Sustainable Investment Insights

QUARTERLY REPORT: OCTOBER 2023

FOR PROFESSIONAL INVESTORS ONLY

Tough environment for sustainable investment in Q3

After a strong SI performance during the H1 2023 risk rally, the macro backdrop was tougher in Q3, with "higher for longer" interest rate expectations becoming the dominant narrative. This led to a broad-based underperformance across SI equity indices, especially in green equities, with only the FTSE4Good performing in line with the market. The outperformance of Energy, driven by rising oil prices, was a notable headwind for the global SI strategies, which are underweight the industry.

Highlights

Energy

Energy stocks strongly outperformed in Q3 as continued oil production cuts in Saudi Arabia and Russia led to brent oil rising from $75 at the end of June, to $95 at the end of September. This resulted in Energy stocks being by far the best performing industry in the FTSE All World index and a headwind for SI indices, which are all underweight Energy.

Green equities

Green equities, as captured by the Environmental Opportunities index, were 2.8% behind the market in Q3. This ended a strong run, after all of the underperformance in 2022 had been recovered in H1 2023. The weakness came from profitability issues in global renewable energy equipment companies and issues in UK water utilities.

ESG

Like in 2022, ESG focused indices, such as FTSE4Good, were the best performing SI indices. A lower valuation, higher yield and smaller Energy underweight, all helped the index.

Japan

Mirroring the broader market, Japan was the clear outperformer in SI. All Japanese-focused SI strategies outperformed in Q3, driven by a strong selection in Consumer Discretionary.

Valuation

P/E valuations fell in Q3. Env Ops valuation particularly reduced through both price weakness and improving earnings growth expectations in 2024, putting it lower than its five-year average.

Macro

"Higher for longer" interest rates became the dominant market narrative as central banks continued to struggle with stubborn inflation. Longer dated yields rose, curves flattened and investors sought refuge in money markets.

Chart 1. 12-month relative performance Global SI indices, FTSE Oil Gas & Coal and FTSE Alternative Energy (TR, USD,%).
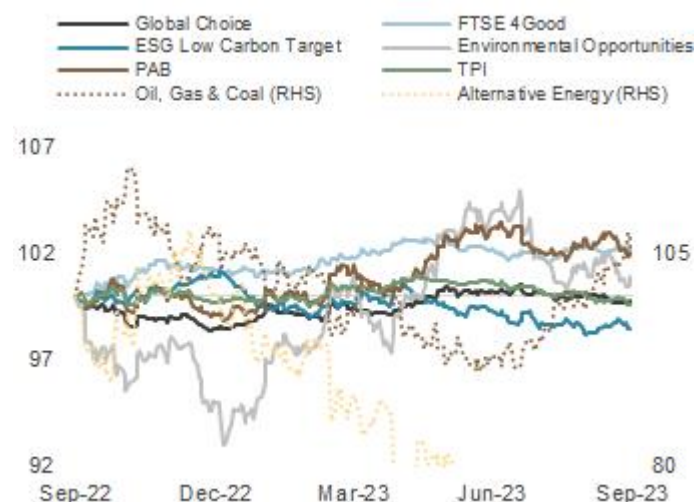
Note: Low Carbon covers developed markets.

-6.0%	-3.2%
FTSE Env Ops Global 3M (TR, USD)	FTSE4Good Global 3M (TR, USD)

0.3%	-9.8%
FTSE Env Ops Japan 3M (TR, USD)	FTSE Env Ops Europe 3M (TR, USD)

-4.3%	9.1%
FTSE Technology Sector Global 3M (TR, USD)	FTSE Energy Sector Global 3M (TR, USD)

Source: FTSE Russell / Refinitiv. Data as of September 29, 2023.

Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.
Index performance in this report is now in USD, unless otherwise noted

Risk and Climate Characteristics – as of September 29, 2023

Key Observations

Sustainable investing encompasses a range of strategies with different investment outcomes. In this section, we summarise the key risk and climate characteristics of the indices covered in this report. See next page for climate characteristic scores.

Global Choice divests from fossil fuels and other negative SI activities through product category screens. They obtain significant carbon intensity reductions (-44% to -59%) and underweights to Energy (-6% to -2%), except in the UK. Market-cap weighting the remaining stocks results in a risk profile close to the benchmark, global betas of around 1, and low tracking error (1.7%). The UK is the most diversified, holding 98% of benchmark stocks, while Europe & US are the least diversified, holding 82% of benchmark stocks.

FTSE4Good's best-in-class ESG strategy results in significant ESG score uplifts (24% to 4%). The global tracking error is low (1.8%). Europe has the lowest ESG uplift (4%), but the highest absolute ESG score. By contrast, EM has the highest ESG uplift (24%), with a high tracking error (6.5%) but a 0.9 beta.

Environmental Opportunities (EO) selects companies with significant green revenues (>20%), resulting in high active green revenues (absolute increase of 57% to 33%). However, the focus on Industrials, Utilities & Technology leads to higher carbon intensity in most regions (93% to -24%). The indices are highly concentrated (6% to 14% of benchmark) and have higher tracking errors (6% to 10%).

ESG Low Carbon Target targets carbon reduction and ESG uplifts. It achieves significant carbon intensity reduction (-52% to –37%) and ESG score uplift (18% to 10%). Tracking errors are moderate (2.1% to 3.0%) and betas close to 1, except in the UK (6.4% and 0.9).

Paris Aligned Benchmark (PAB) has multiple SI targets. It reduces carbon intensity (-63% to -53%), increases TPI MQ score (17% to 4%) , increases green revenues (absolute increase of 8% to 7%) and reduces Energy industry weighting (absolute reduction of -13% to -5%). Global tracking error is slightly higher than some other SI indices (2.2% to 5.8%) and the indices are more concentrated (49% to 27% of benchmark).

TPI Climate Transition (TPI) targets multiple climate related uplifts. Globally, it achieves a 49% reduction in carbon intensity, 1.5% increase in green revenues and 15% increase in TPI MQ, while the tracking error is relatively modest at 1.6%. EM has the highest tracking error at 3.7%, but also has the highest TPI MQ uplift of 31%.

Risk characteristics: In green are lower risk (tracking error, beta) and more diversified (high % of stocks in benchmark, low weight in Top 10) indices; in red are the more risky, concentrated indices.

	FTSE Russell SI Index	US	UK	Europe	Japan	APAC	Emerging	Developed	Global
Tracking Error	Global Choice	2.0%	1.7%	2.3%		1.3%	1.7%	1.9%	1.7%
	FTSE4Good	2.3%	1.8%	2.1%	9.4%	2.5%	6.5%	1.7%	1.8%
	Environmental Ops	8.8%	9.2%	6.6%	6.6%	9.5%			6.1%
	ESG Low Carbon Target	2.7%	6.4%	3.0%	2.4%	2.4%	2.4%	2.1%	
	Paris Aligned		5.8%				3.3%	2.2%	2.5%
	Transition Pathway	1.9%			2.5%		3.7%	1.7%	1.6%
Beta	Global Choice	1.0	1.0	1.0		1.0	1.0	1.0	1.0
	FTSE4Good	1.0	1.0	1.0	0.8	1.0	0.9	1.0	1.0
	Environmental Ops	1.1	1.0	1.1	1.1	1.0			1.0
	ESG Low Carbon Target	1.0	0.9	1.0	1.0	1.0	1.0	1.0	
	Paris Aligned		1.0				1.0	1.0	1.0
	Transition Pathway	1.0			1.0		1.0	1.0	1.0
Number of stocks as % of benchmark	Global Choice	82.5%	98.2%	82.4%		87.7%	84.2%	84.6%	84.4%
	FTSE4Good	44.4%	37.1%	69.6%	45.7%	44.4%	27.8%	50.8%	39.7%
	Environmental Ops	8.7%	7.3%	13.5%	8.7%	5.9%			7.8%
	ESG Low Carbon Target	76.5%	57.6%	54.5%	63.5%	42.7%	46.9%	43.6%	
	Paris Aligned		44.1%				48.7%	40.4%	27.1%
	Transition Pathway	59.0%			67.7%		46.5%	52.1%	35.8%
Weight in Top 10 relative to benchmark	Global Choice	120.8%	99.8%	128.4%		114.1%	98.2%	124.8%	125.1%
	FTSE4Good	155.5%	121.3%	121.0%	136.5%	124.4%	127.2%	139.5%	143.1%
	Environmental Ops	288.7%	145.0%	251.9%	349.1%	307.0%			344.4%
	ESG Low Carbon Target	166.8%	140.6%	193.3%	191.0%	166.0%	141.2%	181.3%	
	Paris Aligned		107.9%				121.1%	181.9%	188.7%
	Transition Pathway	132.7%			159.9%		124.4%	145.2%	136.7%

Note: Tracking error and Beta calculations are based on five-years of daily data, all other calculations are 12-month averages.

Risk and Climate Characteristics – as of September 29, 2023

Climate Characteristics: In green are indices achieving the highest uplift relative to the benchmark in the E,S,G and ESG Score, Green Revenues, TPI MQ and the largest carbon reduction. These reflect the different objectives embedded in the indices.

	FTSE Russell SI Index	US	UK	Europe	Japan	APAC	Emerging	Developed	Global
Active E score	Global Choice	2.2%	-0.1%	-4.5%		-1.6%	-2.8%	0.4%	0.1%
	FTSE4Good	18.5%	10.1%	4.6%	14.8%	12.5%	29.5%	15.0%	16.5%
	Environmental Ops	28.9%	-23.0%	0.1%	12.4%	30.0%			23.5%
	ESG Low Carbon Target	25.6%	18.6%	24.4%	21.4%	23.5%	22.5%	26.7%	
	Paris Aligned		2.5%				12.5%	8.4%	10.4%
	Transition Pathway	13.1%			12.7%		21.7%	12.6%	12.6%
Active S score	Global Choice	3.3%	-0.6%	-1.2%		-0.8%	-0.8%	1.7%	1.5%
	FTSE4Good	13.4%	9.5%	3.9%	15.2%	12.5%	29.4%	12.0%	13.5%
	Environmental Ops	17.4%	-17.2%	-4.4%	-4.6%	27.6%			13.5%
	ESG Low Carbon Target	19.1%	10.9%	13.0%	20.2%	20.0%	21.4%	18.6%	
	Paris Aligned		0.7%				11.6%	4.8%	7.3%
	Transition Pathway	7.7%			7.6%		15.4%	6.6%	7.4%
Active G score	Global Choice	-0.2%	-0.7%	-2.2%		-1.6%	-0.7%	-1.0%	-1.0%
	FTSE4Good	5.9%	7.7%	2.1%	10.1%	9.4%	15.6%	6.4%	7.2%
	Environmental Ops	12.0%	-10.0%	-1.7%	-1.3%	11.3%			8.1%
	ESG Low Carbon Target	10.3%	2.3%	5.7%	13.5%	9.4%	9.7%	9.9%	
	Paris Aligned		-1.8%				8.3%	0.0%	1.4%
	Transition Pathway	1.4%			5.0%		10.2%	1.9%	2.6%
Active ESG score	Global Choice	1.8%	-0.6%	-2.5%		-1.3%	-1.3%	0.4%	0.3%
	FTSE4Good	12.5%	9.1%	3.5%	13.4%	11.5%	24.0%	11.1%	12.3%
	Environmental Ops	19.0%	-17.0%	-2.3%	2.2%	21.4%			14.5%
	ESG Low Carbon Target	18.2%	10.1%	13.9%	18.4%	17.1%	17.1%	18.2%	
	Paris Aligned		0.1%				10.3%	4.3%	6.2%
	Transition Pathway	7.2%			8.4%		14.9%	6.9%	7.3%
Carbon Reduction	Global Choice	-59.1%	5.2%	-53.0%		-47.7%	-43.5%	-56.7%	-54.0%
	FTSE4Good	-35.4%	9.7%	-3.3%	4.3%	-7.3%	11.5%	-24.0%	-19.1%
	Environmental Ops	50.6%	-23.7%	93.3%	29.0%	56.7%			53.5%
	ESG Low Carbon Target	-51.8%	-36.9%	-47.0%	-48.0%	-45.0%	-42.5%	-50.0%	
	Paris Aligned		-53.1%				-61.1%	-63.4%	-62.7%
	Transition Pathway	-44.2%			-32.1%		-41.9%	-55.0%	-49.0%
Active Green Revenues	Global Choice	0.11	0.22	-1.27		-0.46	0.77	-0.06	0.03
	FTSE4Good	-0.28	-0.20	0.10	-0.99	-0.76	3.38	-0.28	0.02
	Environmental Ops	33.45	56.98	34.06	36.25	42.54			35.62
	ESG Low Carbon Target	-0.26	0.30	3.00	-0.91	1.83	2.45	0.22	
	Paris Aligned		7.82				6.70	7.06	7.36
	Transition Pathway	0.11			3.77		3.66	0.72	1.47
Active TPI Management Quality Score	Global Choice	-1.4%	0.5%	-5.3%		-2.8%	-3.7%	-2.5%	-2.6%
	FTSE4Good	13.3%	7.8%	3.4%	11.2%	12.1%	26.1%	11.4%	12.9%
	Environmental Ops	8.4%	-19.3%	-0.9%	15.8%	20.5%			9.3%
	ESG Low Carbon Target	15.1%	5.7%	11.8%	15.5%	19.2%	19.1%	15.8%	
	Paris Aligned		4.2%				17.3%	7.6%	8.9%
	Transition Pathway	13.7%			14.4%		31.0%	14.1%	14.7%

Note: All calculations are 12-month averages.

*TPI MQ is the TPI Management Quality score. Carbon reductions are normalised by revenues, except for the PAB benchmarks, where European law requires normalisation by EVIC. ESG Low Carbon Target index series target the minimum of a standard deviation of market capitalisation averaged index ESG score and a 20% uplift.

Macroeconomic Backdrop – Q3 2023

Yields rose and curves flattened as markets digested more hawkish commentary from central bankers and investors focused on "higher for longer" rates, rather than any near term falls. The rising yields came in spite of recent falls in inflation, with further declines from current inflation levels likely to be more challenging, given headwinds such as the renewed rise in energy prices and the divergent goals of developed markets attempting to reduce inflation, whilst China attempts to increase inflation.

Equity markets underperformed in Q3, with a negative performance observed in all regions, especially in developed markets, with Japan registering the best performance. The strong Growth recovery seen in US markets in H1 sharply reduced in Q3 2023, with Growth and Value showing similar performances at the end of the quarter.

Energy prices sharply increased, primarily in oil, but also in European gas, due to supply constraints as Saudi Arabia announced production cuts. Despite a weak demand outlook, fears of tight supply in H2 led brent oil to rise from $75 to $95 in Q3. This resulted in Energy being by far the best performing industry in the FTSE All World.

Uncertainty in outlook underpinned by continuing geopolitical tensions have led investors to be cautious, with funds flowing to money markets (Chart 3).

