

MARKETING DOCUMENT. FOR PROFESSIONAL AND QUALIFIED INVESTORS ONLY

# Expert's view

## S&P Paris-Aligned Benchmarks: An ambitious approach to climate action

The Paris Agreement's preferred target – a **maximum +1.5°C** warming above preindustrial levels – requires the world's countries to achieve 'net zero' greenhouse gas emissions by 2050. Net zero can seem hard to balance with an economic growth imperative, but investors have several levers to pull that can contribute to positive climate action. In this report, we review the characteristics of the EU endorsed Paris-aligned Benchmarks (PAB), which help investors build portfolios compatible with the Paris Agreement—focusing here on the **S&P 500 PAB**.

### Facts and overview

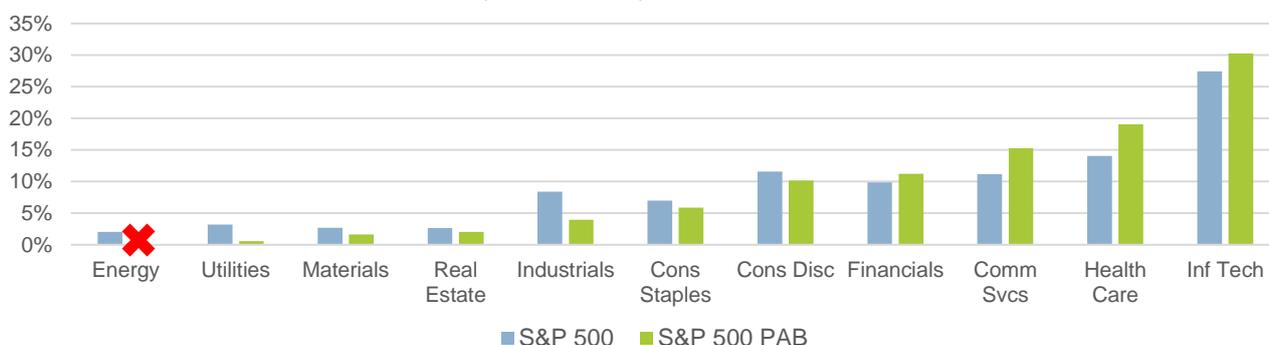
- ▶ **Ambitious climate action:** Paris-aligned Benchmarks (PAB) not only place portfolios on a decarbonisation trajectory – they put portfolios *immediately* where they need to be in 2030. That means a 50% reduction in the carbon intensity, and outright exclusion of fossil-related activities.
- ▶ **S&P's take on climate indices:** S&P PAB indices are constructed using an optimisation approach. They aim to minimise the active share under a set of constraints, including EU PAB eligibility criteria, the alignment to the 1.5° temperature scenario, and physical risks reduction.

### Our key takeaways

- ▶ **Different sector exposure:** Versus its parent, the S&P 500 PAB index has greater exposure to Tech, Communication Services and Healthcare; it has lower exposure to Industrials, Utilities and Energy (excluded).
- ▶ **Overweight to Quality:** Active risk analysis highlights the importance of the S&P PAB's greater exposure to Quality versus its parent.
- ▶ Our detailed performance attribution analysis concludes that both biases (sector and factor) explained most of the YTD outperformance of the S&P PAB index.

### S&P 500 Paris-Aligned Climate Index sector breakdown

GICS sectors Level 1 vs. S&P 500 Index (Parent index), in % market value



Sources: Lyxor international asset management, Bloomberg. Data as at 30/10/2020. Past performance is not a reliable indicator of future returns.

### Lyxor ETF Research & Solutions

Vincent Denoiseux (head)  
Daniel Dornel  
Ida Troussieux  
Christopher Martin  
[eur-lyx-etf-research@lyxor.com](mailto:eur-lyx-etf-research@lyxor.com)

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## Climate investing in the listed economy

A growing number of investors, especially in Europe, now explicitly commit to align their portfolios with the temperature targets of the Paris Agreement. These targets can only be achieved through emission reductions which will involve an absolute, year-on-year portfolio decarbonisation pathway, starting immediately.

