

Sustainable Investment Insights

QUARTERLY REPORT | JULY 2024

ESG performance stands out in Q2

Q2 was a strong quarter for SI equity indices, with all five main global indices performing ahead of the market. ESG (FTSE4Good) stood out as the best performer in Q2, as well as in Q1 and over the last 12M. Looking at multi-assets, SI corporates outperformed, while SI sovereigns underperformed as did SI infrastructure and real estate. The SI market continues to struggle with weak fund flows, overcapacity in renewables and EVs, and changing SI regulations.

Highlights

SI Multi Asset

In addition to SI equity indices, we expand the coverage of the SI indices this quarter to include SI corporate and sovereign bonds and SI alternatives – infrastructure and real estate (EPRA Nareit). These additional indices add a range of different risk, return and correlation profiles across different SI methodologies, giving diversification opportunities for SI multi asset investors.

ESG vs Climate

ESG (FTSE4Good) was the strongest of the global SI equity indices in Q2 and over 12M. This outperformance represents a change to the typical relationship of ESG indices underperforming climate/green indices in an upmarket. The performance was driven by the lower valuation and strong selection effect, particularly in Technology.

Tech vs Energy

Most SI equity indices benefited from an underweight in Energy, despite the oil price volatility during the quarter. However, the overweight in Technology had a larger, positive effect. Selection in Technology was also a significant effect, with different positioning between SI strategies, 4Good and TPI benefited, while EnvOps and LowCarb lost out.

Renewable Energy

The renewable energy sector continues to struggle due to overcapacity and falling prices, though it rallied at the beginning of Q2 in anticipation of high energy demand from AI.

SI Fixed Income

Most SI bond indices performed close to their parent indices; corporates were slightly ahead, sovereigns slightly behind. However, the green bond market saw a higher performance dispersion, notably in green sovereigns, which underperformed due to their longer duration.

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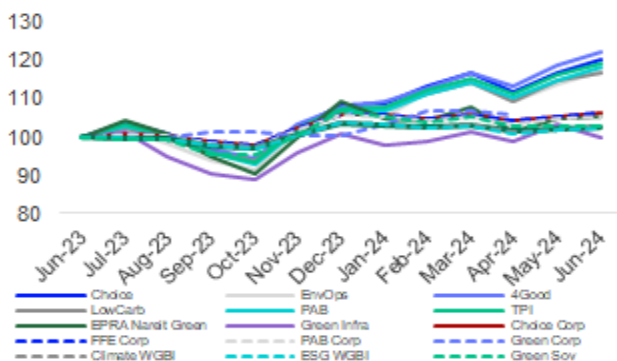
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AUTHOR

Lee Clements
Head of Applied Sustainable
Investment Research
Lee.Clements@lseg.com

Henry Morrison-Jones
Manager, Global Investment
Research
Herny.Morrison-Jones@lseg.com

Chart 1. 12-month relative performance Global SI indices, FTSE Oil Gas & Coal and FTSE Alternative Energy (TR, USD,%).



Note: Low Carbon & EPRA Nareit Green covers developed markets.

Source: FTSE Russell / LSEG. Data as of June 30, 2024.

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.

SI Equity Risk and Climate Characteristics – as of June 30, 2024

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 result in significant carbon intensity reductions (-43% to -55%) 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, a global beta close to 1, and a low tracking error (1.7%). The UK is the most diversified, holding 97% of benchmark stocks, while Europe and Emerging are the least diversified, holding 82% of benchmark stocks.

FTSE4Good's best-in-class ESG strategy results in significant ESG score uplifts (21% to 3%). The global tracking error is low (1.8%). Europe has the lowest ESG uplift (3%), but the highest absolute ESG score. By contrast, EM has the highest ESG uplift (21%), 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 53% to 22%). However, the focus on Industrials, Utilities & Technology leads to higher carbon intensity in most regions (56% to -4%). The indices are highly concentrated (7% 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 (-51% to -40%) and ESG score uplift (19% to 11%). Tracking errors are moderate (2.2% to 2.9%) 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 (-69% to -48%), increases TPI MQ score (10% to 5%), increases green revenues (absolute increase of 11% to 3%) and reduces Energy industry weighting (absolute reduction of -11% to -3%). Tracking error is slightly higher than in some other SI indices (2.3% to 5.8%) and the indices are more concentrated (62% to 30% of benchmark).