For further in depth analysis of the macro background see Asset Allocation Insights - September 2023 | LSEG

Chart 1: US 10Y & 2Y Treasury Yields – yields rose and curve flattened.
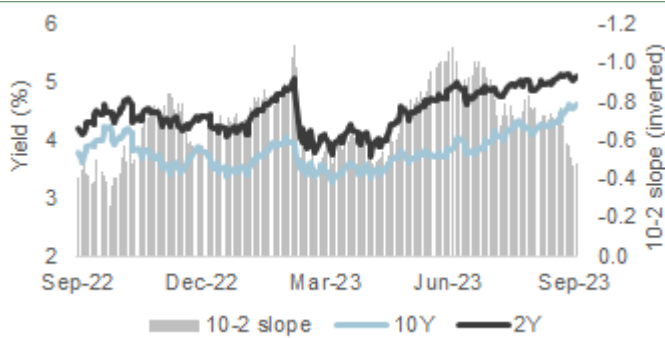
Chart 2: Regional Inflation – US and European inflation fell, while it rose in Japan and flat lined in China.
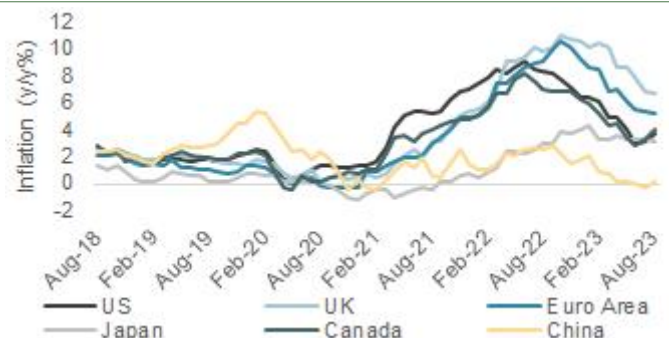
Chart 3: Global Bond, Equity & Money Market Fund Flows – cautious investors hide in money markets.
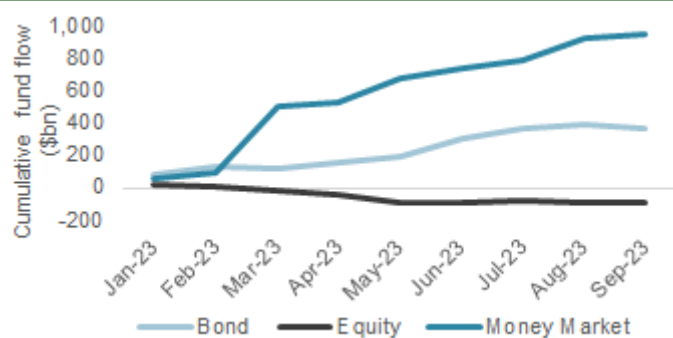
Chart 4: Russell 1000 Growth vs Value – H1 23 growth recovery petered out in Q3.
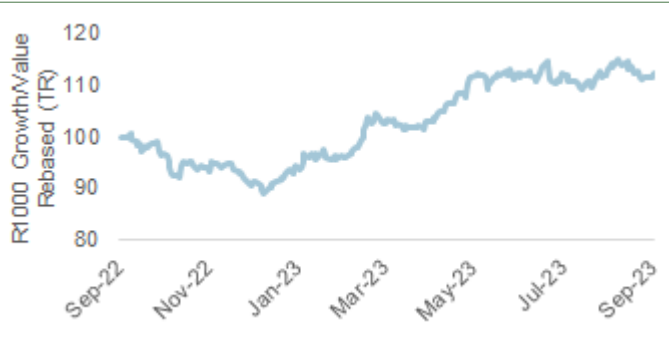
Chart 5: Brent Oil Price – oil price rose strongly over supply concerns.

Chart 6: FTSE All World Q3 Industry Performance – Energy was the best performing sector by far.
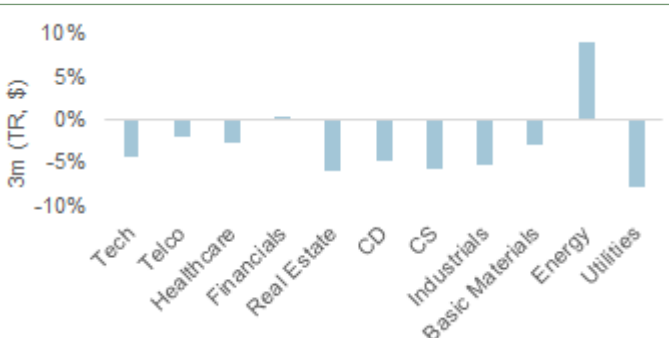
SI Backdrop – Q3 2023

Green equities underperformed, particularly from renewable & alternative energy, which has seen renewable energy equipment providers come under significant profitability pressure, as supply chain issues and higher interest rates weighed on costs. However, the market for renewables has continued to grow in 2022 and 2023, and renewables companies have seen revenues increase even as profitability declined. Looking ahead, analysts see 2022 as having been the low point of profitability, with a significant improvement expected in 2024, as government support for clean energy starts to have an impact. Water stocks were also weak as UK water utilities sold off. Indications of pressure in the renewable energy market can also be seen in the marked slowing of the disinflation of clean energy equipment prices, although prices have started to slightly fall again in Q1 and Q2.

Weakness in green equities in Q3 was not unexpected, given the speed of the recovery in H1 2023 which placed the twelve month trailing relative performance close to 10% at the end of Q2, which has tended to be a high point in the cycle historically (except the exceptional 2020/21 period).

Issuance of green bonds also slowed in Q3, notably in government green bond issuance, after a bumper H1 2023, .

SI fund flow was weak in Q3, however we believe this is driven by investor caution, rather than a lack of SI interest. The broader equity market, the key asset class for SI, experienced negative fund flows, as investors turned to money markets, where SI strategies have a limited presence.

Chart 1: Env Ops Green Sectors relative performance – weakness in renewable energy and waste.
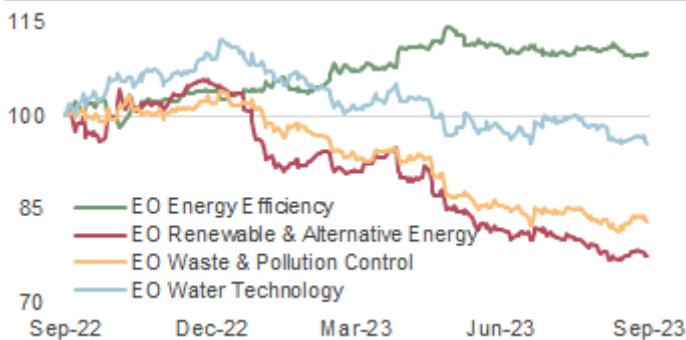
Chart 2: Env Ops 12m rolling relative performance – Env Ops was close to the top of cycle at the end of Q2 23.
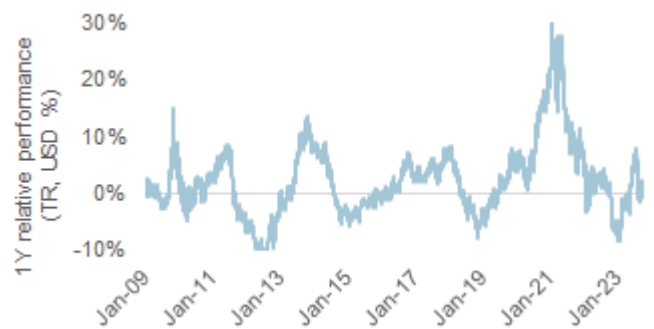
Chart 3: Green Bond Issuance – Q3 sees weak green bond issuance.
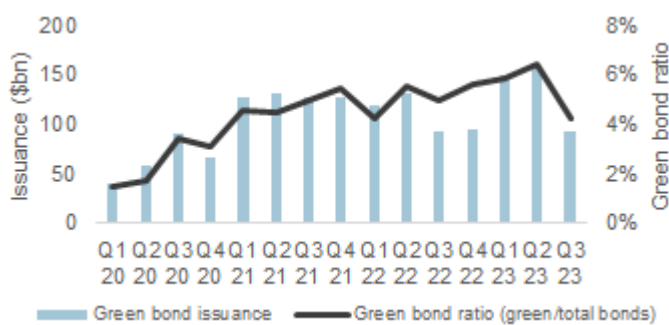
Chart 4: Sustainable Investment Bond & Equity Fund Flow – 2023 experience low SI fund flow.
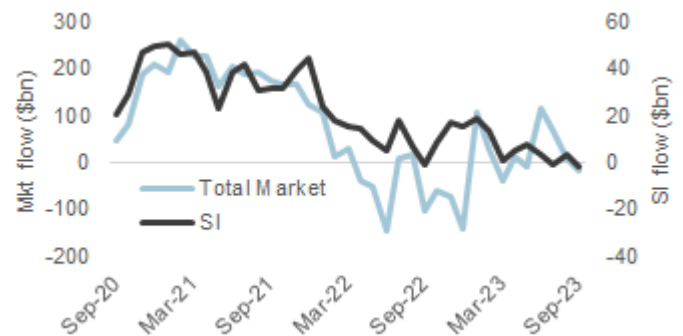
Chart 5: FTSE All World Alternative Energy Constituents Revenue & Profitability – revenue grows, while profit is weak.
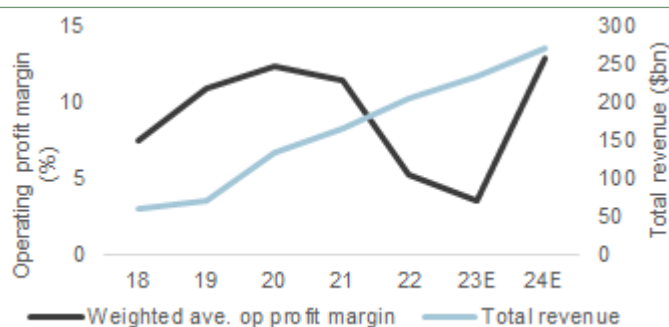
Chart 6: Clean Energy Equipment Prices[1] – falling prices of clean energy equipment slowed.
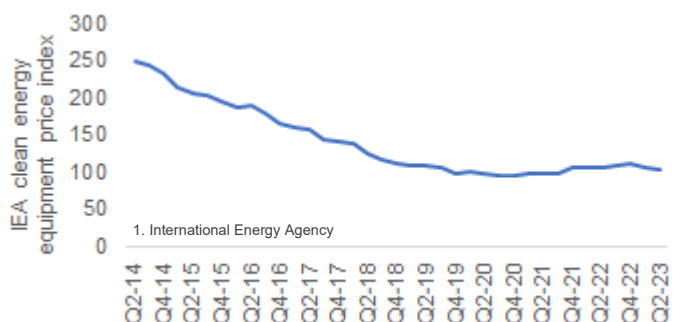
1. International Energy Agency

Absolute Returns – 3M & 12M (TR, USD %) as of September 29, 2023

Q3 was marked by rising rates as "higher for longer" became the dominant scenario, concerns mounted over weakening economic growth, particularly in China, and oil prices increased sharply in response to supply concerns. All regions saw negative returns in Q3, with the developed markets, particularly Europe and US, performing the worst, while Japan performed best, as investor saw benefits to the economy from currency movements and rising inflation. Japanese SI strategies were the only ones which posted positive returns, while Environmental Ops strategies performed the worst across multiple regions.

Regional 3M Absolute Returns* (TR, USD %). Japan was the strongest performer in a weak market.

Region	Return
Japan	-1.1
Emerging	-1.5
UK	-1.7
Dev APac	-2.6
US	-3.0
Global	-3.1
Developed	-3.3
Europe	-4.9
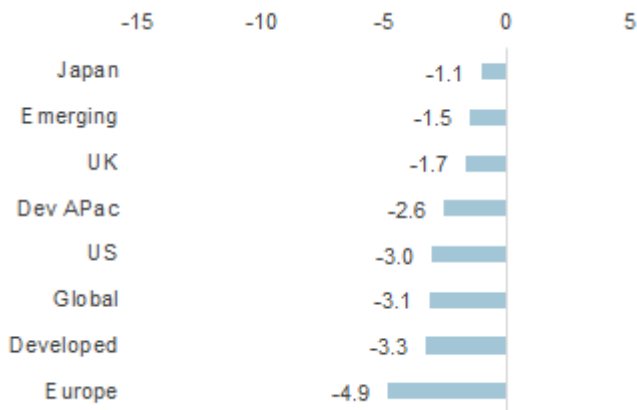
Regional 12M Absolute Returns* (TR, USD %). Europe remains the strongest region, despite a weak Q3.

Region	Return
Europe	30.0
UK	26.5
Japan	25.7
Developed	22.7
US	21.8
Global	21.5
Dev APac	21.2
Emerging	11.1
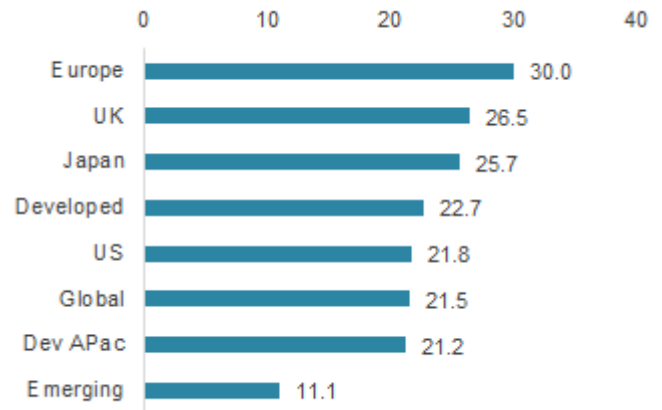
SI Index 3M Absolute Returns (TR, USD %). Japan strategies performed best, whilst Env Ops was weak across regions.

Index	Return
Japan TPI	0.5
Japan EnvOps	0.3
Japan Low Carb	0.2
Japan 4Good	0.1
APac 4Good	-1.8
EM Choice	-1.9
UK Choice	-2.1
UK Low Carb	-2.6
EM 4Good	-2.6
EM PAB	-2.6
EM TPI	-2.8
APac Choice	-2.8
US 4Good	-3.0
Global 4Good	-3.2
Dev 4Good	-3.2
UK 4Good	-3.2
UK PAB	-3.5
EM Low Carb	-3.5
Global Choice	-3.6
USA Choice	-3.7
Dev PAB	-3.8
Dev Choice	-3.8
APac Low Carb	-4.0
Dev Low Carb	-4.1
US Low Carb	-4.1
Global PAB	-4.2
US TPI	-4.2
Global TPI	-4.2
Developed TPI	-4.3
Euro 4Good	-4.8
Euro Choice	-4.9
USA EnvOps	-5.3
Eur Low Carb	-5.5
Global EnvOps	-6.0
UK EnvOps	-6.2
APac EnvOps	-9.0
Euro EnvOps	-9.8

SI Index 12M Absolute Returns (TR, USD %). Europe performed best and EM worst across multiple strategies.

Index	Return
Euro EnvOps	32.4
Eur Low Carb	30.3
Euro 4Good	30.3
Japan 4Good	29.8
Euro Choice	28.8
Japan TPI	28.3
Japan Low Carb	28.1
Dev PAB	25.8
UK 4Good	25.5
Japan EnvOps	25.5
Dev 4Good	25.2
UK Choice	25.0
US 4Good	24.7
Global 4Good	24.2
Global PAB	24.0
APac 4Good	23.0
UK PAB	22.3
Global EnvOps	21.9
Dev Choice	21.8
USA Choice	21.4
USA EnvOps	21.2
Developed TPI	21.2
Global TPI	21.0
Dev Low Carb	20.9
Global Choice	20.6
US TPI	19.9
UK Low Carb	19.7
US Low Carb	19.2
APac Choice	19.0
UK EnvOps	18.8
APac EnvOps	17.3
EM 4Good	13.9
APac Low Carb	13.4
EM TPI	12.5
EM PAB	10.9
EM Choice	10.4
EM Low Carb	10.2

*The Broad regional indices above are: FTSE USA, FTSE UK, FTSE Developed Europe, FTSE Japan, FTSE Developed Asia-Pacific and FTSE Emerging Markets. Benchmarks for the listed SI indices may vary. Appendix 1 shows the appropriate benchmark and market-cap coverage for the SI indices covered in this report.

SI Index Valuation – September 29, 2023

A weak market, combined with SI underperformance, led to lower P/E valuations across all SI strategies in Q3. This leaves them all below their five-year average P/E, with Environmental Ops notably low vs history. Environmental Ops and PAB have seen their premium to the market fall, in part due to expected improvements in profitability in 2024. They now trade at a similar P/E and P/B. In contrast, the FTSE4Good premium has risen, and is above its five-year average. Valuations fell in developed markets, notably in Europe, while they rose in Japan. The US is the most expensive market, although the SI strategies show limited premium to the US market, while Emerging Markets are the cheapest. P/B also fell for all SI strategies in Q3, while yields rose, with those for FTSE4Good and TPI ending the period higher than the market.