As major shareholders in the world's biggest companies, investors can also engage companies on climate, with special attention on the "systemic emitters" of CO<sub>2</sub> that are critical to the transition.

Listed companies have an essential role to play: as a group, they are responsible for 47% of global emissions. 161 listed companies are responsible for 80% of the world's industrial global greenhouse gas (GHG) emissions.

The 2018 EU action plan put the wheels in motion to turn temperature modelling into legislation, starting with EU labels for financial products and new regulation on climate benchmarks and ESG disclosures. An amendment to the 2016 Benchmark Regulation creates **new investment benchmarks designed to help investors decarbonise** portfolios and align with a 1.5°C scenario.

Following the release of the European Commission's minimum standards for these two benchmarks – the Climate Transition and Paris-aligned Benchmarks – index providers have started to build eligible, science-based indices.

While previous generations of low-carbon indices seek to reduce emissions relative to their parent indices, without targeting an explicit temperature scenario, the EU's benchmarks are built with an absolute 1.5°C target scenario goal. Even if the world increased its carbon footprint, these new benchmarks will stick to their decarbonisation trajectories.

### Paris-aligned Benchmarks: An ambitious approach to climate change

Paris-aligned Benchmarks (PAB) take an ambitious approach to climate change. These indices not only place a portfolio on a "decarbonisation trajectory", an incremental pathway towards a reduced carbon impact. They also put portfolios immediately in line with where they need to be in 2030: a 50% reduction in the carbon intensity, and outright exclusion of fossil fuel related activities. These are key steps to carbon neutrality in 2050, and they create an additional buffer to secure alignment with Paris Agreement goals.

S&P PAB indices aims to meet and go beyond this proposed regulation using an optimisation approach. They aim to minimise the active share under a set of constraints, including PAB eligibility criteria, the alignment to the 1.5°C temperature scenario, and physical risks reduction.

The table in the following page provides more details on S&P's approach.

### Investor roles in positive climate actions

*Investors can:*



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**S&P Paris Aligned Benchmark index**

Index Parameter	S&P Paris Aligned Benchmark index
<b>Parent index</b>	S&P 500 Index (market capitalisation weighted)
<b>Exclusions</b>	<ul style="list-style-type: none"> <li>- Controversial weapons</li> <li>- Tobacco producers/cultivators</li> <li>- 6 Environmental Objectives (EU Taxonomy), "Do not significantly harm" <sup>1</sup></li> <li>- Societal norms violators (UN Global Compact)</li> <li>- ESG controversies (based on SAM Media &amp; Stakeholder Analysis)</li> </ul> <p><u>Fossil fuel-related activity exclusions</u></p> <ul style="list-style-type: none"> <li>- Coal (&gt;1% revenues)</li> <li>- Oil (&gt;10%)</li> <li>- Natural gas/gaseous hydrocarbons (&gt;50%)</li> <li>- Electricity production (&gt;100g CO2/kWh)</li> </ul>

Minimise the difference in weight between the parent and the strategy:

**Weighting rules**

$$\sum \frac{(parent\ weight\ i - PAC\ weight\ i)^2}{parent\ weight\ i}$$

<b>Constraints</b>	<ul style="list-style-type: none"> <li>- Decarbonisation path (7% year-on-year) (PAB eligibility criteria)</li> <li>- 1.5°C aligned portfolio</li> <li>- Carbon intensity reduction (-50%) (PAB eligibility criteria)</li> <li>- Green-to-brown revenue improvement (4x)<sup>2</sup></li> <li>- Equivalent exposure to high impact sectors (PAB eligibility criteria)</li> <li>- Science Based Target premium (+20% collective weight increases for companies with SBTs) (PAB eligibility criteria)</li> <li>- Physical risk score (-10%) and stricter weighting caps for high physical risk companies</li> <li>- Fossil fuel reserves exposure (-80%)</li> <li>- E (Environmental) score improvement (+20%)</li> </ul>
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**Rebalancing frequency**