TPI Climate Transition (TPI) targets multiple climate related uplifts. It achieves a strong reduction in carbon intensity (-54% to -32%), significant increase in TPI MQ score (26% to 10%), while the global tracking error is relatively modest at 1.6%. EM has the highest tracking error at 3.9%, but also has the highest TPI MQ uplift of 26%.

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.

Risk	FTSE Russell SI Index	US	UK	Europe	Japan	APAC	Emerging	Developed	Global
Tracking Error	Global Choice	2.1%	1.6%	2.3%		1.3%	1.7%	1.9%	1.7%
	FTSE4Good	2.4%	1.9%	2.2%	9.5%	2.5%	6.5%	1.8%	1.8%
	Environmental Ops	8.8%	9.3%	6.9%	6.6%	15.4%			6.1%
	ESG Low Carbon Target	2.8%	6.4%	2.9%	2.6%	2.6%	2.5%	2.2%	
	Paris Aligned		5.8%				3.3%	2.3%	2.5%
	Transition Pathway	1.9%			2.6%		3.9%	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			1.1
	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	82.7%	97.0%	82.4%		87.7%	82.0%	84.6%	83.5%
	FTSE4Good	46.0%	38.2%	71.6%	49.1%	47.3%	27.8%	53.0%	40.2%
	Environmental Ops	9.1%	7.5%	14.3%	10.8%	6.0%			6.7%
	ESG Low Carbon Target	73.1%	57.0%	47.5%	53.6%	32.8%	38.6%	40.1%	
	Paris Aligned		61.9%				47.9%	46.7%	29.8%
	Transition Pathway	58.7%			76.8%		42.3%	52.6%	35.2%
Weight in Top 10 relative to benchmark	Global Choice	119.9%	101.3%	129.3%		114.0%	102.0%	124.4%	124.7%
	FTSE4Good	148.3%	124.2%	120.0%	132.7%	122.9%	125.0%	133.5%	137.2%
	Environmental Ops	253.7%	146.4%	255.1%	223.7%	305.7%			299.2%
	ESG Low Carbon Target	166.1%	148.8%	173.0%	194.7%	172.0%	133.4%	177.2%	
	Paris Aligned		204.2%				118.5%	152.3%	161.8%
	Transition Pathway	125.7%			155.7%		141.1%	135.9%	130.6%

Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

Risk and Climate Characteristics – as of June 30, 2024

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.