Global Markets – 12-month forward factor P/E ratios

Legend: Benchmark, Choice, 4Good, EnvOps, PAB, TPI

Global Markets – 12-month forward factor Price to Book ratios

Legend: Benchmark, Choice, 4Good, EnvOps, PAB, TPI

Global Markets – Dividend Yield

Legend: Benchmark, Choice, 4Good, EnvOps, PAB, TPI
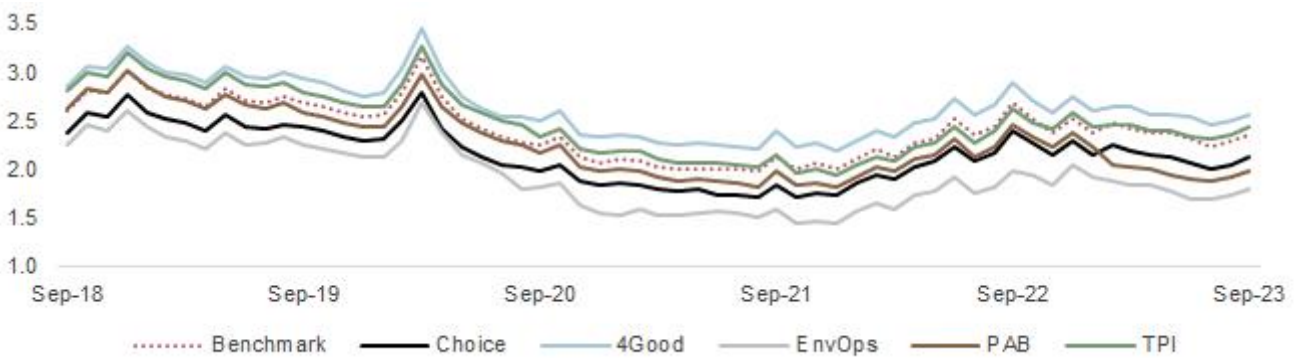
12-month forward P/E vs history

Legend: Average 5-year, 29/09/2023
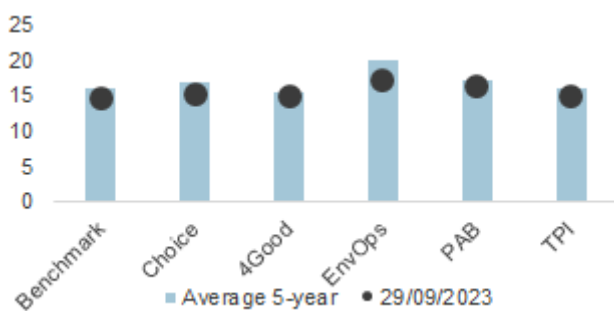
12-month forward P/E premium vs history
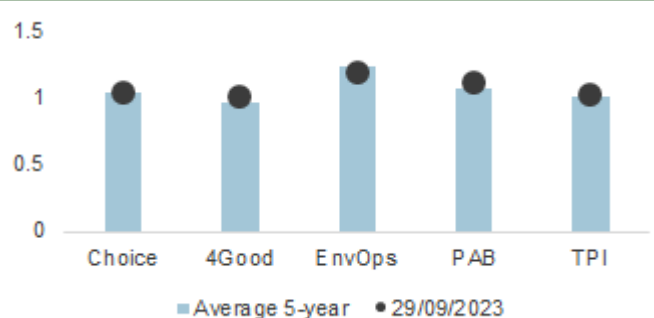
Legend: Average 5-year, 29/09/2023

FTSE Global Choice indices – Q3 2023

Global Choice underperformed at the global level, with all geographies underperforming, except in Europe. The majority of underperformance came from the allocation in Energy, where it is 5% underweight. Europe's outperformance came from positive allocation in Financials and selection in Consumer Discretionary. US underperformance was driven by allocation in Energy, though in EM, it was exacerbated by selection in Basic Materials and Energy. In addition to exclusions, Global Choice indices are effective at reducing carbon intensity across all regions, except in the UK, through underweights in Energy, Utilities and Basic Materials.

Chart 1: Active performance (TR, USD %)
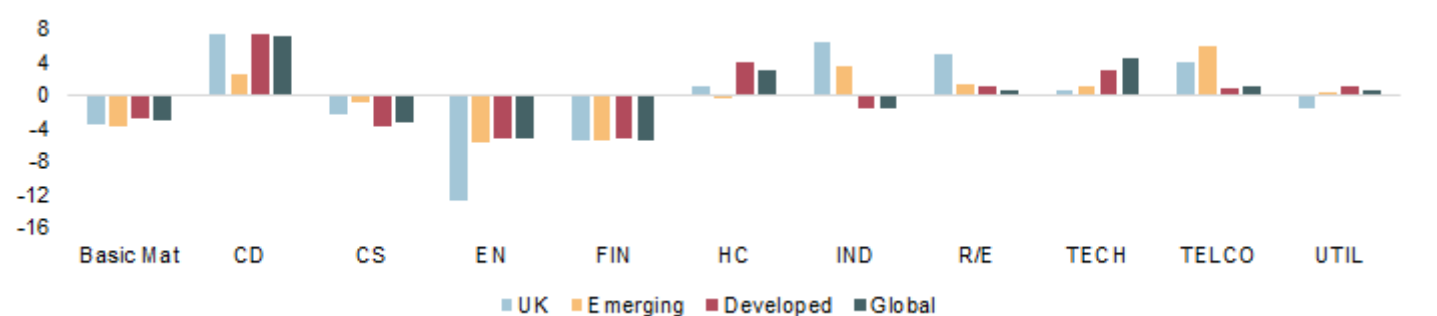

Chart 2: Global Choice carbon emissions / revenues
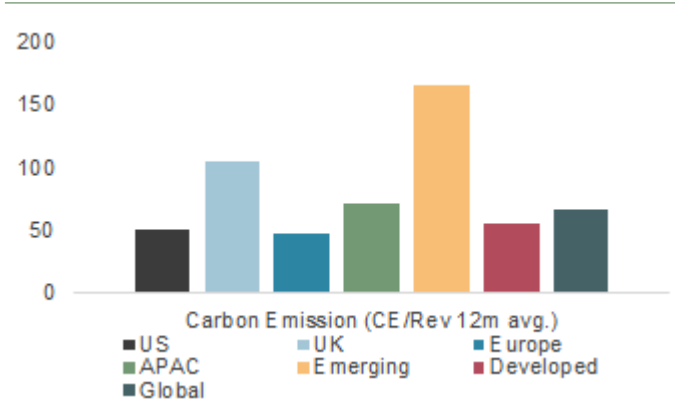
Chart 3: 3M Attribution of global index (%)
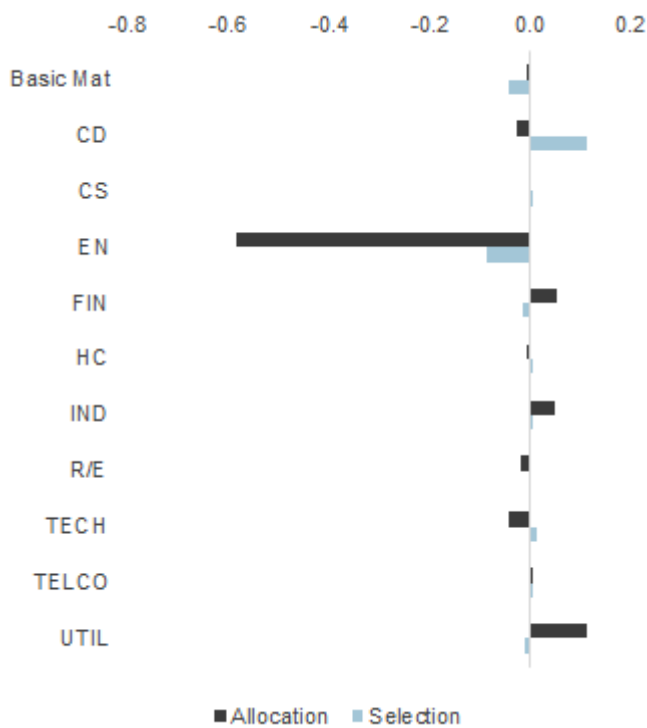
Chart 4 : Contribution to carbon reduction (%)
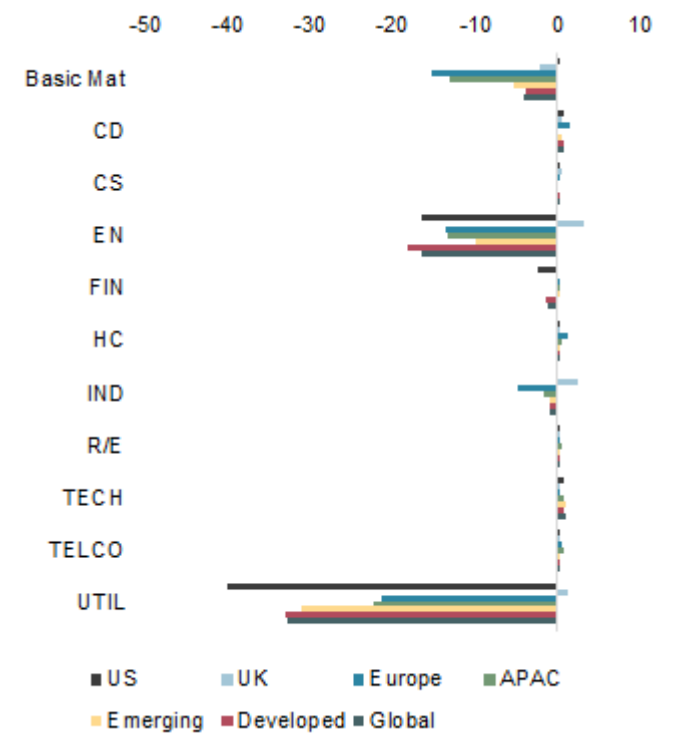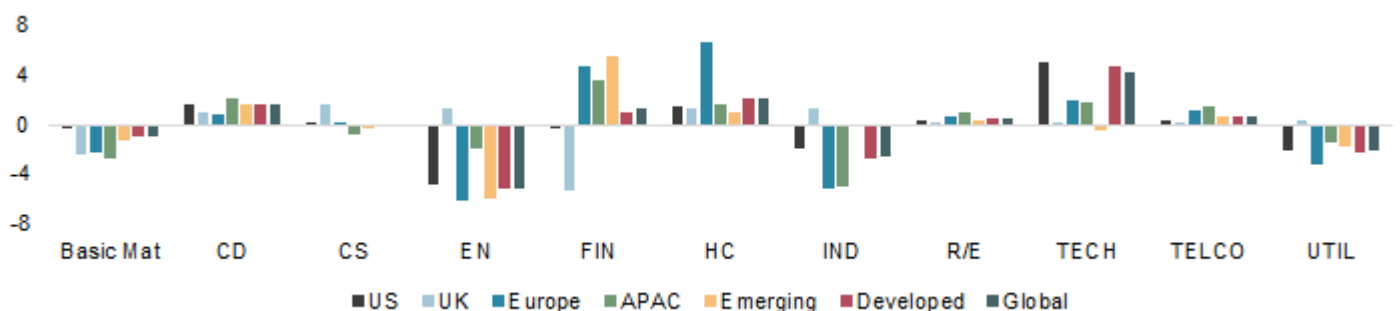
Chart 5: Active industry weights (%)

FTSE4Good indices – Q3 2023

FTSE4Good performance was in line with the market in Q3, with positive contributions from US, Europe, Japan and APAC, while those in the UK and EM were negative. Performance was mixed between allocation and selection, with negative selection in Consumer Discretionary and positive selection in Healthcare making the largest impact. Allocation to Energy had a minor effect, unlike in other SI strategies. Japanese performance came from an overweight allocation to Financials and selection in Industrials. EM underperformance came from selection across multiple industries. UK, European and Japanese indices have the highest ESG scores, while EM has the lowest. The index's ESG uplift came from Tech and Financials, which are the main industry overweights.

Chart 1: Active performance (TR, USD %)

Chart 2: FTSE4Good ESG scores

Chart 3: 3M Attribution of global index (TR, USD %)
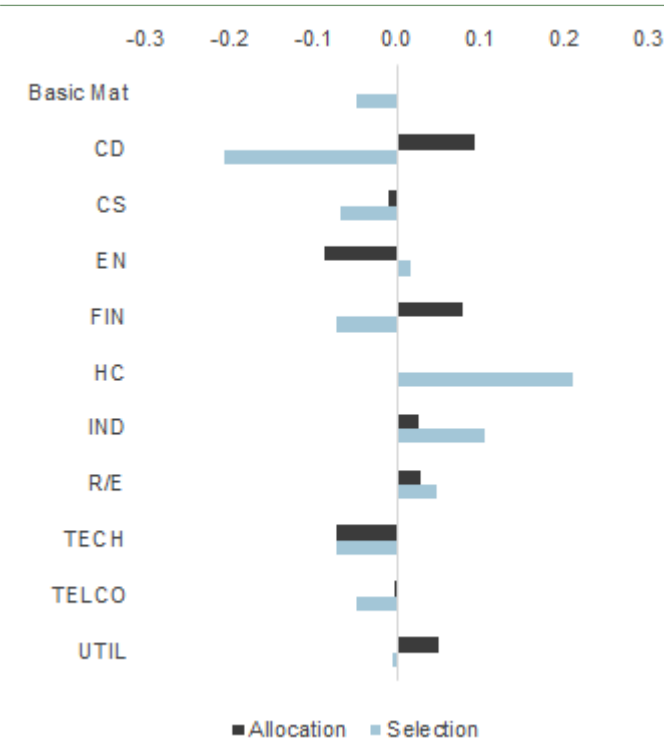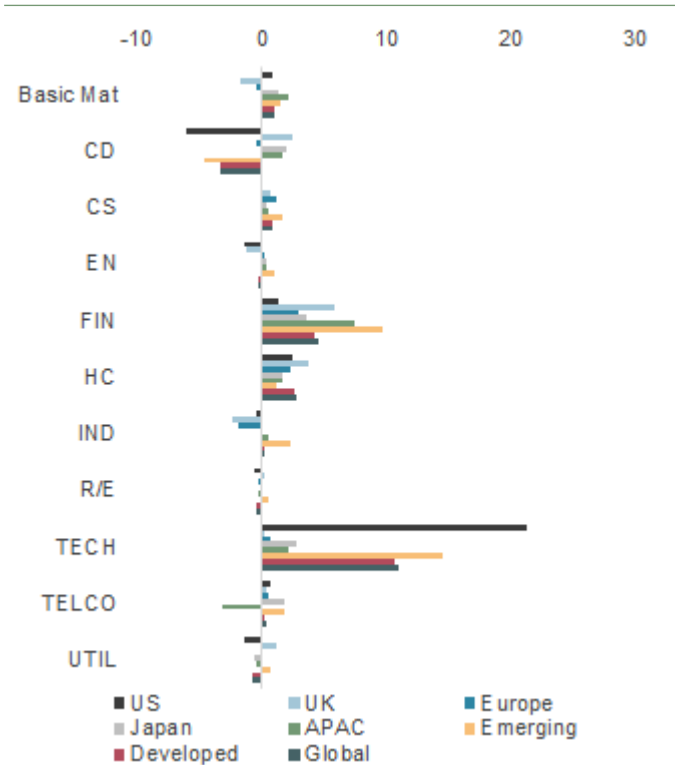
Chart 4: Contribution to ESG uplift (%)
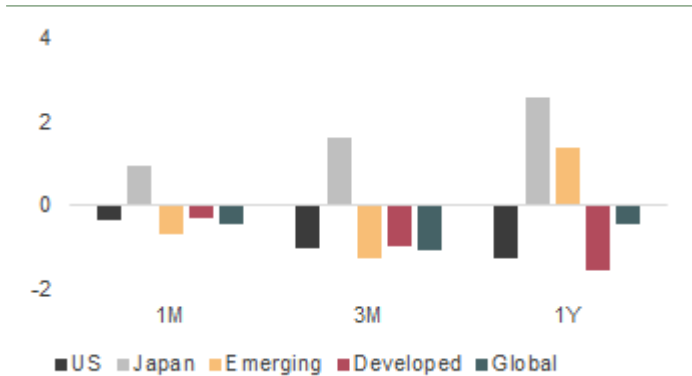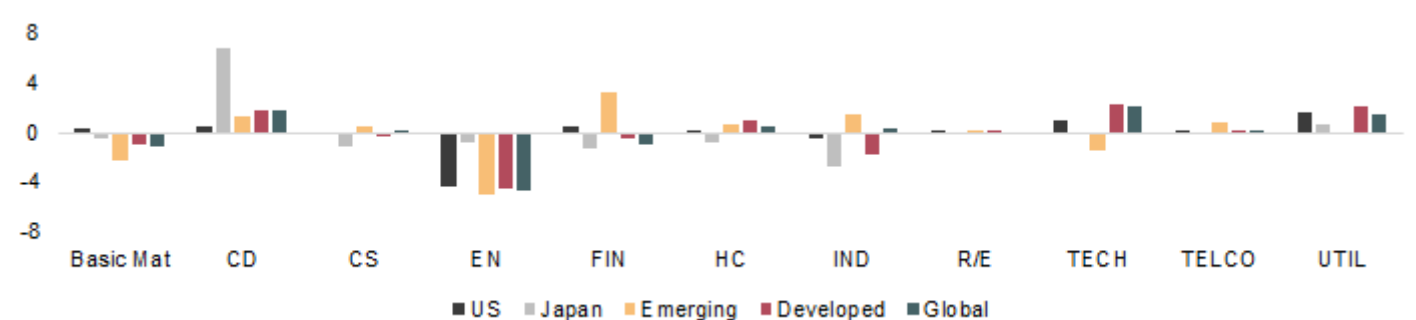

Chart 5: Active industry weights (%)
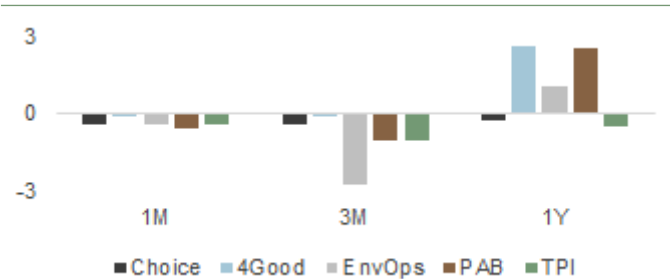
FTSE Environmental Opportunities (EO) indices – Q3 2023

EO indices saw a sharp underperformance in Q3, with weakness across all geographies, except Japan, notably in APAC and Europe. Global under performance came particularly from selection in Technology and an underweight allocation in Energy and Financials. In terms of green sectors, weakness came from Renewable & Alternative Energy and the Water sector. Japanese performance came from strong selection in Consumer Discretionary. Underperformance in Europe came from allocation in Financials and Industrials and selection in Energy, whilst in APAC, it was focused on negative selection in Technology. EO indices are heavily overweight Industrials, Technology and Utilities (& Consumer Discretionary in Japan).