Quarterly

<sup>1</sup> EU 6 Objectives (Taxonomy): 1) Climate change mitigation, 2) Climate change adaptation, 3) Sustainable use and protection of water and marine resources, 4) Transition to a circular economy, 5) Pollution prevention and control, 6) Protection and restoration of biodiversity and ecosystems. <sup>2</sup> The allocation of revenues from extractive and utility companies, at a business activity level, into one of two categories—climate solutions and climate aggravators.

Sources: S&P DJI, Lyxor International Asset Management.

Have a look at our [S&P PAB](#) factsheet for more details on the index methodology.

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# US Focus: S&P 500 PAB Index

## Index overview

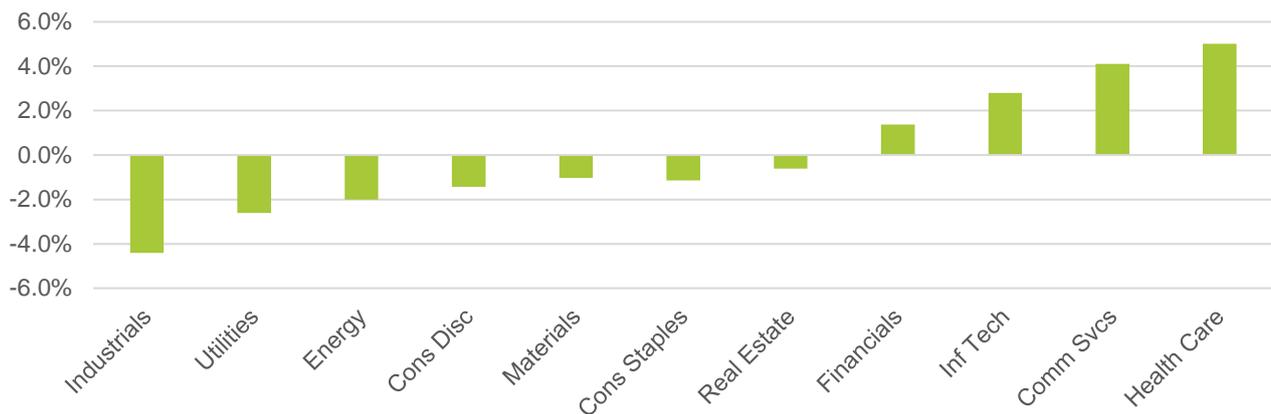
### S&P 500 PAB leading the way

Historical performance (as at 30/10/2020)

	S&P 500	S&P 500 PAB
YTD perf	2.3%	5.6%
1Y perf	9.1%	13.4%
3Y perf	32.3%	41.2%
1Y vol	30.8%	30.6%
3Y vol	21.5%	21.7%
Sharpe 1Y	0.30	0.44
Sharpe 3Y	0.45	0.56
1Y TE vs parent	-	2.33%
3Y TE vs parent	-	1.81%

### S&P 500 PAB vs Parent index

GICS sectors breakdown vs. S&P 500 Index (Parent index), in % market value



### Top 10 constituents in % market value

Top 10 S&P 500		Top 10 S&P 500 PAB	
Apple Inc	6.45	Alphabet Inc	7.15
Microsoft Corp	5.65	Microsoft Corp	4.94
Amazon.com Inc	4.77	Apple Inc	4.94
Alphabet Inc	3.55	Facebook Inc	4.58
Facebook Inc	2.33	Amazon.com Inc	4.46
Berkshire Hathaway Inc	1.48	NVIDIA Corp	2.06
Johnson & Johnson	1.33	Visa Inc	1.95
Procter & Gamble Co/The	1.26	Mastercard Inc	1.67
NVIDIA Corp	1.14	Walt Disney Co/The	1.65
Visa Inc	1.13	Adobe Inc	1.51