Climate		FTSE Russell SI Index	US	UK	Europe	Japan	APAC	Emerging	Developed	Global
Active E score	Global Choice		2.7%	0.0%	-3.7%		-1.8%	-2.4%	0.9%	0.7%
	FTSE4Good		16.9%	9.9%	4.0%	11.0%	10.6%	25.2%	13.9%	15.0%
	Environmental Ops		24.0%	-1.1%	0.0%	12.6%	28.8%			19.8%
	ESG Low Carbon Target		25.4%	19.2%	24.3%	20.6%	24.6%	22.4%	28.7%	
	Paris Aligned			-0.8%				9.4%	5.4%	6.8%
	Transition Pathway		10.8%			10.4%		22.3%	11.3%	10.4%
Active S score	Global Choice		3.2%	-1.3%	-1.4%		-0.8%	0.4%	1.8%	1.8%
	FTSE4Good		12.8%	8.9%	2.9%	11.9%	10.3%	26.2%	10.9%	12.3%
	Environmental Ops		17.8%	-8.7%	-5.3%	0.6%	27.8%			14.1%
	ESG Low Carbon Target		19.3%	12.4%	13.3%	19.6%	21.1%	22.8%	18.8%	
	Paris Aligned			0.8%				10.2%	3.2%	5.3%
	Transition Pathway		6.1%			6.4%		18.7%	6.2%	6.5%
Active G score	Global Choice		0.4%	-0.6%	-1.4%		-1.6%	-0.2%	-0.4%	-0.3%
	FTSE4Good		5.2%	7.3%	1.6%	8.9%	8.8%	18.0%	5.7%	6.5%
	Environmental Ops		13.0%	-1.1%	-1.9%	-1.1%	14.8%			9.3%
	ESG Low Carbon Target		10.9%	3.0%	5.0%	14.0%	11.4%	12.5%	10.6%	
	Paris Aligned			-1.4%				7.5%	-0.2%	1.3%
	Transition Pathway		0.7%			4.4%		11.7%	1.5%	2.1%
Active ESG score	Global Choice		2.1%	-0.7%	-1.9%		-1.3%	-0.4%	0.8%	0.8%
	FTSE4Good		12.4%	8.8%	2.8%	10.6%	10.0%	21.2%	10.6%	11.6%
	Environmental Ops		17.0%	-8.1%	-2.1%	4.1%	21.5%			13.2%
	ESG Low Carbon Target		19.0%	11.1%	14.2%	18.1%	18.5%	18.6%	19.1%	
	Paris Aligned			-0.7%				8.7%	2.2%	3.9%
	Transition Pathway		5.9%			7.1%		16.8%	6.4%	6.2%
Carbon Reduction	Global Choice		-54.9%	7.4%	-47.2%		-43.5%	-44.2%	-52.7%	-50.9%
	FTSE4Good		-32.7%	6.2%	0.6%	0.5%	-9.5%	13.9%	-20.5%	-15.1%
	Environmental Ops		30.0%	-3.6%	55.4%	7.3%	37.8%			33.3%
	ESG Low Carbon Target		-46.0%	-36.2%	-50.6%	-47.4%	-43.5%			
	Paris Aligned			-48.0%				-39.9%	-46.8%	-60.7%
	Transition Pathway		-47.3%			-32.0%		-39.1%	-54.3%	-46.0%
Active Green Revenues	Global Choice		-0.09	0.38	-1.24		-0.12	0.75	-0.21	-0.12
	FTSE4Good		1.42	-0.19	0.19	-0.91	-0.54	3.73	0.94	1.14
	Environmental Ops		21.69	52.75	32.44	34.85	41.86			27.67
	ESG Low Carbon Target		0.70	-0.05	3.39	-1.11	2.50	2.28	0.62	
	Paris Aligned			10.56				6.95	3.24	3.69
	Transition Pathway		0.50			3.63		6.85	1.80	2.21
Active TPI Management Quality Score	Global Choice		-0.2%	1.0%	-3.5%		-2.0%	-4.2%	-1.1%	-1.3%
	FTSE4Good		11.2%	6.9%	2.6%	7.5%	7.3%	22.4%	9.4%	10.6%
	Environmental Ops		15.3%	-1.8%	1.1%	10.5%	26.0%			14.2%
	ESG Low Carbon Target		15.4%	4.0%	9.6%	14.0%	20.2%	17.6%	15.6%	
	Paris Aligned			4.7%				10.1%	5.9%	6.6%
	Transition Pathway		10.2%			11.4%		26.4%	10.8%	10.8%

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.

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Macroeconomic Backdrop – Q2 2024

Q2 2024 was a solid quarter for markets. Despite a brief pullback in April, global equity returns were mostly positive, with EM leading and US equities also performing well, thanks to continued AI-driven sentiment. The AI-based rally was most evident when Nvidia made the headlines in June, as it briefly became the largest company in the world by market-cap, before relinquishing its title, following a sharp sell-off. However, equity returns outside of technology were also solid. Utilities was one such industry, which performed well during the quarter, as investors saw it as a potential beneficiary from any boom in AI technologies.

Inflation and growth divergence was a key theme in Q2. Among the G7 economies, the ECB and the BoC cut rates in June on lower inflation and weaker growth, while the Fed remained on hold. However, US bond returns still held their ground in Q2, with US investment grade (IG) corporates outperforming both European (TR, USD) and World IG (TR, USD) indices.

Oil prices were volatile on the back of mixed messages over tensions in the Middle East. Oil prices ultimately finished lower during the quarter, moving from \$84 to \$83 (WTI Crude) but were unable to hold their lows seen at the beginning of June.

Global fund flows largely continued their positive trend seen since November 2023, albeit with some volatility – notably in April, where equities saw net outflows as a result of the risk-off sentiment.

For further in-depth analysis of asset classes see [Asset Allocation Insights - June 2024 | LSEG](#)

Chart 1: Select FTSE Equity Indices Total Return (% USD)
– EM and US equities led the way in Q2.