Chart 1: Active Performance (TR, USD %)

■US ■UK ■Europe ■Japan ■APAC ■Global

Chart 2: Environmental Ops Green Revenues scores

■US ■UK ■Europe ■Japan ■APAC ■Global

Chart 3: 3M Attribution of global index (TR, USD %)

■Allocation ■Selection
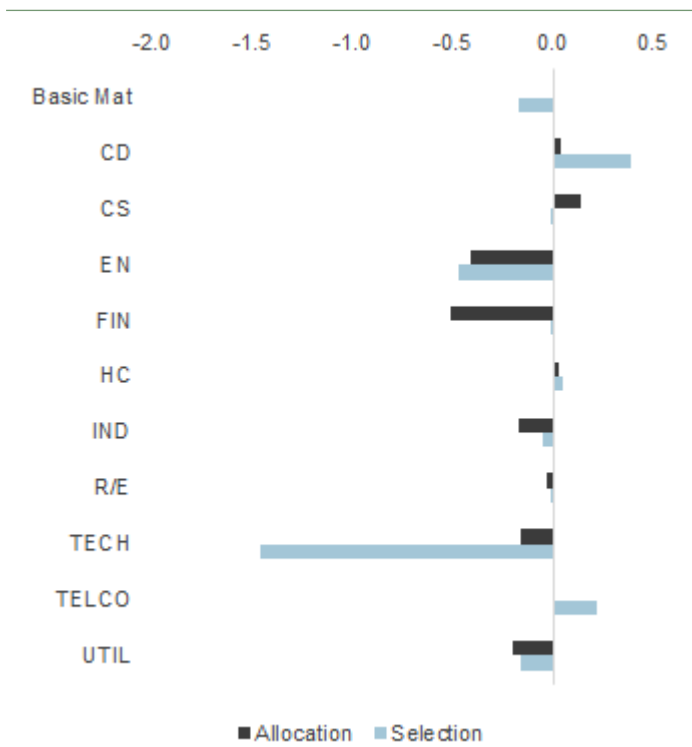
Chart 4: Contribution to Green Revenues uplift (%)
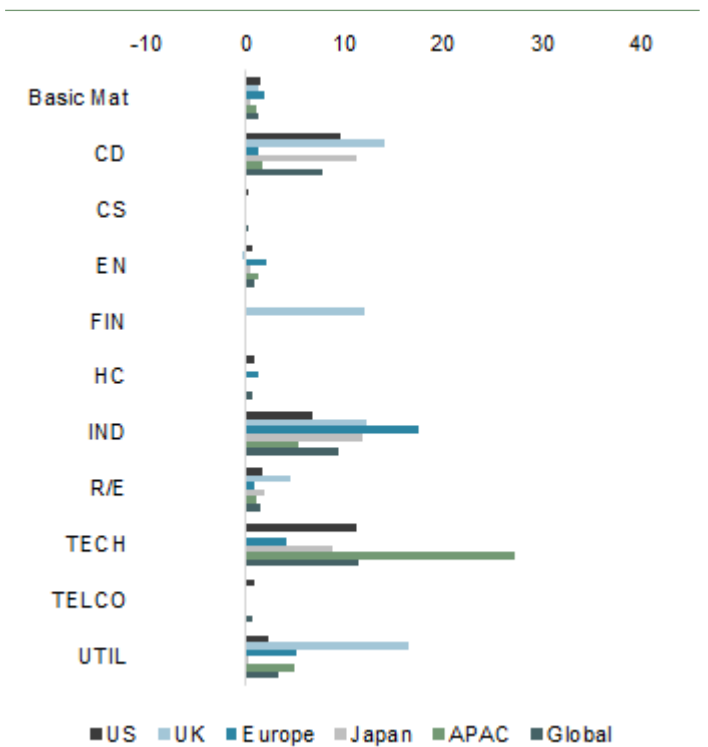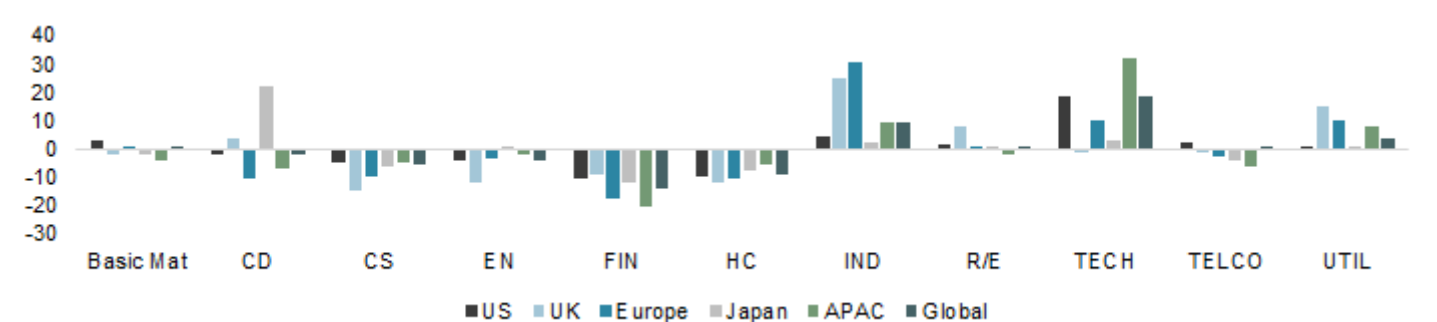
■US ■UK ■Europe ■Japan ■APAC ■Global

Chart 5: Active industry weights (%)

■US ■UK ■Europe ■Japan ■APAC ■Global

FTSE ESG Low Carbon Target Exposure indices – Q3 2023

FTSE ESG Low Carbon underperformed in the developed markets in Q3, with all geographies underperforming, except Japan. The largest driver of underperformance was allocation in Energy, which is 2.3% underweight and selection in Finance and Technology. Performance in Japan came from selection in Consumer Discretionary and Industrials. Underperformance in EM came mostly from negative selection from multiple industries, led by Financials. ESG Low Carbon generates both lower carbon intensities and higher ESG scores from multiple industries, particularly Financials, Tech and Telecoms.

Chart 1: Active Performance (TR, USD %)

Chart 2: ESG Low Carbon ESG scores

Chart 3: 3M Attribution of developed index (TR, USD %)
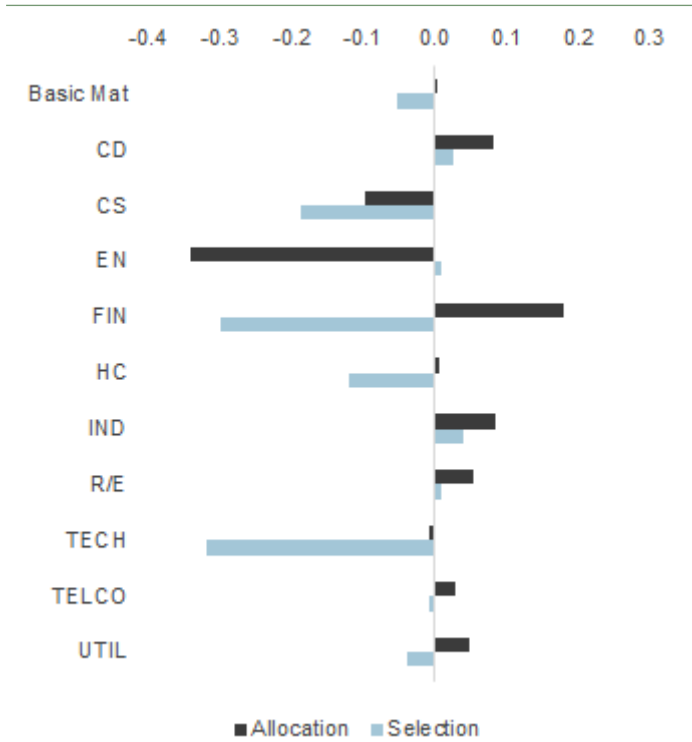
Chart 4: Contribution to ESG uplift (%)
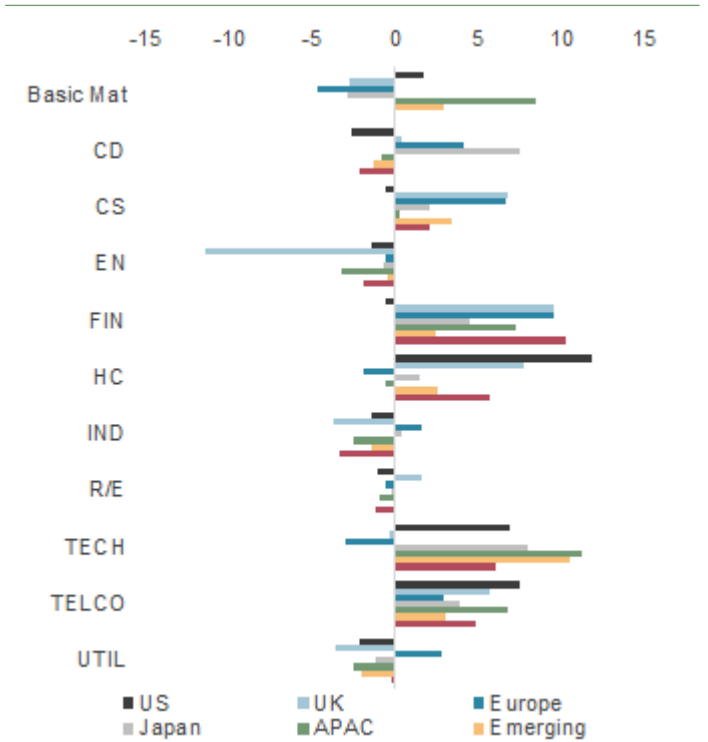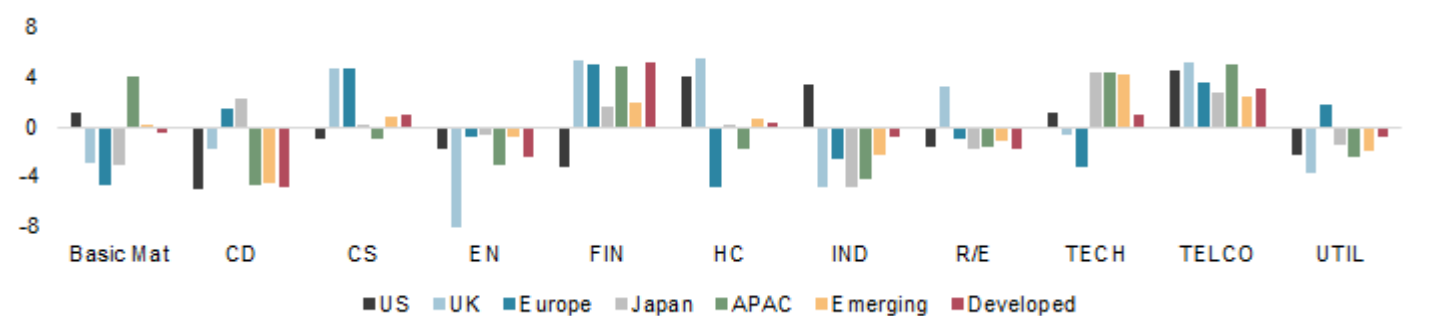
Chart 5: Active industry weights (%)

FTSE EU Paris-Aligned Benchmark (PAB) indices – Q3 2023

Paris-Aligned Benchmark underperformed at the global level and across all geographies in Q3. The predominant driver of underperformance was negative allocation in Energy, which is 5% underweight. Underperformance in UK was also driven by underweight allocation in Energy, partially compensated by positive selection in Consumer Discretionary. Underperformance in EM was driven by allocation in Energy and selection in Industrials. The carbon reduction in PAB comes primarily from underweights in Energy and Basic Materials and a tilting towards lower carbon Utilities.

Chart 1: Active Performance (TR, USD %)

Chart 2: PAB Carbon emission / EVIC

Chart 3: 3M Attribution of global index (TR, USD %)
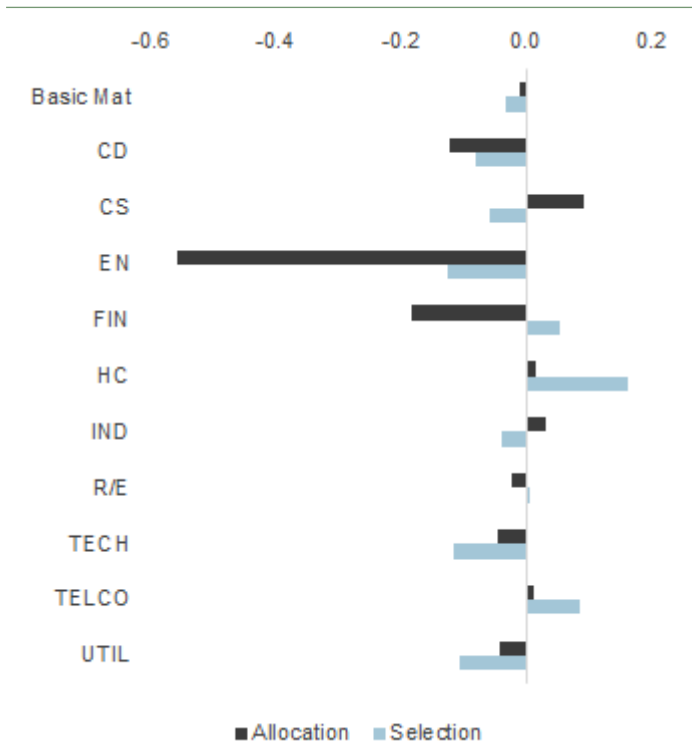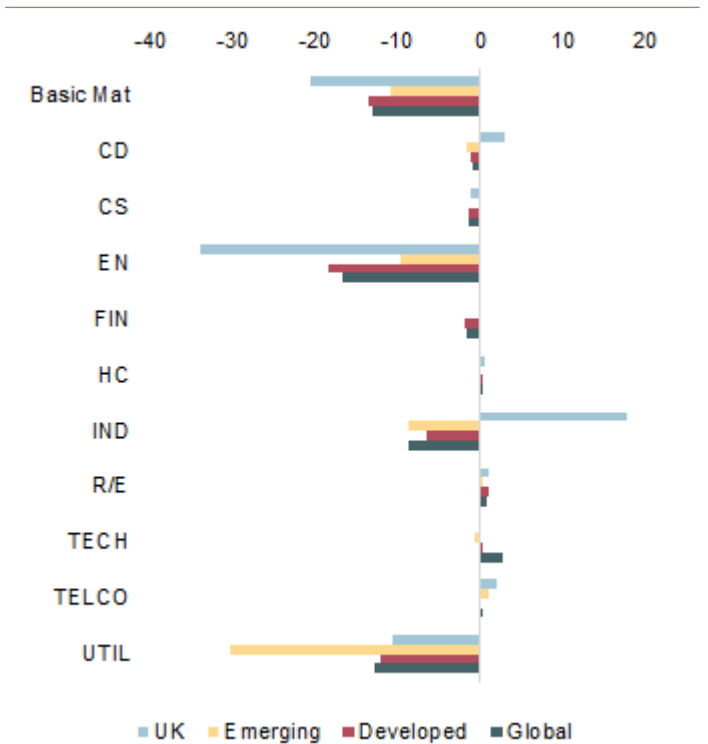
Chart 4: Contribution to Carbon reduction (%)

Chart 5: Active industry weights (%)

FTSE TPI Climate Transition indices – Q3 2023

TPI indices underperformed at the global level in Q3, with underperformance in all geographies, except Japan. Global under-performance was driven by allocation in Energy, where TPI is 5% underweight. Japan's outperformance was driven by positive selection in Consumer Discretionary, as well as the lowest underweight in Energy of all the TPI indices at -0.8%. TPI MQ scores are similar across developed markets, while EM is materially lower. Uplift came from a wide range of industries, offset by the underweight in Energy.

