.71	0.22	0.27	0.49
Financials	19.92	-14.22	-2.91	18.35	-16.40	-3.03	-0.01	0.43	0.42
Consumer Discretionary	5.53	-14.40	-0.83	11.50	-17.38	-2.03	0.16	0.16	0.32
Technology	2.44	-21.94	-0.62	8.59	-20.81	-1.86	0.37	-0.06	0.31
Health Care	3.85	-11.53	-0.38	8.42	-16.86	-1.40	0.10	0.21	0.31
Energy	4.62	-15.10	-0.71	6.46	-18.58	-1.24	0.07	0.17	0.24
Communication Services	4.51	6.91	0.28	5.64	-1.67	-0.10	-0.13	0.33	0.19
Utilities	6.17	1.23	-0.00	5.42	-0.05	-0.01	0.07	0.06	0.13
Industrials	20.98	-15.23	-3.24	14.76	-15.53	-2.28	-0.05	0.06	0.01
Materials	7.08	-22.38	-1.71	8.81	-19.76	-1.85	0.10	-0.21	-0.11

Source: STOXX Ltd. from 3 October 2018 to 26 December 2018.



The intensity of the colour indicates the relative size of the data points in a given column from lowest to highest.

Figure 9

Brinson Attribution by Sector

(Q3 2015)

Sector	EURO STOXX® Low Risk Weighted 100 Index			EURO STOXX® Index			Attribution Analysis		
	Average Weight	Total Return	Contrib. To Return	Average Weight	Total Return	Contrib. To Return	Allocation Effect	Selection Effect	Total Effect
Total	—	-8.56	—	—	-12.17	—	-0.21	3.83	3.62
Financials	25.02	-8.01	-2.06	24.30	-12.77	-3.12	-0.04	1.12	1.08
Consumer Discretionary	15.25	-7.50	-1.14	14.21	-13.55	-1.92	-0.03	0.93	0.90
Industrials	19.47	-8.30	-1.62	14.08	-12.00	-1.69	0.01	0.73	0.73
Utilities	7.84	-6.11	-0.47	5.50	-13.25	-0.74	-0.02	0.56	0.53
Consumer Staples	15.18	-9.21	-1.40	9.70	-10.47	-1.02	0.12	0.20	0.32
Health Care	4.13	-5.10	-0.20	8.96	-10.62	-0.94	-0.07	0.22	0.15
Materials	7.31	-15.33	-1.16	7.51	-15.76	-1.20	0.02	0.04	0.05
Telecommunication Services	2.95	-11.41	-0.34	4.97	-11.58	-0.57	-0.02	0.01	-0.01
Energy	—	—	—	4.99	-11.50	-0.58	-0.04	—	-0.04
Technology	2.84	-5.98	-0.17	5.77	-7.23	-0.40	-0.14	0.03	-0.11

Source: STOXX Ltd. from 14 August 2015 to 29 September 2015.

Figure 10

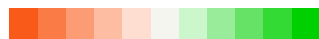
Brinson Attribution by Sector

(Q2 2012**)

Sector	EURO STOXX® Low Risk Weighted 100 Index			EURO STOXX® Index			Attribution Analysis		
	Average Weight	Total Return	Contrib. To Return	Average Weight	Total Return	Contrib. To Return	Allocation Effect	Selection Effect	Total Effect
Total	—	-6.83	—	—	-13.81	—	2.56	4.44	6.99
Financials	7.07	-11.27	-0.81	18.40	-20.78	-4.05	0.89	0.72	1.61
Health Care	11.35	4.79	0.50	7.93	-4.01	-0.30	0.33	0.88	1.21
Industrials	15.09	-6.10	-0.91	14.10	-13.39	-1.88	0.00	1.10	1.10
Consumer Staples	21.06	-5.97	-1.25	10.72	-5.72	-0.59	0.86	-0.06	0.80
Consumer Discretionary	12.32	-9.38	-1.16	11.73	-14.19	-1.66	0.01	0.59	0.60
Technology	5.42	-9.17	-0.50	5.22	-17.64	-0.95	-0.00	0.47	0.47
Materials	4.43	-7.79	-0.35	9.45	-15.88	-1.51	0.11	0.36	0.47
Telecommunication Services	11.96	-7.89	-0.96	6.32	-9.04	-0.55	0.27	0.13	0.40
Energy	2.77	-9.78	-0.28	8.05	-15.73	-1.28	0.11	0.17	0.28
Utilities	7.33	-14.35	-1.11	6.74	-15.33	-1.04	-0.01	0.07	0.06

Source: STOXX Ltd. from 2 April 2012 to 4 June 2012.