Source: S&P, Bloomberg LP, Lyxor International Asset Management as of 30/10/2020  
Past performance is not a reliable indicator of future performance

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### Key ESG and climate statistics

	S&P 500	S&P 500 PAB
<b>ESG data</b>		
MSCI ESG Score (Industry Adjusted)	6.1	6.3
<b>Carbon Footprint</b>		
Carbon Emissions tons CO2e/\$M invested	39.3	8.7
Carbon Intensity tons CO2e/\$M sales	135.1	27.7
Weighted Average Carbon Intensity tons CO2e/\$M sales	148.9	31.8

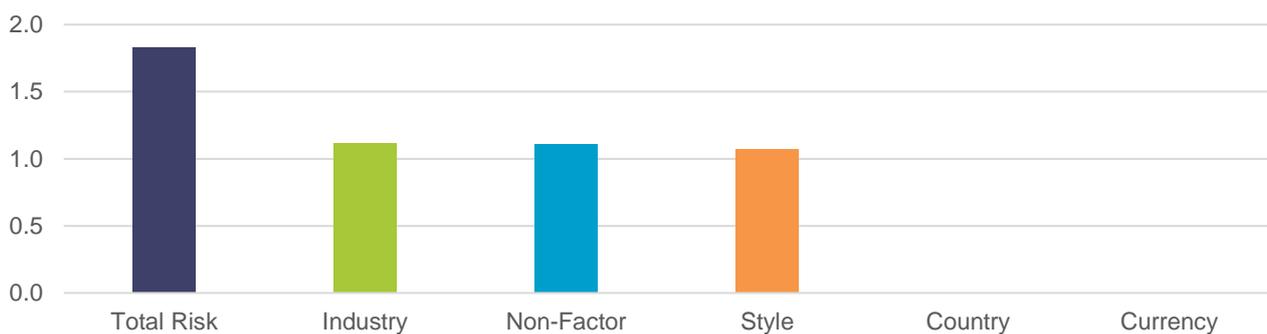
Source: S&P, MSCI, Bloomberg LP, Lyxor International Asset Management as of 30/09/2020  
 Past performance is not a reliable indicator of future performance

### Active risk analysis

The importance of Style exposure and Stock picking

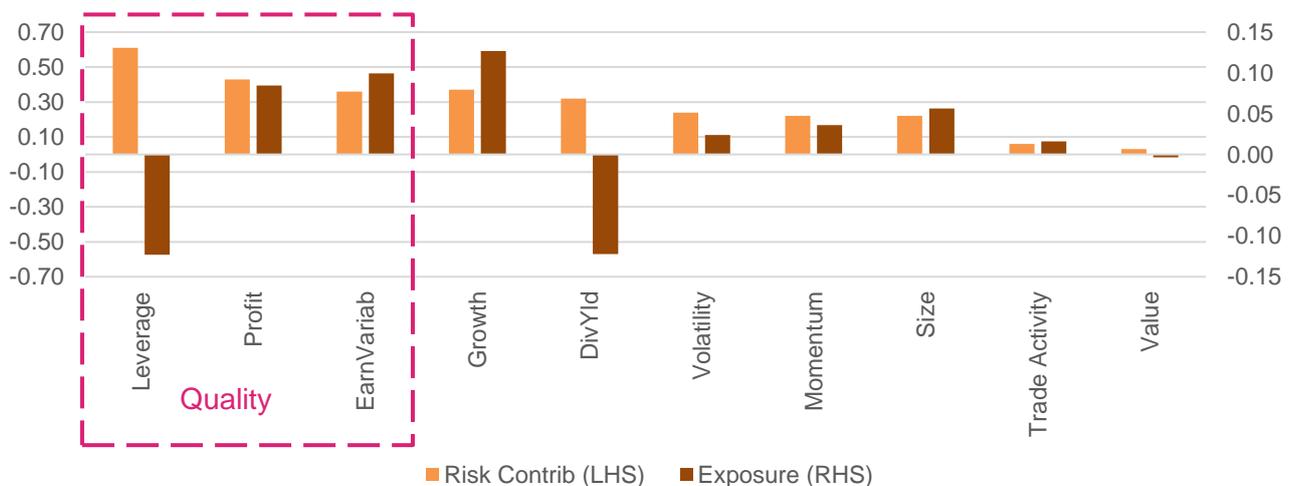
#### Active Risk<sup>3</sup> vs Parents: a balanced impact of Stock-Picking, Industry and Style