Chart 1: Active Performance (TR, USD %)

■ US ▨ Japan ▨ Emerging ▨ Developed ▨ Global

Chart 2: TPI Index TPI Management Quality Score

TPI MQ score (12m avg.)

■ US ▨ Japan ▨ Emerging ▨ Developed ▨ Global

Chart 3: Attribution of global index (TR, USD %)

■ Allocation ▨ Selection
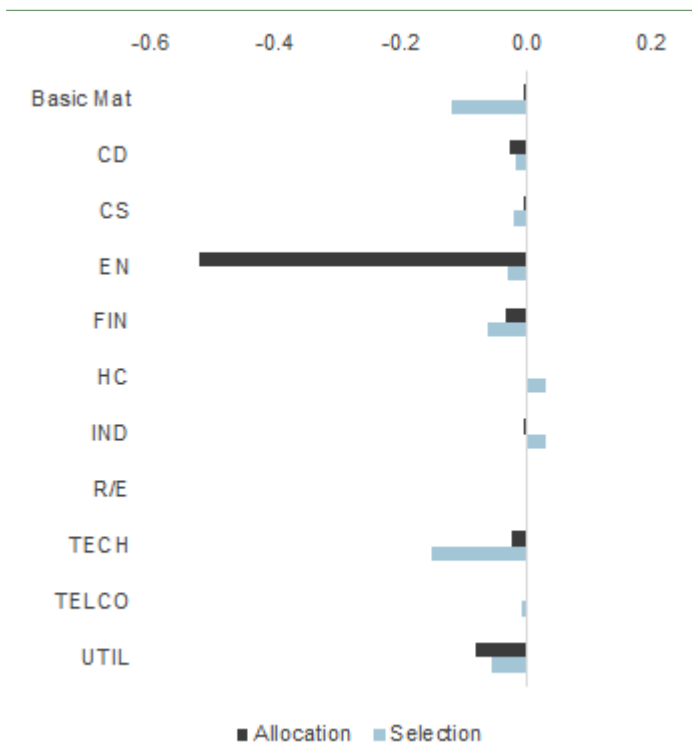
Chart 4: Contribution to TPI MQ uplift (%)
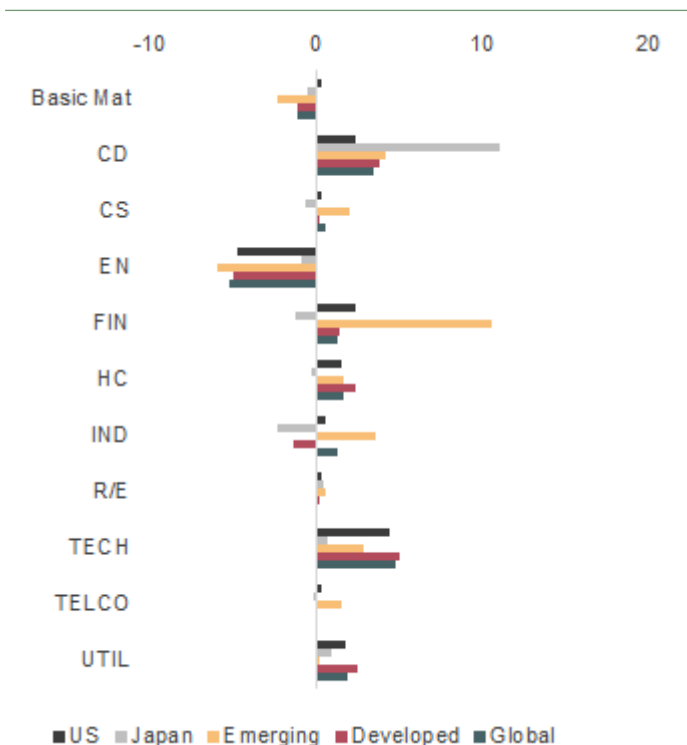
■ US ▨ Japan ▨ Emerging ▨ Developed ▨ Global

Chart 5: Active industry weights (%)

■ US ▨ Japan ▨ Emerging ▨ Developed ▨ Global

Global Index Comparisons – Q3 2023

Global SI strategies underperformed the market in Q3. The best performer was FTSE4Good, which was in line with the market, driven by the smallest underweight to Energy (-0.8%) of all SI strategies. The other SI strategies were impacted by a significant negative allocation in Energy, in which they are all underweight. Env Ops, the worst performer, was also hit by negative selection in Tech. Globally, SI strategies are trading at close to their 5-year relative P/E premium, except PAB and FTSE4Good, which are slightly higher. During Q3, Env Ops and PAB saw particular falls in premium, while FTSE4Good premium increased. FTSE4Good is the cheapest strategy, whereas Env Ops remains the most expensive.

Chart 1: Active Performance (TR, USD %)

Chart 2: Index tracking error (%)

Chart 3: Active Industry weights (3M ave %)

Chart 4: 3m Industry allocation effect (TR, USD %)
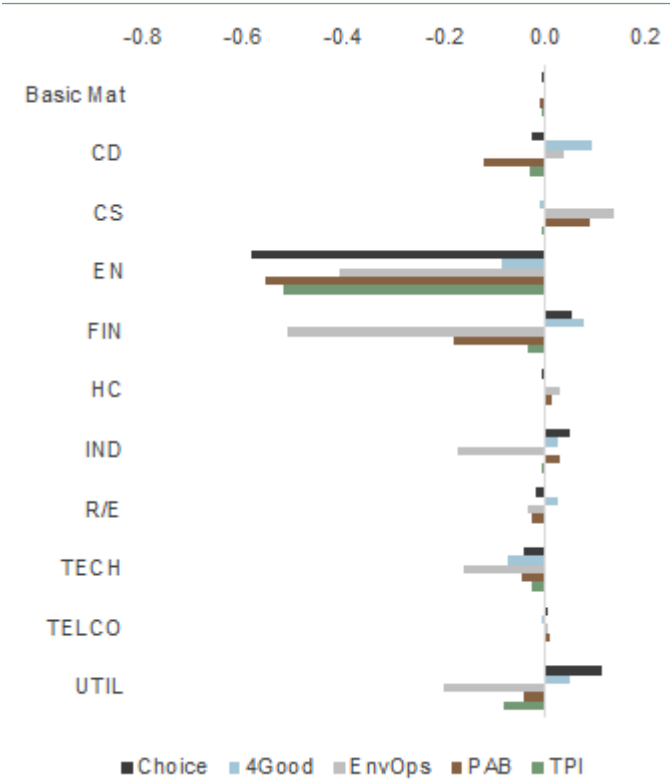
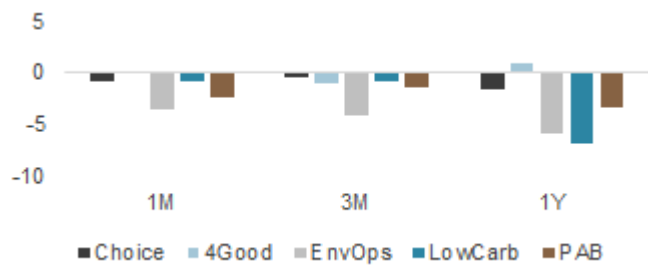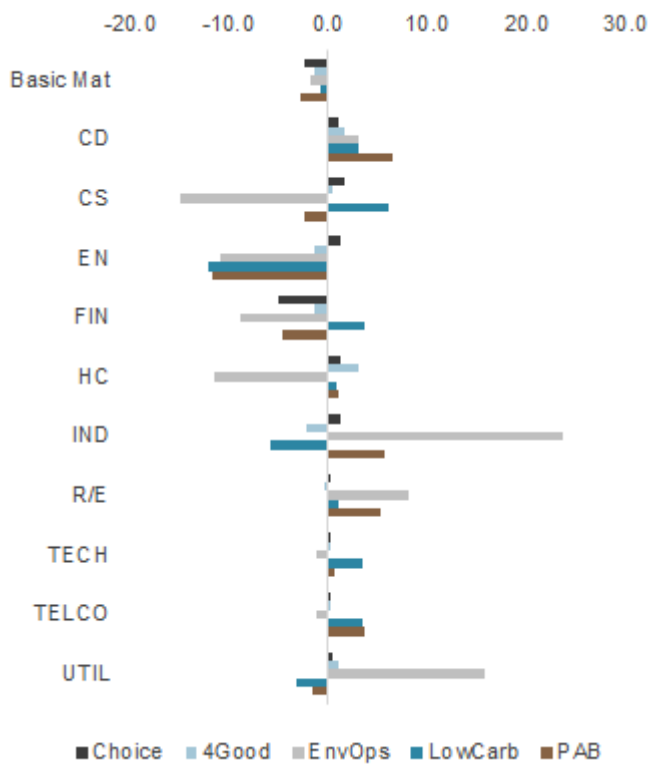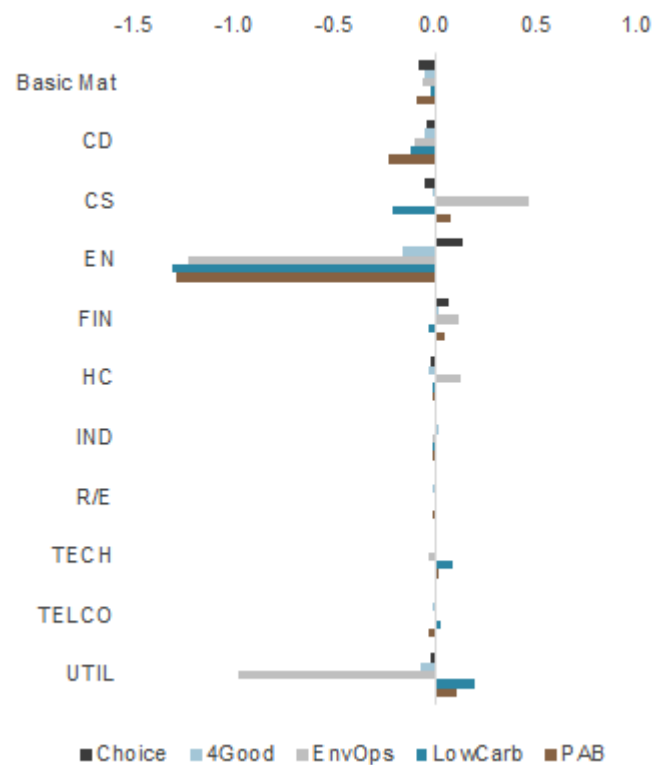**Chart 5: Global indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average**
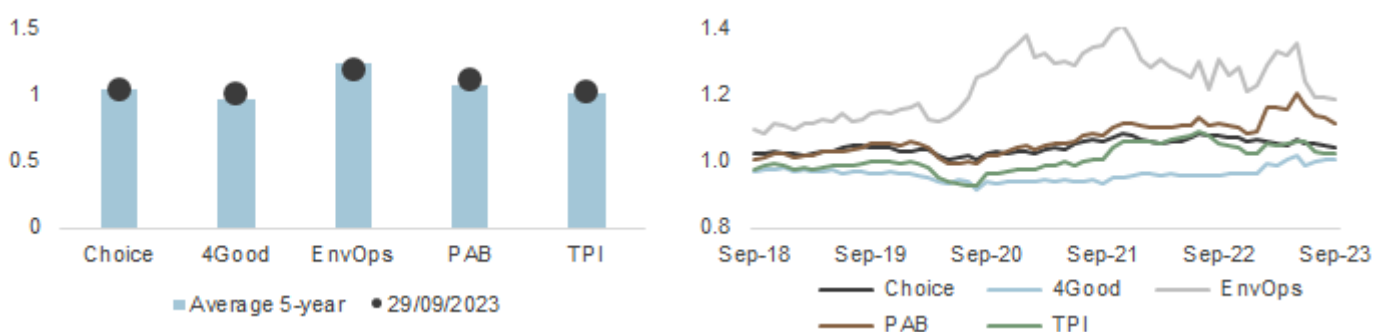
US Index Comparisons – Q3 2023

Most US SI strategies underperformed the market in Q3, except for FTSE4Good which was slightly ahead by 0.1%. Underperformance for all US SI strategies was driven by allocation in Energy, where they are all underweight. FTSE4Good benefited from the lowest underweight in Energy (-1.7% vs -4.8% for Global Choice) and a positive selection in Healthcare. Env Ops was the weakest performer, impacted also by underweight allocation in Financials and negative selection in Technology. Most US SI indices trade at a premium, slightly above their 5-year averages, except Env Ops, where the premium is higher and has been increasing.

Chart 1: Active Performance (TR, USD %)

**Chart 2: Index tracking error (%)**

Chart 3: Active Industry weights (3M ave %)

Chart 4: 3m Industry allocation effect (TR, USD %)
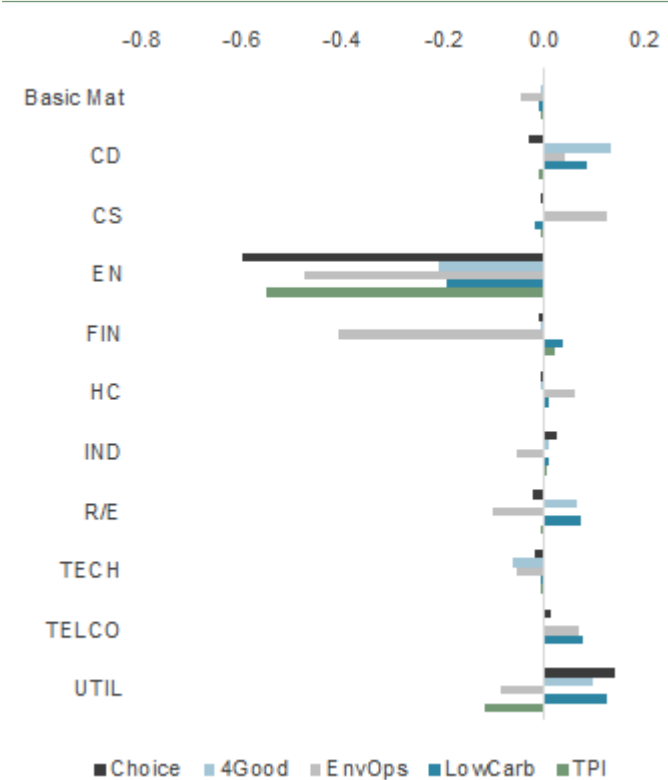
Chart 5: US indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average
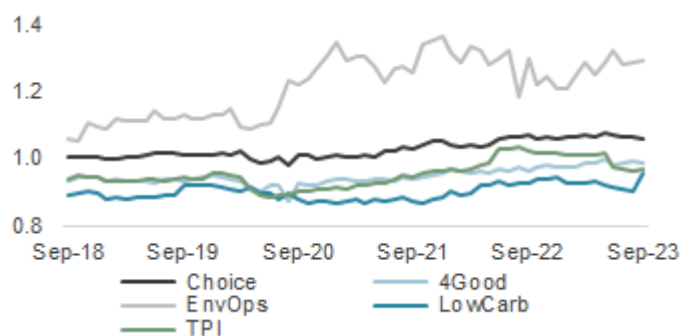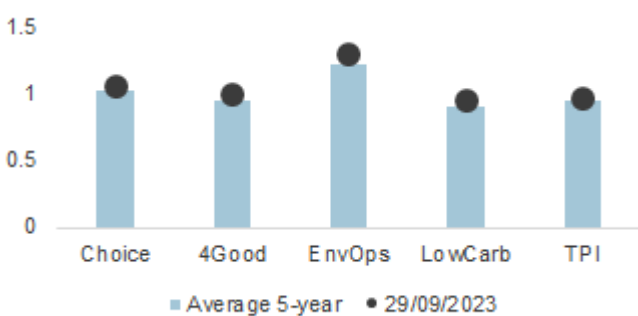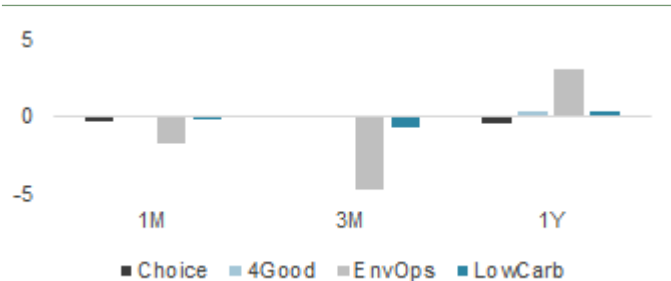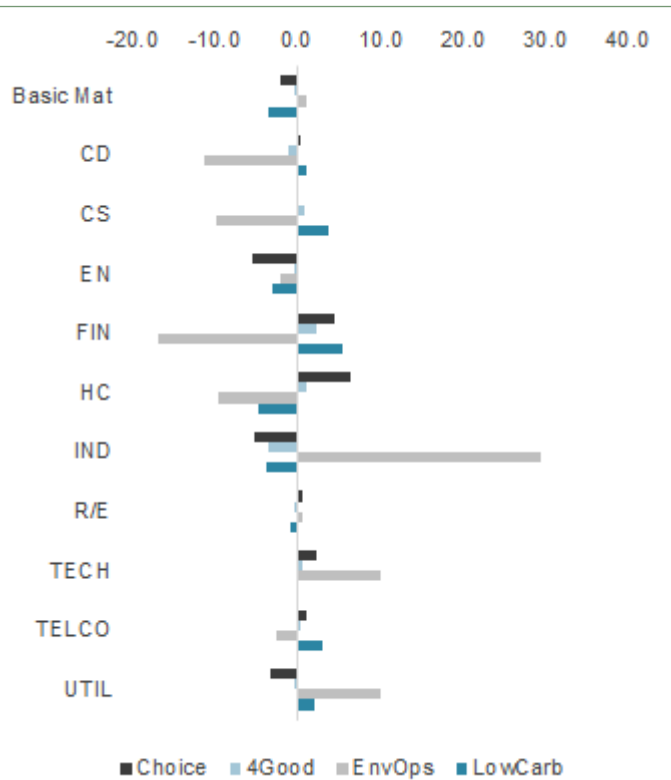
UK Index Comparisons – Q3 2023

In the UK, all SI strategies underperformed in Q3. Choice was the best performer -0.4%, driven by a small overweight in Energy, unlike the other UK SI strategies and Choice strategies, which are underweight Energy. However, it was impacted by negative selection in Basic Materials and Financials. All other UK SI strategies saw negative allocation in Energy, the worst performer Env Ops, also saw negative allocation in Utilities and negative selection in Industrials, partially compensated by positive selection in Consumer Discretionary. In the UK, Choice and FTSE4Good trade in line with their 5-year P/E premium, while PAB is above and Env Ops and Low Carbon are below.