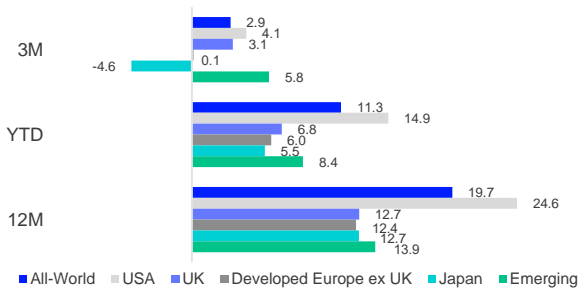


Chart 2: FTSE All World 3M Industry Returns (TR %, USD)
– Technology topped industry returns in Q2 thanks to the AI-centric rally. Utilities also benefitted.

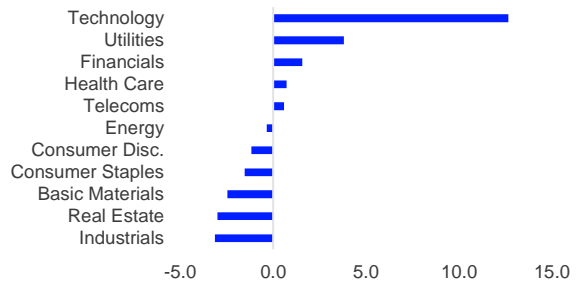


Chart 3: Historical GDP and forecasts across regions (%)
– Global growth projected to be stable in 2024 & 2025, with regional variations – notably US to lead other DM economies.

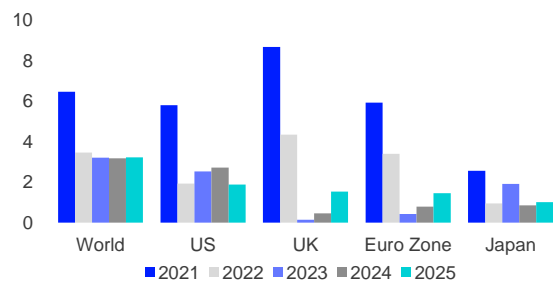


Chart 4: Regional Inflation (%) – Although inflation has been falling, headline CPI remains above 2% in most developed economies.

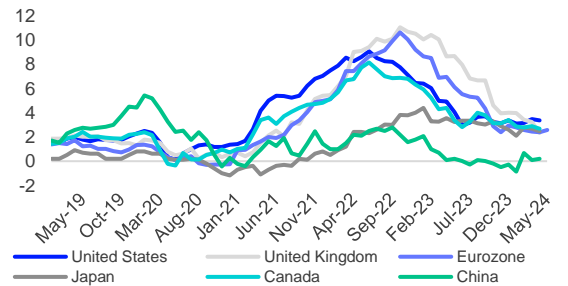
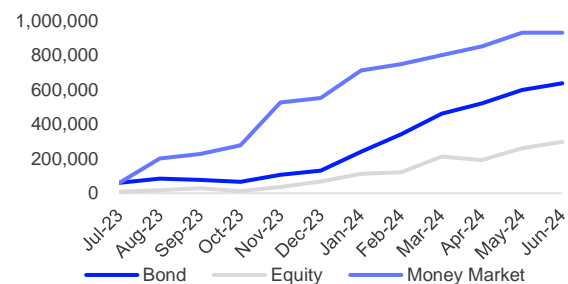


Chart 5: WTI Crude Oil Price (USD) – Oil prices were volatile in Q2, but ultimately ended up lower during the quarter.



Chart 6: Global Bond, Equity & Money Market Fund Flows
– fund flows have seen a moderate uptick over the last seven months, aided by a pause in rate hikes across DM economies.



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SI Backdrop – Q2 2024

ESG focused indices have been outperforming climate and green economy indices YTD. Typically, climate has outperformed ESG in upmarket periods, however this relationship has broken down recently.

The green economy was under pressure with over capacity and geopolitical impacts, such as recent tariffs on renewable energy equipment and EVs, continuing to weight on profitability. However, renewable energy, which was the worst performing sector of the FTSE All World over 12 months, started to stage a recovery in Q2, although this reversed during June. This suggests much of the bad news has already been discounted by the market and investors are starting to see the sector as a beneficiary of AI. Energy demand from data centres, which consume a lot of electrical power, ~2-3% globally, has been growing rapidly. This demand is likely to accelerate even further with the rapid growth of AI, which requires 4-5 times the power of a normal server. This is at odds with the environmental commitments of the large technology companies, which has led them to become major buyers of renewable energy.