Active risk decomposition vs Parent index, in %



#### Quality factors have a high contribution on active risk

Active style risk decomposition vs Parent index, in %



Source: S&P, Bloomberg LP, Lyxor International Asset Management as of 30/10/2020  
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<sup>3</sup> Ex-ante Tracking error, more details available in the Glossary p.8 ("Active Risk decomposition analysis")

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## Performance attribution analysis

### Overview

#### YTD Performance attribution

Period: 31/12/2019 – 30/10/2020

	S&P 500	S&P 500 PAB	+/-
YTD Performance	2.3%	5.6%	3.4%
YTD Performance attribution	2.3%	5.3%	3.0%
Residual performance	0.0%	0.3%	0.3%

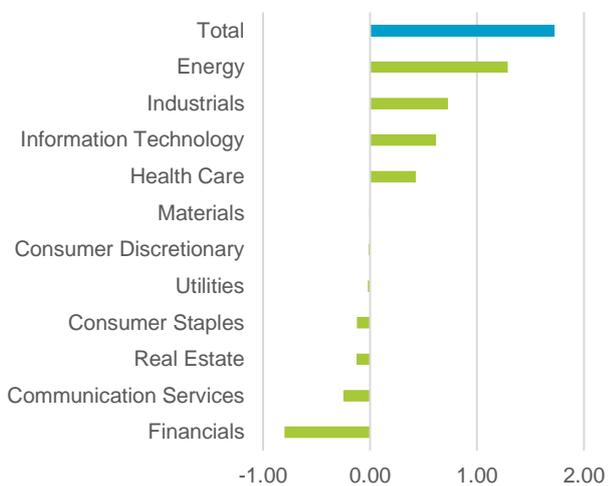
Source: S&P, Bloomberg LP, Lyxor International Asset Management as of 30/10/2020  
 Past performance is not a reliable indicator of future performance