Chart 1: Active Performance (TR, USD %)

Chart 2: Index tracking error (%)

Chart 3: Active Industry weights (3M ave %)

Chart 4: 3M Industry allocation effect (TR, USD %)

Chart 5: UK indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average
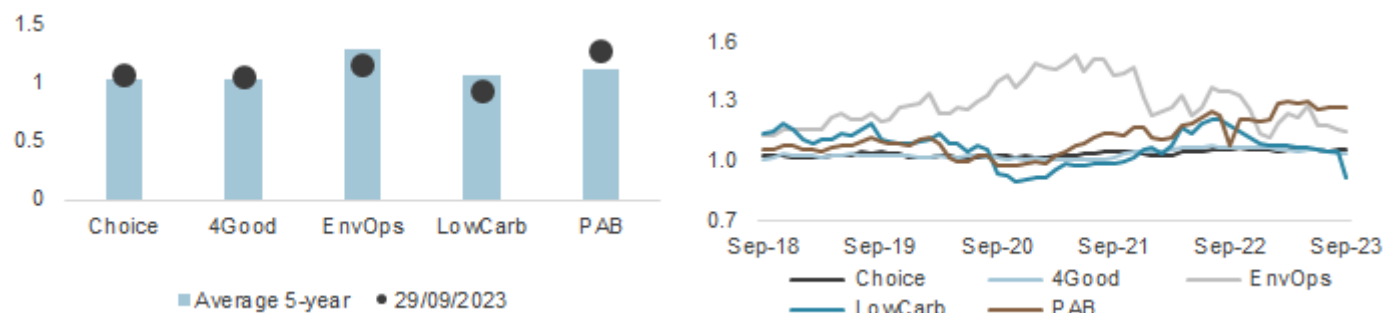
Europe Index Comparisons – Q3 2023

European SI strategies saw mixed performances in Q3, with Choice and FTSE4Good slightly ahead of the market (both +0.1%), while Low Carb, and particularly Env Ops, underperformed. FTSE4Good benefited from having a very low underweight to Energy, while Choice benefited from an overweight allocation in Financials and a strong selection in Consumer Discretionary. The worst performer Env Ops, which has more concentrated positions and a higher tracking error, was hit by a significant underweight in Financials -17% and overweight in Industrials +30%. SI index relative valuations are in line with their 5-year averages, except Env Ops, which is below, with all strategies, except FTSE4Good, having seen falling premia.

Chart 1: Active Performance (TR, USD %)

Chart 2: Index tracking error (%)

Chart 3: Active Industry weights (3M ave %)

Chart 4: 3M Industry allocation effect (TR, USD %)
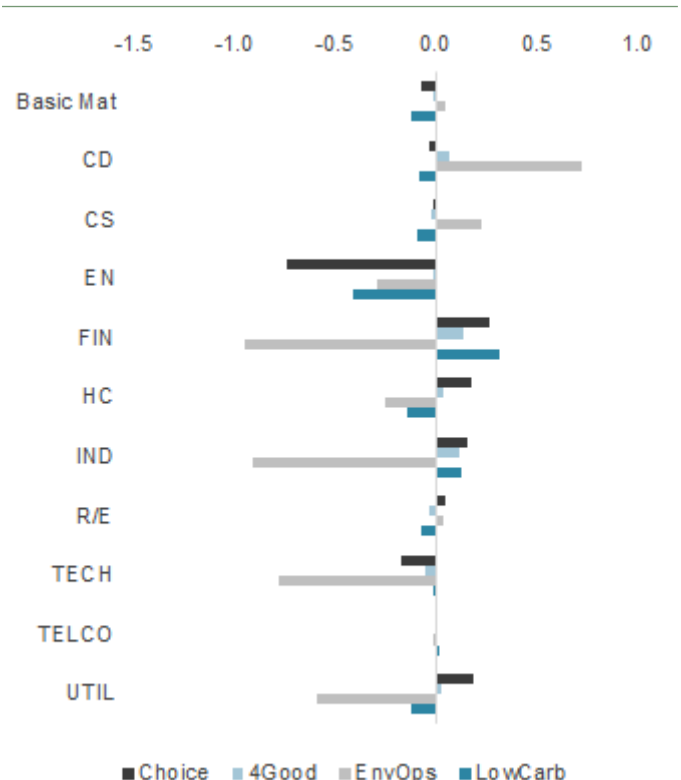
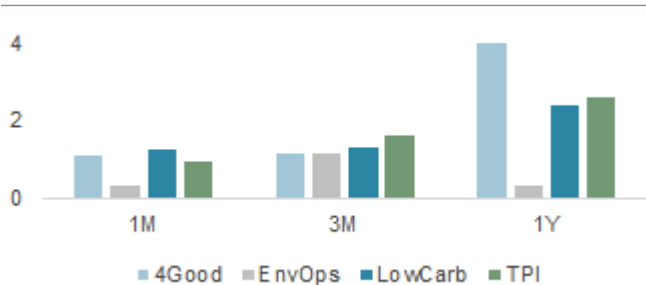## Chart 5: European indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average
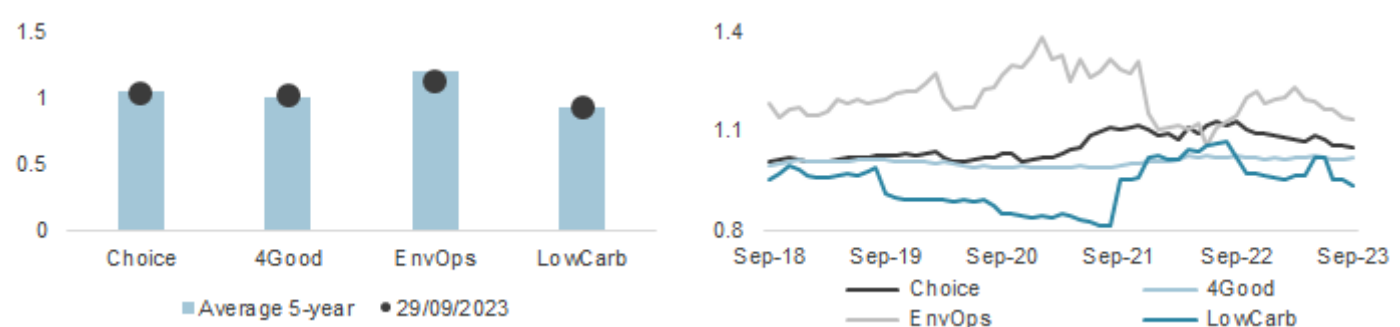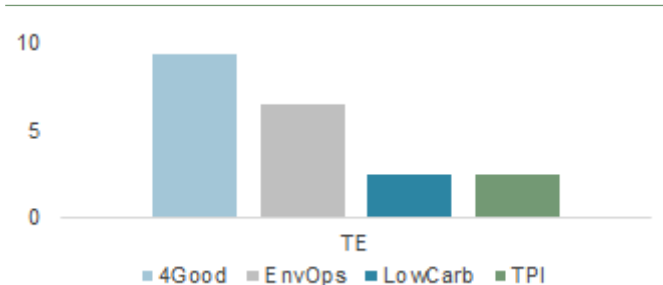
Japan Index Comparisons – Q3 2023

Japan was the strongest performing geography for SI strategies in Q3, with all SI strategies outperforming. SI strategies benefited from the Japanese market having limited exposure to Energy (~0.8%), which was a headwind in other geographies. Allocation effects were limited in Japan, except for Env Ops which saw a negative impact from an underweight allocation in Financials. In contrast, all SI strategies saw strong positive selection effects, particularly in Consumer Discretionary and Industrials, the largest parts of the Japanese market. FTSE4Good, LowCarb and TPI have a P/E premium ahead of their 5-year average and increasing, while that of Env Ops is below its 5-year average and falling.
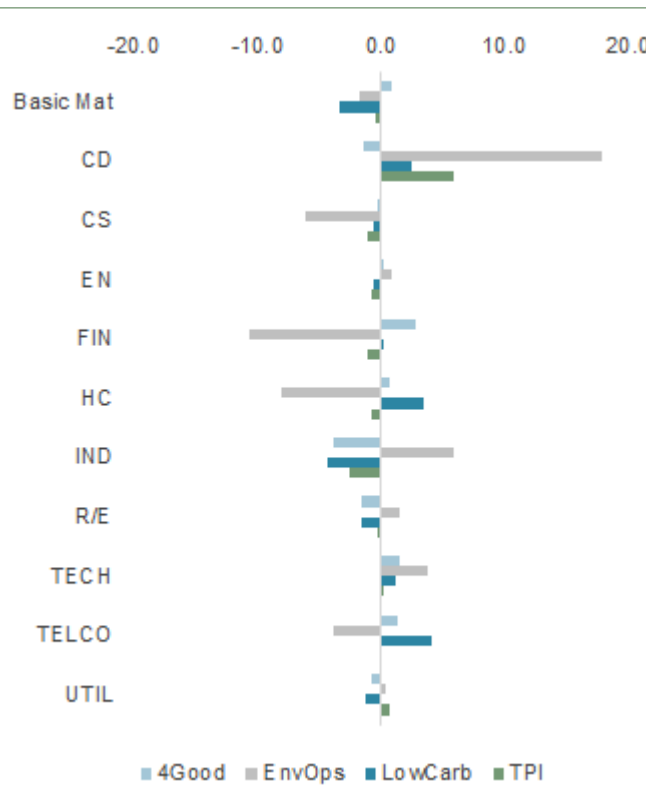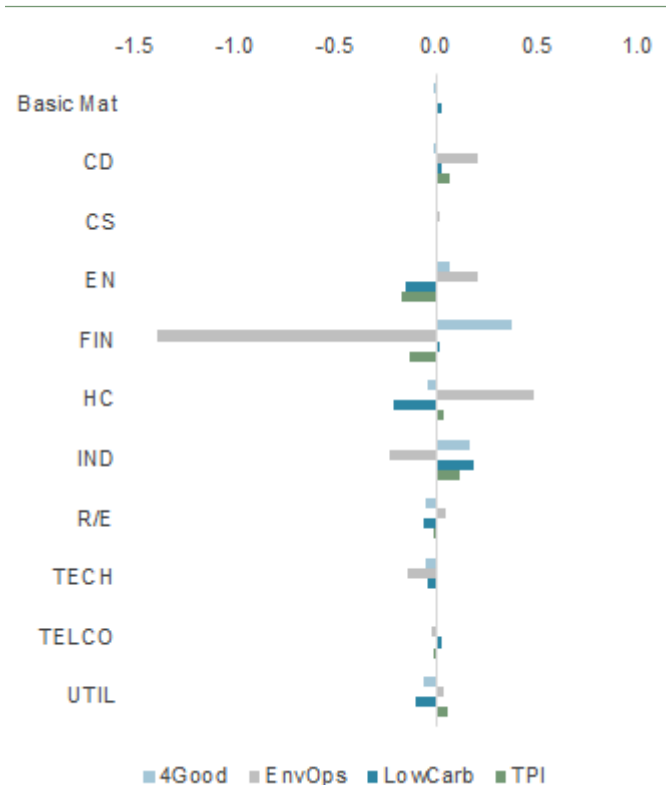
Chart 1: Active Performance (TR, USD %)
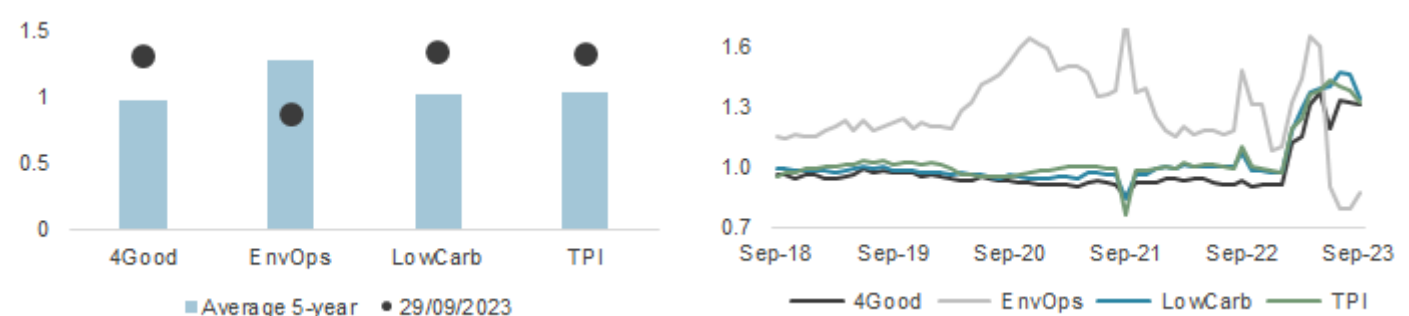

Chart 2: Index tracking error (%)

Chart 3: Active Industry weights (3M ave %)

Chart 4: 3M Industry allocation effect (TR, USD %)

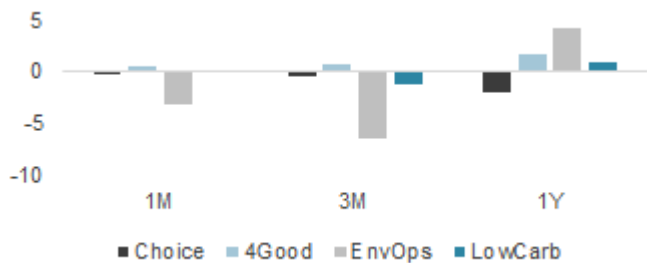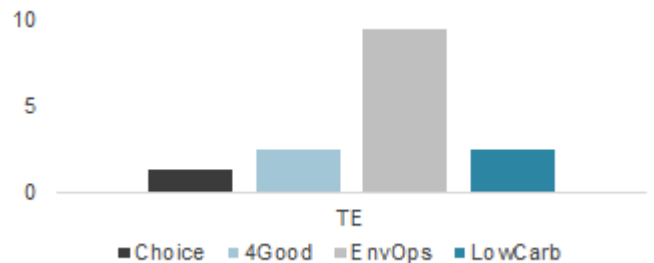## Chart 5: Japan indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average