SI fund flows have remained flat in Q2 compared to higher flows into the broader market. Europe has seen a much larger SI adoption into broader, predominantly not SI labelled, funds from asset managers than investors putting new money into SI labelled funds. SI policy also continues to evolve with upcoming ESMA naming rules and potential changes to SFDR.

Chart 1: Climate/ESG – Climate (EnvOps) has typically outperformed ESG (4Good) in upmarket periods, however this relationship has recently broken down.

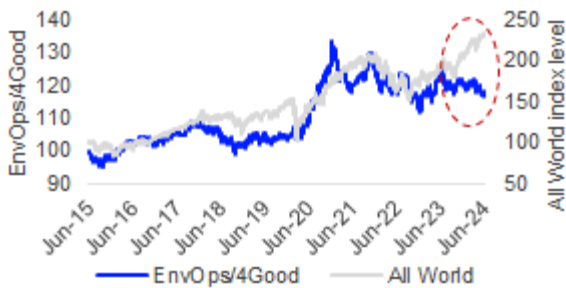


Chart 2: Env Ops Green Sectors relative performance – Although weak over 12M, renewables have recovered strongly in the last 3M.

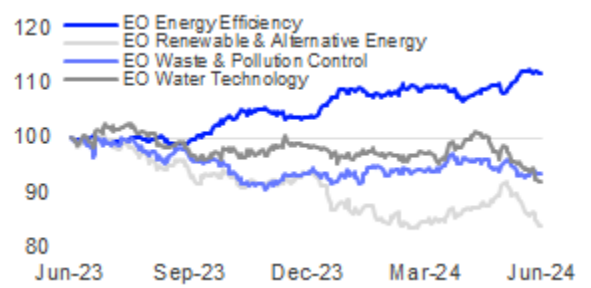


Chart 3: Clean Technology Manufacturing Capacity¹ – Solar and batteries are seeing large overcapacity.

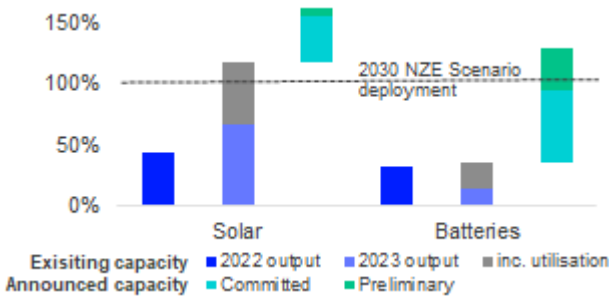


Chart 4: Data centres' electricity demand² (TWh) – Large and growing electricity demand.

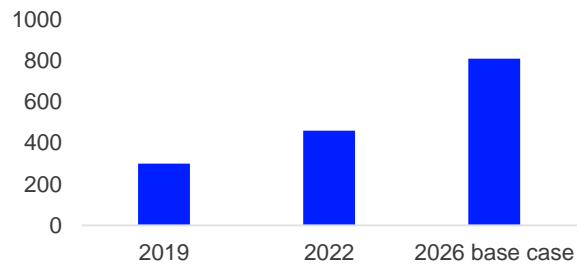


Chart 5: Sustainable investment bond & equity monthly fund flow – Recent SI fund flow is behind market flow.

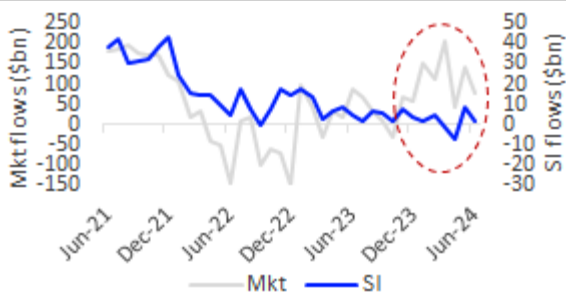
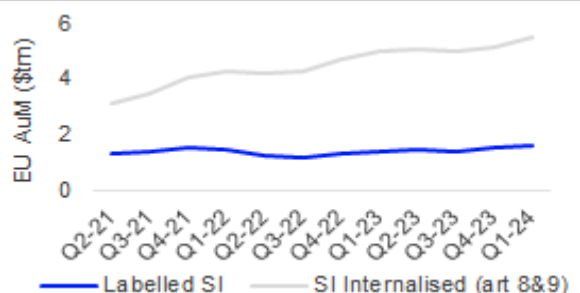