#### Period 1: 31/12/2019 - 23/03/2020

##### Energy underweight, strong positive impact

GICS Sector Level 1

Total return attribution, in %

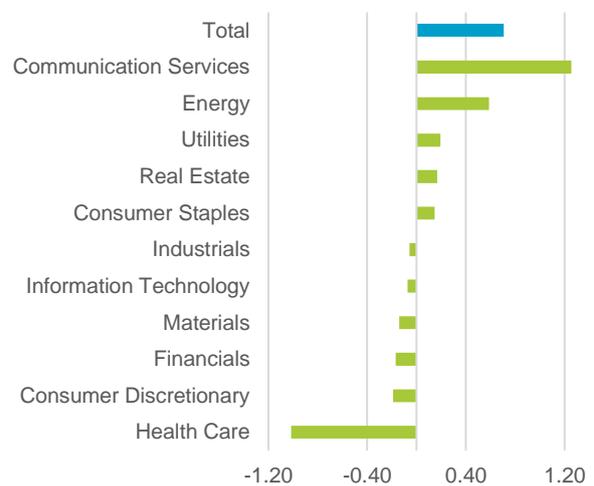


#### Period 2: 23/03/2020 – 30/10/2020

##### Communication Services led the pack

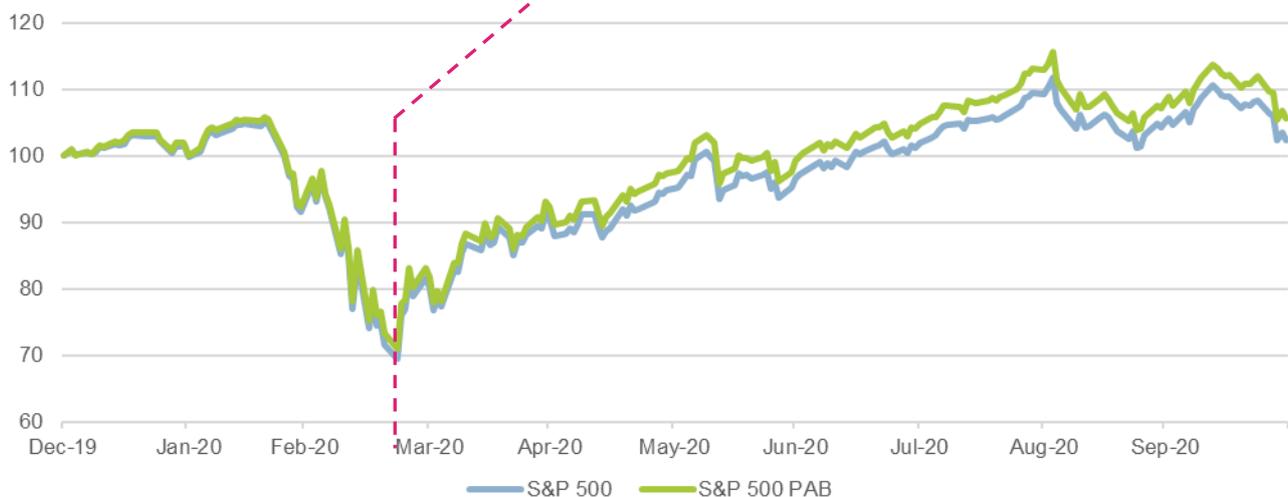
GICS Sector Level 1

Total return attribution, in %



#### Historical index performance

Base date 31/12/2019 at 100



Period of analysis 31/12/2019 – 30/10/2020

Source: S&P, Bloomberg LP, Lyxor International Asset Management as of 30/10/2020  
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## Performance attribution by components

Period: 31/12/2019 – 31/10/2020

## Importance of selection effect on Industrials

GICS Sector Level 1 performance attribution, in %

	Allocation	Selection	Total
<b>Total</b>	<b>2.23</b>	<b>0.81</b>	<b>3.03</b>
Energy	2.31	0.00	2.31
Industrials	-0.35	1.38	1.03
Inf. Technology	0.90	-0.04	0.86
Comm. Services	0.26	0.26	0.51
Utilities	0.12	-0.02	0.11
Real Estate	0.09	-0.16	-0.07
Cons. Staples	0.02	-0.10	-0.08
Health Care	-0.12	0.03	-0.09
Materials	-0.02	-0.08	-0.11
Cons. Disc	-0.27	0.12	-0.15
Financials	-0.72	-0.58	-1.30

## Top 10 positive contributors to outperformance

in %

	Avg wgt in PAB	Avg wgt difference	Total return	Active return
Exxon Mobil Corp	0.00	-0.75	-51.47	0.59
Facebook Inc	4.02	1.94	28.19	0.45
Alphabet Inc	5.15	1.88	20.95	0.44
NVIDIA Corp	1.48	0.62	113.28	0.43
Boeing Co/The	0.00	-0.40	-55.49	0.38
Chevron Corp	0.00	-0.65	-40.68	0.36
Berkshire Hathaway Inc	0.00	-1.52	-10.86	0.22
Microsoft Corp	5.50	-0.01	29.10	0.20
Adobe Inc	1.34	0.60	35.56	0.16
Raytheon Technologies	0.01	-0.32	-37.37	0.15

Source: S&P, Bloomberg LP, Lyxor International Asset Management as of 30/10/2020  
Past performance is not a reliable indicator of future performance