**The EURO STOXX® Low Risk Weighted 100 Index was inception on 4 October 2012, returns prior to this date are based hypothetical index positions using the index methodology.



The intensity of the colour indicates the relative size of the data points in a given column from lowest to highest.

Figure 11

Brinson Attribution by Sector

(Q3 2011**)

Sector	EURO STOXX® Low Risk Weighted 100 Index			EURO STOXX® Index			Attribution Analysis		
	Average Weight	Total Return	Contrib. To Return	Average Weight	Total Return	Contrib. To Return	Allocation Effect	Selection Effect	Total Effect
Total	—	-17.81	—	—	-28.27	—	3.62	6.80	10.42
Financials	13.40	-24.21	-3.33	21.22	-38.17	-8.64	1.02	1.95	2.97
Industrials	11.38	-20.44	-2.38	14.57	-32.77	-4.86	0.12	1.49	1.61
Consumer Staples	19.17	-13.54	-2.55	9.15	-12.62	-1.08	1.47	-0.14	1.33
Consumer Discretionary	9.13	-13.27	-1.22	11.32	-27.67	-3.10	-0.09	1.31	1.22
Materials	6.27	-26.37	-1.69	9.29	-35.25	-3.40	0.28	0.57	0.85
Telecommunication Services	9.62	-12.72	-1.20	6.97	-18.48	-1.24	0.26	0.51	0.77
Health Care	10.46	-12.96	-1.32	6.46	-14.75	-0.92	0.53	0.17	0.70
Utilities	12.38	-22.75	-2.90	7.95	-25.33	-1.96	0.18	0.32	0.49
Technology	4.22	-16.19	-0.67	4.65	-26.37	-1.19	0.01	0.41	0.41
Energy	3.02	-18.26	-0.55	7.58	-25.18	-1.89	-0.15	0.21	0.06

Source: STOXX Ltd. from 2 May 2011 to 4 October 2011.

**The EURO STOXX® Low Risk Weighted 100 Index was inceptioned on 4 October 2012, returns prior to this date are based hypothetical index positions using the index methodology.

Figure 12

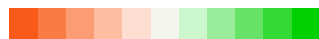
Brinson Attribution by Sector

(GFC**)

Sector	EURO STOXX® Low Risk Weighted 100 Index			EURO STOXX® Index			Attribution Analysis		
	Average Weight	Total Return	Contrib. To Return	Average Weight	Total Return	Contrib. To Return	Allocation Effect	Selection Effect	Total Effect
Total	—	-32.29	—	—	-44.44	—	4.28	7.88	12.16
Financials	17.27	-46.12	-8.78	24.28	-65.44	-19.98	2.00	4.64	6.64
Utilities	13.37	-26.73	-3.39	11.65	-35.30	-3.78	0.50	0.81	1.30
Consumer Staples	13.98	-27.30	-3.70	7.40	-29.27	-1.91	1.01	0.24	1.25
Consumer Discretionary	15.39	-33.80	-5.05	10.21	-38.34	-3.35	0.91	0.10	1.02
Industrials	8.22	-32.10	-2.60	11.17	-43.66	-4.89	0.02	0.99	1.01
Health Care	7.73	-22.74	-1.59	6.03	-27.56	-1.50	0.31	0.35	0.66
Technology	3.35	-33.64	-1.11	4.85	-46.47	-2.28	0.06	0.43	0.50
Materials	8.07	-43.87	-3.74	6.61	-46.18	-3.22	0.14	0.27	0.40
Telecommunication Services	8.81	-18.92	-1.43	9.30	-18.53	-1.39	0.04	-0.08	-0.04
Energy	3.60	-27.32	-0.89	8.24	-30.15	-2.15	-0.71	0.13	-0.58

Source: STOXX Ltd. from 19 September 2008 to 9 March 2009.

**The EURO STOXX® Low Risk Weighted 100 Index was inceptioned on 4 October 2012, returns prior to this date are based hypothetical index positions using the index methodology.



The intensity of the colour indicates the relative size of the data points in a given column from lowest to highest.

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