Asia Pacific Index Comparisons – Q3 2023

In the Asia Pacific region, FTSE4Good outperformed in Q3, while other strategies underperformed, particularly Env Ops. FTSE4Good benefited from being slightly overweight Energy and significantly overweight Financials +6%, and its positive selection in Industrials. The underperformance in Env Ops, which has more concentrated positions and a higher tracking error, was driven by a large, negative selection effect in Tech. FTSE4Good has seen a significant rise in P/E premium in recent quarters, putting it ahead of its 5-year average, while other SI strategies are in line with their historical averages.
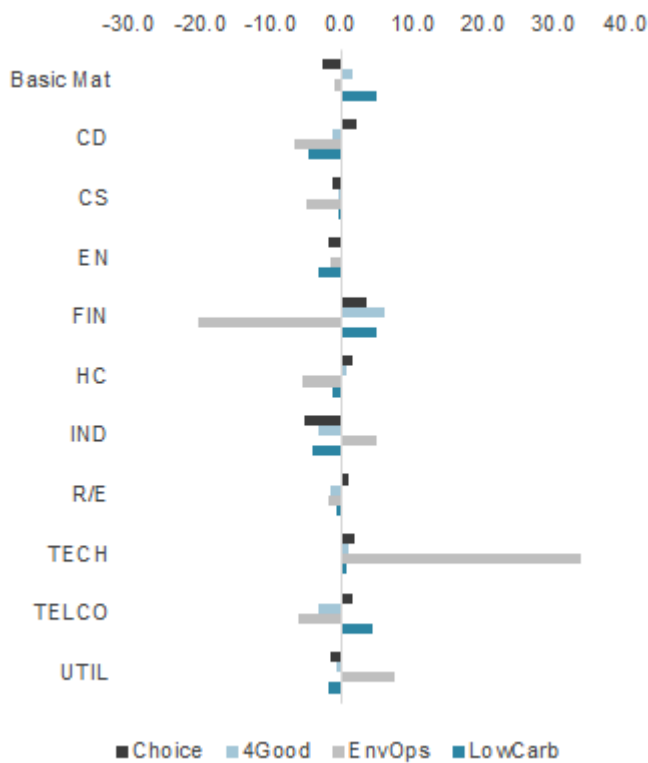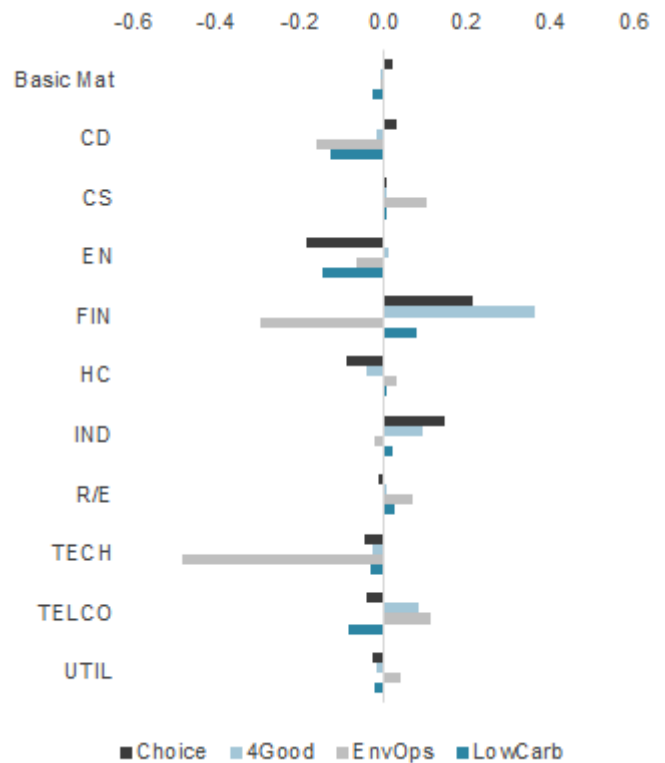
Chart 1: Active Performance (TR, USD %)
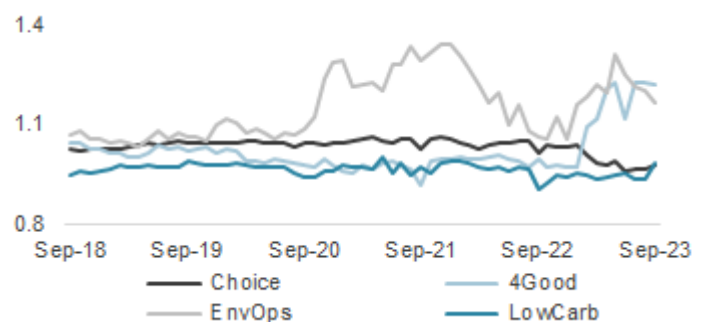

Chart 2: Index tracking error (%)

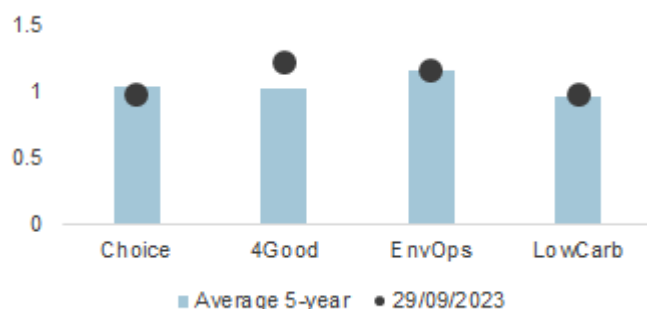## Chart 3: Active Industry weights (3M ave %)

Chart 4: 3m Industry allocation effect (TR, USD %)

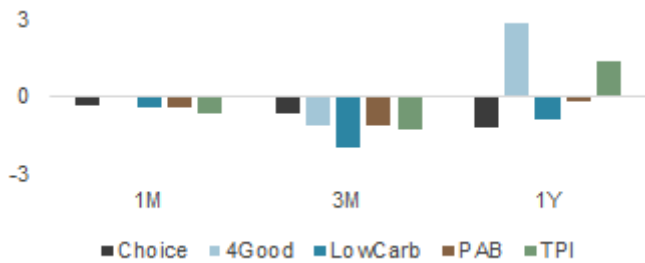## Chart 5: Asia Pacific indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average
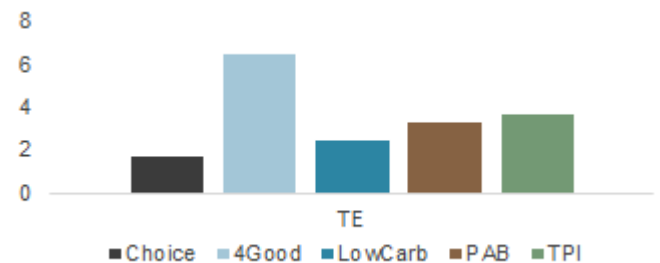
Emerging Index Comparisons – Q3 2023

All SI strategies in EM underperformed in Q3, LowCarb was the weakest strategy, whilst Choice performed the best, but still 0.6% behind the market. Allocation effects in Energy negatively impacted multiple strategies, however Choice benefited from a strong selection effect in Technology. FTSE4Good and LowCarb were not impacted by Energy allocation, but did have negative allocation from an underweight in Consumer Discretionary and an overweight in Technology as well as negative selection effects across multiple industries. SI valuation premia are relatively modest in EM, with PAB being the highest and above its historical average.

Chart 1: Active Performance (TR, USD %)

Chart 2: Index tracking error (%)

Chart 3: Active Industry weights (3M ave %)
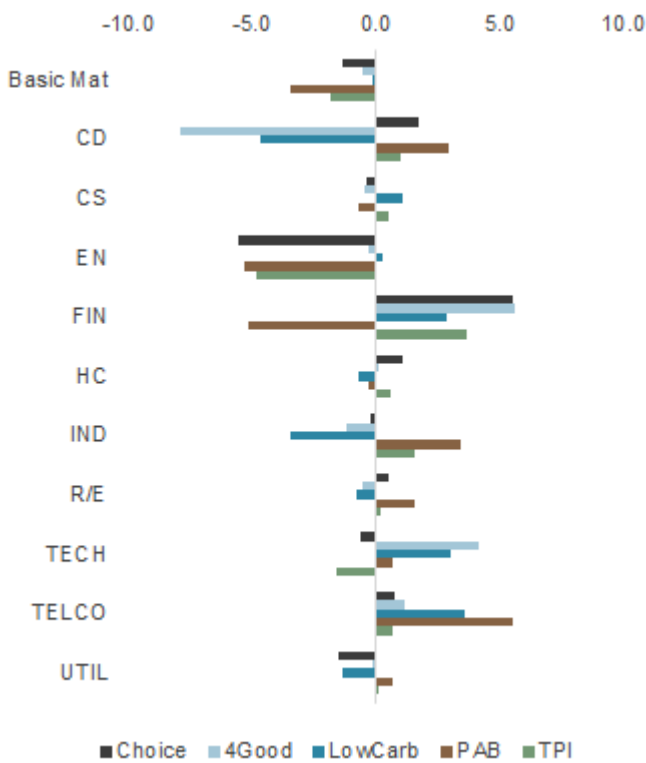
Chart 4: 3m Industry allocation effect (TR, USD %)
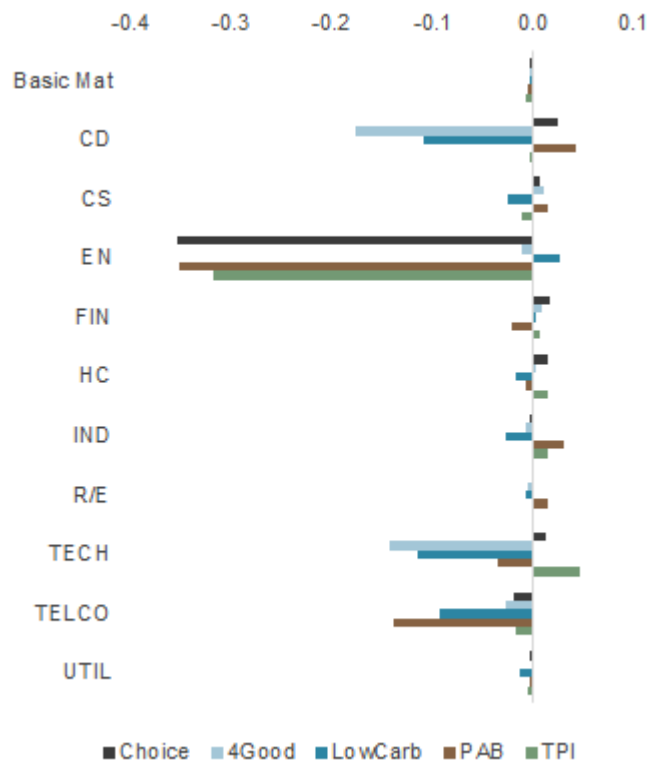
Chart 5: Emerging indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average
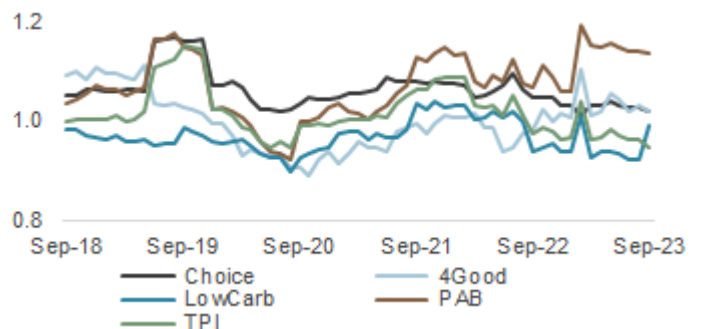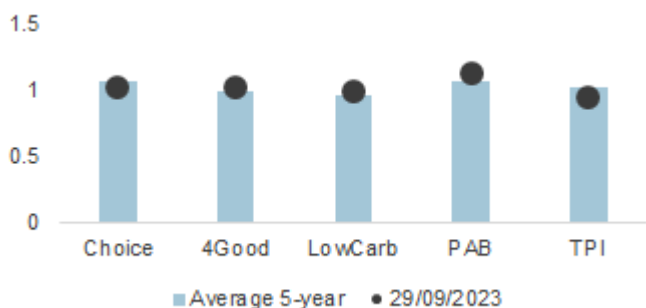
Developed Index Comparisons – Q3 2023

Developed market SI indices saw most strategies underperforming in Q3, with only FTSE4Good ahead of the market +0.1% and TPI the worst performer –1.0%. Allocation effects in Energy had the biggest impact on performance for all of the strategies except FTSE4Good, which only has a small Energy underweight of 0.8%, compared to 5.1% underweight in Choice. TPI underperformance was impacted by overweight allocation in Utilities and negative selection in Technology. Valuation premia have been relatively stable, in line, to slightly above history, except for PAB, where the premium has been rising.

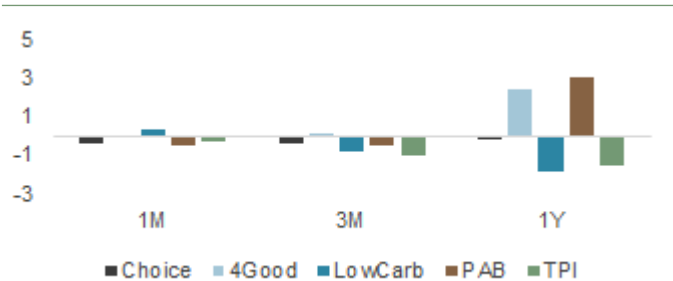**Chart 1: Active Performance (TR, USD %)**

Chart 2: Index tracking error (%)

Chart 3: Active Industry weights (3M ave %)

Chart 4: 3M Industry allocation effect (TR, USD %)
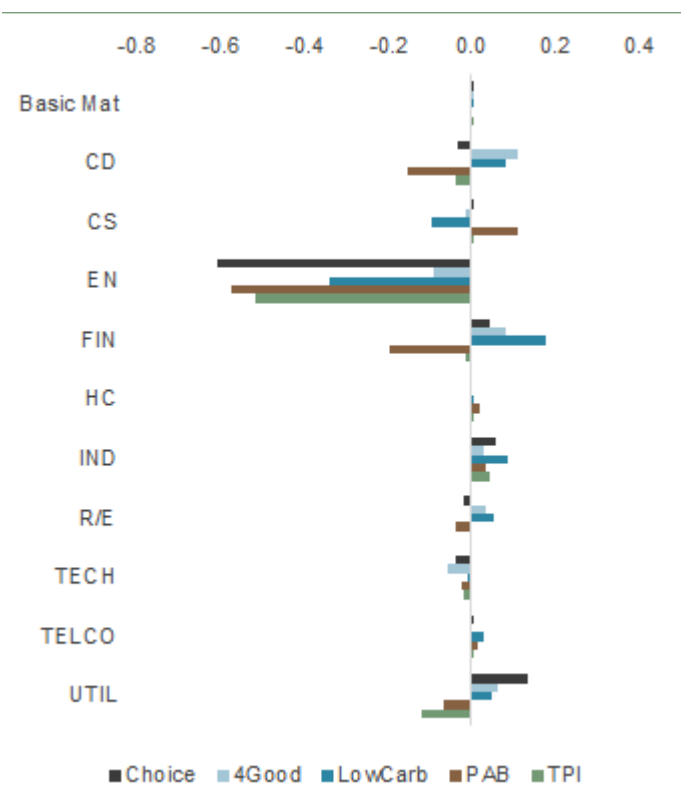
Chart 5: Developed indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average