## Related indices for Climate focused equity allocation

Index Exposure	Index name & investment objective	Bloomberg ticker
<b>Paris Aligned Benchmark (PAB) indices by S&amp;P DJI / Trucost</b>	S&P 500 Paris-Aligned Climate NTR	SP50PAUN Index
	S&P Developed ex-Korea LargeMidCap Paris-Aligned Climate NTR	SPDPACUN Index
	S&P Europe LargeMidCap Paris-Aligned Climate NTR	SPEUPAEN Index
	S&P Eurozone LargeMidCap Paris-Aligned Climate NTR	SPEPABEN Index

The S&P Paris-Aligned Climate indices are designed to measure the performance of eligible companies from their respective parent index, selected and weighted to be collectively compatible with a 1.5°C global warming climate scenario at the index level.

Source: Lyxor International Asset Management

Get in touch with your Lyxor ETF sales representative for more information on Lyxor ETF's Climate Transition range.

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## Glossary

### Active Risk decomposition analysis

Analysis of the index ex-ante risk (i.e. predicted tracking error). Tracking errors are annualised volatilities of active returns, expressed in percentages. The analysis can give two sets of information:

- It can decompose this tracking error into isolated tracking errors (Risk contributions) attributed to different risk model factors and Non-factor (i.e. stock picking). The factors used are driven by the risk model of choice. Generally speaking, for equities these include the market, country, industry and style factors. For fixed income, these include curve and spread factors. For global portfolios, it also includes currency factors.
- It can also give you the active exposure of the index to a specific factor.

This analysis can be drilled down into sub factors (see Style sub factors definition below).

### Total return performance attribution

Allocation effect: active return that can be attributed to asset allocation bets (e.g. under or overweighting a specific sector). It is the difference between the portfolio and benchmark sector weights times the difference between the benchmark and the benchmark total return.

Currency effect: active return that can be attributed to currency allocation bets (e.g. under or overweighting a currency).

Selection effect: active return that can be attributed to security selection within a specific sector (e.g. choosing different securities within a grouping from those in the benchmark). It is the difference between the portfolio and benchmark sectorial returns times the benchmark sector weights.

Interaction effect: active return that can be attributed to simultaneously making both an allocation and security selection bet. In this analysis, this term is added to allocation effect for simplicity purposes.

Residual: the unexplained segment of the relative excess return between the index and the benchmark (e.g. not explained by the attribution performance).

Total attribution: total active return. It is equal to the sum of the allocation, selection, intersection and currency effects.

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**Bloomberg Style sub factors definitions**