Appendix 1: SI Index Coverage and Benchmarks

At FTSE Russell, sustainable investing includes a range of index strategies that aim to provide purpose-driven outcomes aligned with investors' sustainable investment policies. Investors seeking close alignment with the benchmark can choose to apply screens to e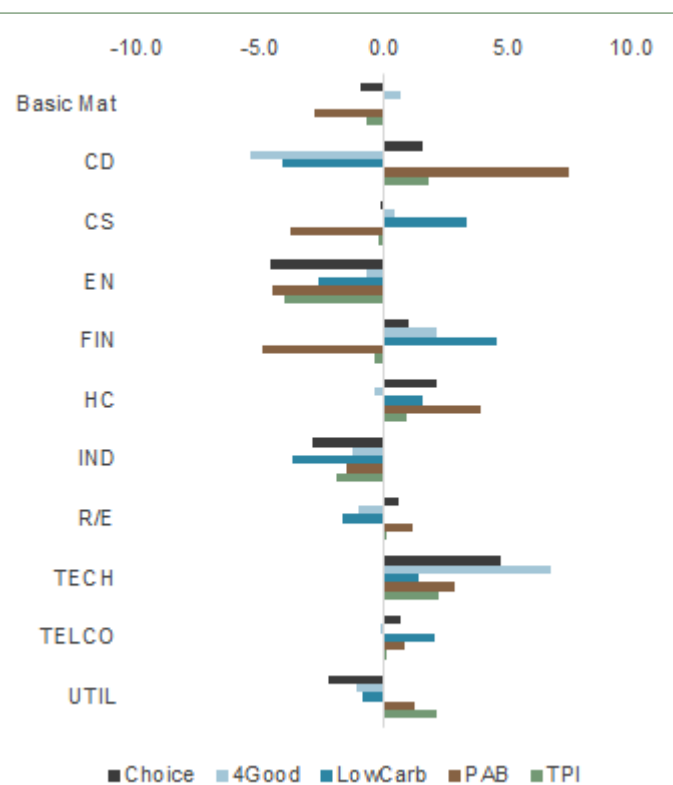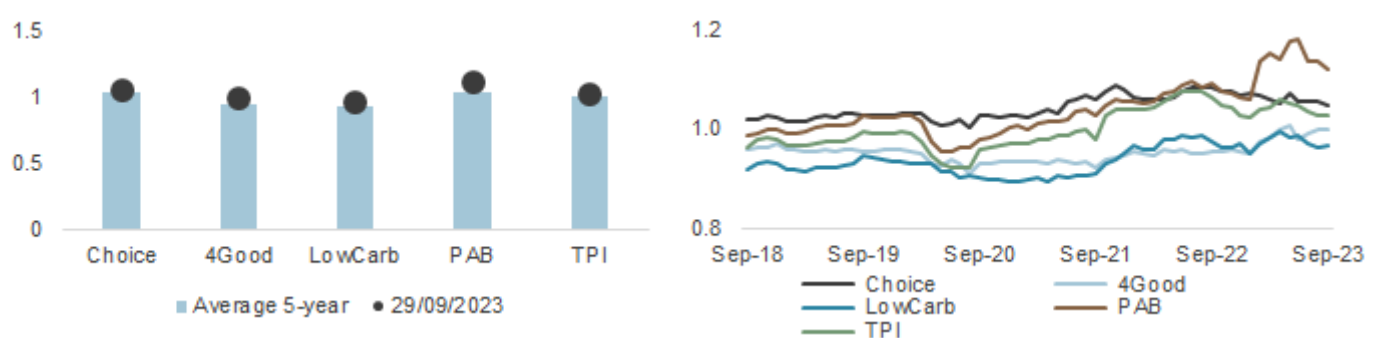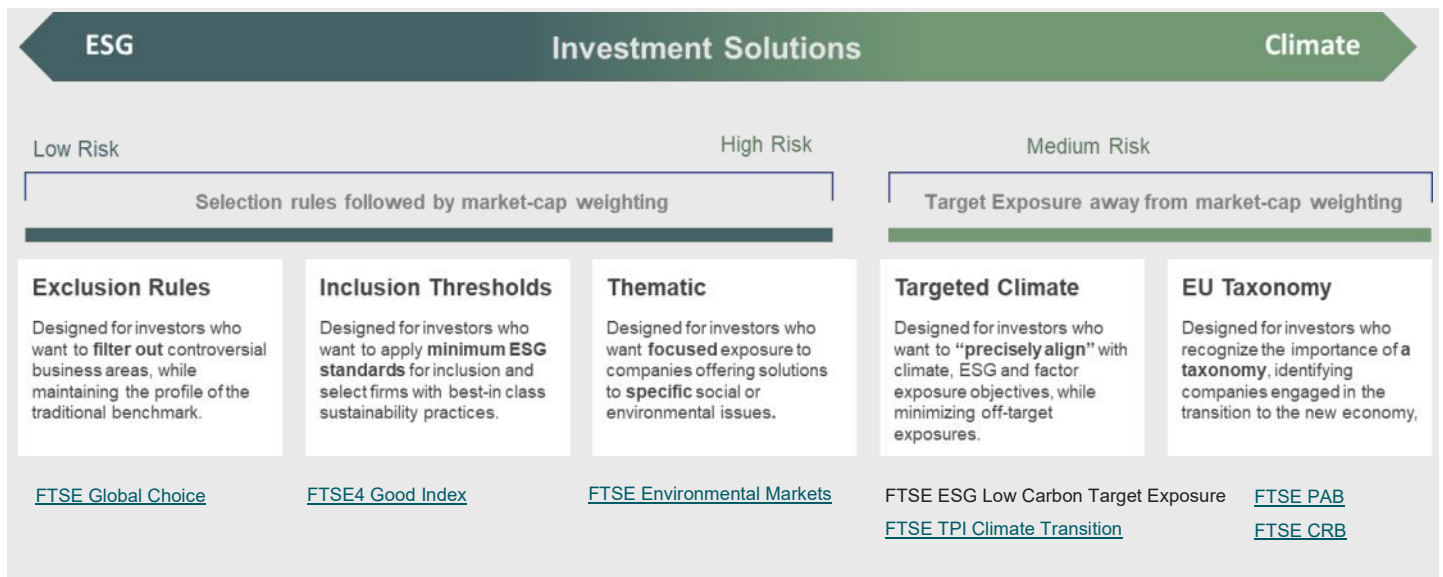xclude companies with undesirable features or to overweight those with strong ESG practices. A more concentrated option, Thematic indices, can help address specific social or environmental issues, and the transition to a greener economy, focusing on particular sectors. These indices share rules-based selection methodologies and are market-cap weighted.

The FTSE Russell Target exposure methodology is for investors looking to integrate multiple climate-change objectives, such as hedging specific climate risks, into an index, while gaining exposure to potential upsides from rising demand for green products. It is also used to support investor's decarbonization or net-zero strategies, such as European investors' requirement to align with the minimum standards for EU Low Carbon Benchmarks Requirements.

ESG	Investment Solutions		Climate	
Low Risk		High Risk	Medium Risk	
Selection rules followed by market-cap weighting			**Target Exposure away from market-cap weighting**	
Exclusion Rules	**Inclusion Thresholds**	**Thematic**	**Targeted Climate**	**EU Taxonomy**
Designed for investors who want to **filter out** controversial business areas, while maintaining the profile of the traditional benchmark.	Designed for investors who want to apply **minimum ESG standards** for inclusion and select firms with best-in class sustainability practices.	Designed for investors who want **focused** exposure to companies offering solutions to **specific** social or environmental issues.	Designed for investors who want to **"precisely align"** with climate, ESG and factor exposure objectives, while minimizing off-target exposures.	Designed for investors who recognize the importance of **a taxonomy**, identifying companies engaged in the transition to the new economy,
FTSE Global Choice	FTSE4 Good Index	FTSE Environmental Markets	FTSE ESG Low Carbon Target Exposure	FTSE PAB
			FTSE TPI Climate Transition	FTSE CRB

Market-Cap Weighted indices*

FTSE Global Choice indices select companies based on the impact of their products and conduct on society and the environment.

FTSE4Good indices include companies with an ESG and climate-change scores above a minimum threshold, with exclusions.

FTSE Environmental Opportunities indices include companies that derive at least 20% of their revenue from green products.

Target Exposure indices*

FTSE ESG Low Carbon Target Exposure indices target a 20% uplift in the ESG score ** and a 50% reduction in carbon emissions, controlling for country and ICB industry exposures.

FTSE EU Climate Transition Benchmarks (CTB) target a 30% reduction in carbon emissions, 100% uplift in Green Revenues (70% in Japan) and high climate governance as measured by the Transition Pathway Initiative (TPI).

FTSE Paris Aligned Benchmarks (PAB) target a 50% reduction in carbon emissions, 100% uplift in Green Revenues and high climate governance.

FTSE TPI Climate Transition over/underweights companies based on fossil fuel reserves, carbon emissions, green revenues, TPI management quality and TPI carbon performance.

*Please refer to the Appendix 1: Glossary Products and Methodology for further methodological details. See Sustainable investment category | FTSE Russell for the full range of FTSE Russell sustainable investment products

** ESG uplift target is the minimum of a standard deviation of market capitalization averaged index ESG score and a 20% uplift.

Appendix 1: SI Index Coverage and Benchmarks

				Regional Coverage		Market Cap Coverage	
REGION	**SI FAMILY**	**FTSE Russell Index**	**FTSE Russell Benchmark**	DM	EM	Large + Mid Cap	Large + Mid + Small Cap
US	Global Choice	FTSE USA All Cap Choice	FTSE Global Equity USA All Cap	✓			✓
	FTSE4Good	FTSE4Good US	**FTSE USA**	✓		✓	
	Environmental Ops	FTSE Environmental Opportunities USA	FTSE Global Equity USA All Cap	✓			✓
	ESG Low Carbon Target	FTSE USA ESG Low Carbon Target Exposure	**FTSE USA**	✓		✓	
	TPI Climate Transition	Russell 1000 TPI Climate Transition	**Russell 1000**	✓		✓	
UK	Global Choice	FTSE UK ex Controversies ex CW	**FTSE UK**	✓		✓	
	FTSE4Good	FTSE4Good UK	FTSE All-Share	✓			✓
	Environmental Ops	FTSE Environmental Opportunities UK	FTSE All-Share	✓			✓
	ESG Low Carbon Target	FTSE UK ESG Low Carbon Target Exposure	**FTSE UK**	✓		✓	
	Climate Transition	FTS Climate Transition Benchmark	FTSE All-Share ex Investment Trusts	✓			✓
	Paris Aligned	FTSE Paris Aligned Benchmark	FTSE All-Share ex Investment Trusts	✓			✓
Europe	Global Choice	FTSE Developed Europe All Cap Choice	FTSE Developed Europe All Cap	✓			✓
	FTSE4Good	FTSE4Good Europe	**FTSE Developed Europe**	✓		✓	
	Environmental Ops	FTSE Environmental Opportunities Europe	FTSE Developed Europe All Cap	✓			✓
	ESG Low Carbon Target	FTSE Developed Europe ESG Low Carbon Target	**FTSE Developed Europe**	✓		✓	
Japan	FTSE4Good	FTSE4Good Japan	**FTSE Japan**	✓		✓	
	Environmental Ops	FTSE Environmental Opportunities Japan	FTSE Global Equity Series Japan All Cap	✓			✓
	ESG Low Carbon Target	FTSE Japan ESG Low Carbon Target Exposure	**FTSE Japan**	✓		✓	
	Climate Transition	FTSE Japan Climate Transition Benchmark	FTSE JPX Japan 500	✓		✓	
	TPI Climate Transition	FTSE Japan TPI Climate Transition	**FTSE Japan**	✓		✓	
APAC	Global Choice	FTSE Developed Asia Pacific All Cap Choice	FTSE Developed Asia Pacific All Cap	✓			✓
	FTSE4Good	FTSE4Good Developed Asia Pacific	**FTSE Developed Asia Pacific**	✓		✓	
	Environmental Ops	FTSE Environmental Opportunities Asia-Pacific Ex	FTSE Asia Pacific All Cap ex Japan	✓	✓		✓
	ESG Low Carbon Target	FTSE Asia ex Japan ESG Low Carbon Target Exposure	FTSE Asia Pacific ex Japan	✓	✓	✓	
EM	Global Choice	FTSE Emerging All Cap Choice	FTSE Emerging All Cap		✓		✓
	FTSE4Good	FTSE4Good Emerging	**FTSE Emerging**		✓	✓	
	ESG Low Carbon Target	FTSE Emerging ESG Low Carbon Target Exposure	**FTSE Emerging**		✓	✓	
Global	Global Choice	FTSE Developed All Cap Choice	FTSE Developed All-Cap	✓			✓
	FTSE4Good	FTSE4Good Developed	FTSE Developed	✓		✓	
	Environmental Ops	FTSE Environmental Opportunities All-Share	FTSE Global All Cap	✓	✓		✓
	ESG Low Carbon Target	FTSE Developed ESG Low Carbon Target Exposure	FTSE Developed	✓		✓	
	TPI Climate Transition	FTSE Developed TPI Climate Transition ex Coal ex	FTSE Developed	✓		✓	

*The indices in bold are used as representative benchmarks on page 6

Source: FTSE Russell/Refinitv. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures.

Appendix 1: Glossary Products and Methodology

INDEX SERIES	INVESTMENT SOLUTION	METHODOLOGY
Screened	**Filter out controversial business areas**	**Market-Cap Weighted**
FTSE Global Choice	The FTSE Global Choice Index Series is designed to help investors align their portfolios with their individual values by selecting companies based on the impact of their conduct and products on society and the environment.	Market-cap weighted series and can include negative screens in three product categories and two conduct categories. Individual indices within the series may only apply a subset of the screening categories.
Thresholds	**Apply Minimum Inclusion standards**	**Market-Cap Weighted**
FTSE4Good	The FTSE4Good Index Series is designed to measure the performance of companies demonstrating strong Environmental, Social and Governance (ESG) practices.	Companies in the investment universe are given an ESG score ranging from 0 to 5, with 5 being the highest. A minimum score is applied for inclusion and stocks fall out of the index if their score falls below a threshold. In addition a minimum Climate Change Score is applied. An exclusion list covers sectors like Tobacco, Controversial weapons, Coal and Investment Trusts.
FTSE Environmental Opportunities	The FTSE EO Index Series measures the performance of global companies that have significant involvement in environmental business activities, including renewable and alternative energy, energy efficiency, water technology and waste and pollution control.	To be included in the index, companies are required to have at least 20% of their business derived from environmental products and services, including renewable and alternative energy, energy management and efficiency, water infrastructure and technology, and waste and pollution control.
Target Exposure	**Target climate change objectives**	**Non Market-Cap Weighted**
FTSE ESG Low Carbon Target	The FTSE ESG Low Carbon indices target a percentage reduction in index level carbon emissions and a significant improvement in the aggregate ESG score.	FTSE Russell's Target Exposure methodology is applied to target an uplift of 20% in the ESG score, a 50% reduction in operational carbon emissions intensity and a 50% reduction in fossil fuel reserves intensity, remaining country neutral and limiting the maximum deviation from the ICB industry weights of the underlying index.
FTSE SDG-Aligned	The FTSE SDG Aligned indices adjust constituent weights to create alignment with United Nations Sustainable Development Goals (SDGs)	FTSE Russell's Tilt methodology is applied to overweight stocks to SDG-aligned ESG theme scores and the global green economy. Climate related aspects of the SDG's are further captured tilting away from company exposure to fossil fuels and operational carbon emissions.
FTSE Global Climate	The FTSE Global Climate Index Series is designed to reflect the performance of indices incorporating Climate Change considerations. The index incorporates both the risks and the opportunities associated with climate change and the transition to a green economy.	FTSE Global Climate constituent weights are determined by adjusting the market capitalisation weight for three aspects of climate change: (1) Fossil Fuel Reserves (2) Operational Carbon Emissions (3) Green Revenues.
FTSE Smart Sustainability	The FTSE Smart Sustainability Index Series is designed to reflect the performance of stocks representing a specific set of factor characteristics, climate change considerations and or ESG practices.	FTSE Russell's Target Exposure and FTSE Russell's Tilt methodology are applied to achieve the sustainability and factor exposure profile sought.

Appendix 2: Reference Guide

Report calculations

- Unless noted otherwise, all performance calculations are in US dollar currency terms.

- Tracking error and Beta are calculated from 5-years of daily returns. All other calculations on pages 2 & 3 are 12-month averages.

- Page 6: Regional benchmark performance are for representative benchmarks of the region and not the official benchmark for all listed SI indices. Appendix 1 shows the full list of SI indices covered in this report with their officials benchmarks, which are used in the calculations throughout the report.

- Index climate exposures are calculated as the index weighted average. Benchmark climate aggregates are absolute climate exposures. The percent deviations of index exposures from benchmark exposures are labelled "uplift" for ESG and Green Revenues and "reduction" for carbon.

- Contributions to climate "uplift" or "reduction" are the share of total index percent deviation such that the sum over industries equals the total index percent deviation. For Green Revenues it is the absolute increase in weighted average green revenues

- Three-month industry allocation & stock selection effect is based on a Brinson attribution.

Sustainable Investment data inputs

- Carbon emissions: estimated annual CO2 equivalent GHG emissions (Scope 1 and 2) in metric tons scaled by annual sales (in USD) (metric tons/$m), with the exception of EU Regulated Climate Benchmarks which use CO2 equivalent GHG emissions (Scope 1 and 2) scaled by enterprise value including cash (EVIC).

- Green Revenues: the ratio of green revenues as classified by the FTSE Green Revenues Classification System to total revenues.

- FTSE Russell's ESG Data Model scores are objective measures of ESG exposure and performance in multiple dimensions.

- TPI Management Quality Data from the Transition Pathway Initiative

- An introduction to the FTSE ESG scores can be found in the following guide:

  Guide_to_FTSE_Sustainable_Investment_Data_used_in_FTSE_Russell_indices.pdf

Naming convention

FTSE Russell Sustainable indices are abbreviated in the report as follows

Official Name	Report Abbreviation
FTSE Global Choice	Choice
FTSE4Good	4Good
FTSE Environmental Opportunities	Env Ops or EO
FTSE ESG Low Carbon Target Exposure	Low Carb
FTSE Paris-Aligned Benchmark	PAB
FTSE Climate Transition Benchmark	CTB
FTSE TPI Climate Transition	TPI

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