Style factor	Definition	Calculation
<b>Momentum</b>	Separates stocks that have outperformed over the past year and those that have underperformed.	Cumulative return over one year (averaged), skipping the most recent two weeks to mitigate the price reversal effect.
<b>Value</b>	Composite metric that differentiates "rich" and "cheap" stocks. Bloomberg combines fundamental and analyst consensus data to calculate this factor.	Combination of the following descriptors: <ul style="list-style-type: none"> <li>• Book to Price (13%)</li> <li>• Earnings to Price (19%)</li> <li>• Cash Flow to Price (18%)</li> <li>• Sales / EV (10%)</li> <li>• EBITDA / EV (21%)</li> <li>• Forecast Earnings to Price (19%)</li> </ul>
<b>Dividend Yield (DivYld)</b>	Another dimension of value, but distinct enough to be a standalone factor.	Most recently announced net dividend (annualised) divided by the current market price.
<b>Size</b>	Composite metric distinguishing between large and small stocks.	Combination of the following descriptors: <ul style="list-style-type: none"> <li>• log(Market Capitalisation) (31%)</li> <li>• log(Sales) (34%)</li> <li>• log(Total Assets) (35%)</li> </ul>
<b>Trading Activity</b>	Turnover based measure. Bloomberg focuses on turnover which is trading volume normalised by shares outstanding. This indirectly controls for the Size effect.	The exponential weighted average (EWMA) of the ratio of shares traded to shares outstanding (where the average is over 2 years - 504 trading days).
<b>Earnings Variability (EarnVariab)</b>	Gauges how consistent earnings, cash flows, and sales have been in recent years.	Combination of the following descriptors: <ul style="list-style-type: none"> <li>• Earnings Volatility to Total Assets (34%)</li> <li>• Cash Flow Volatility to Total Assets (35%)</li> <li>• Sales Volatility to Total Assets (31%)</li> </ul>
<b>Profitability (Profit)</b>	Studies firms' profit margins to differentiate between money makers and money losers.	Combination of the following descriptors: <ul style="list-style-type: none"> <li>• Return on Equity (26%)</li> <li>• Return on Assets (28%)</li> <li>• Return on Capital Employed (28%)</li> <li>• EBITDA Margin (18%)</li> </ul>
<b>Volatility</b>	Differentiates more volatile stocks and less volatile ones by quantifying "volatile" from several different angles.	Combination of the following descriptors: <ul style="list-style-type: none"> <li>• Rolling Volatility = Return volatility over latest 252 trading days (29%)</li> <li>• Rolling CAPM Beta = Regression coefficient from the rolling window regression of stock returns on local index returns (18%)</li> <li>• Historical Sigma = Residual volatility from the rolling window regression of stock returns on local index returns (28%)</li> <li>• Cumulative Range = The ratio of maximum and minimum stock price over the previous year (25%)</li> </ul>
<b>Growth</b>	Aims to capture the difference between high and low growers by using historical fundamental and forward-looking analyst data.	Combination of the following descriptors: <ul style="list-style-type: none"> <li>• Total Asset Growth (23%)</li> <li>• Sales Growth (25%)</li> <li>• Earnings Growth (18%)</li> <li>• Forecast of Earnings Growth (14%)</li> <li>• Forecast of Sales Growth (20%)</li> </ul>
<b>Leverage</b>	Composite metric to gauge a firm's level of leverage.	Combination of the following descriptors: <ul style="list-style-type: none"> <li>• Book Leverage (34%)</li> <li>• Market Leverage (33%)</li> <li>• Debt to Total Assets (33%)</li> </ul>

Source: Bloomberg, Lyxor International Asset Management. For illustrative purpose only

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**Capital at risk**

ETFs are tracking instruments: Their risk profile is similar to a direct investment in the Underlying index. Investors' capital is fully at risk and investors may not get back the amount originally invested.

**Replication risk**

The fund objectives might not be reached due to unexpected events on the underlying markets which will impact the index calculation and the efficient fund replication.

**Counterparty risk**

With synthetic ETFs, investors are exposed to risks resulting from the use of an OTC swap with Societe Generale. In-line with UCITS guidelines, the exposure to Société Générale cannot exceed 10% of the total fund assets. Physically replicated ETFs may have counterparty risk if they use a securities lending programme

**Underlying risk**

The Underlying index of a Lyxor ETF may be complex and volatile. For example, when investing in commodities, the Underlying index is calculated with reference to commodity futures contracts exposing the investor to a liquidity risk linked to costs such as cost of carry and transportation. ETFs exposed to Emerging Markets carry a greater risk of potential loss than investment in Developed Markets as they are exposed to a wide range of unpredictable Emerging Market risks.

**Currency risk**

ETFs may be exposed to currency risk if the ETF is denominated in a currency different to that of the Underlying index they are tracking. This means that exchange rate fluctuations could have a negative or positive effect on returns.

**Liquidity risk**

Liquidity is provided by registered market-makers on the respective stock exchange where the ETF is listed, including Societe Generale. On exchange, liquidity may be limited as a result of a suspension in the underlying market represented by the Underlying index tracked by the ETF; a failure in the systems of one of the relevant stock exchanges, or other market-maker systems; or an abnormal trading situation or event.

**Concentration risk**

Thematic and Smart Beta ETFs select stocks or bonds for their portfolio from the original benchmark index. Where selection rules are extensive it can lead to a more concentrated portfolio where risk is spread over fewer stocks than the original benchmark.

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