Chart 6: European mainstreaming of SI³ – The growth of funds incorporating SI in their process has been faster than the growth of green labelled SI funds

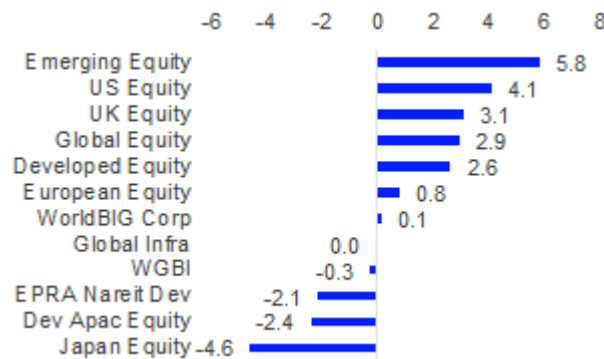


1. IEA (2024), Advancing Clean Technology Manufacturing 2. IEA (2024), Electricity 2024
 3. Labelled SI from LSEG Lipper, SI article 8 & 9 from Morningstar SFDR Art 8 & 9 Funds Q1 24
 Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.
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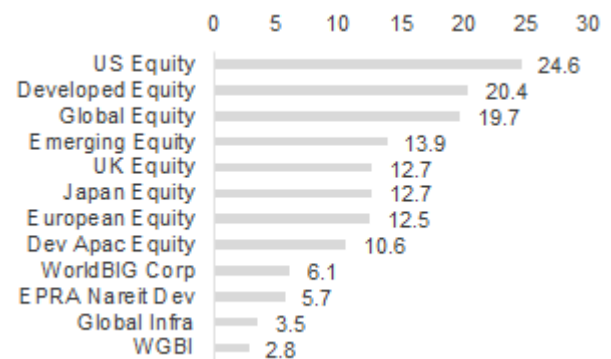
Absolute Returns – 3M & 12M (TR, USD %) as of June 30, 2024

Q2 was a solid quarter for markets. Anticipation of central bank easing meant that markets were highly sensitive to economic data releases throughout the quarter, with sovereign yields ultimately ending slightly higher as investors revised their expectations for interest rate cuts. However, equity returns were still strong. Emerging and US were the best performing regions in Q2, with the US benefiting from AI-exuberance and contributions to Emerging being led by Taiwan and some of its chip-related stocks. Japanese equities were the main laggards for the quarter, down nearly 5%, as USD returns were affected by continued weakness in the yen. Quarterly SI performance was driven by regional factors and led by APAC and EM indices.

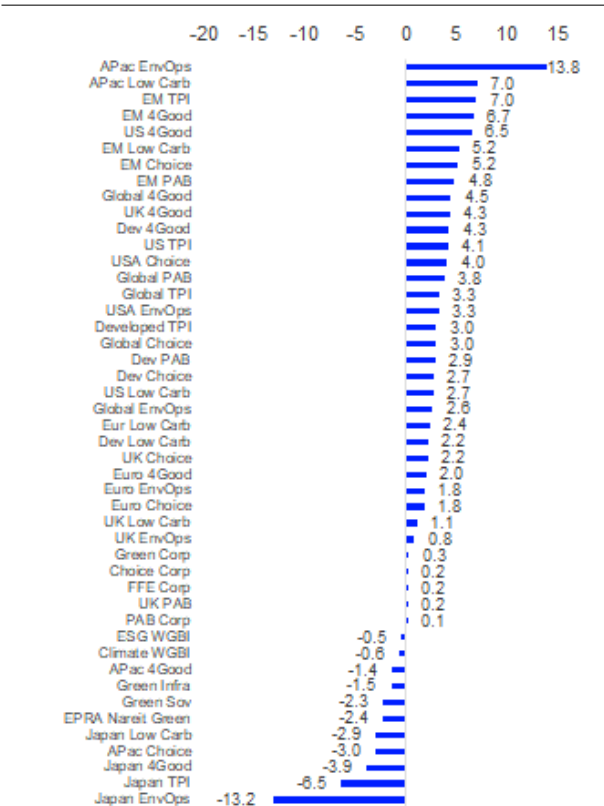
Regional 3M Absolute Returns* (TR, USD %): EM and the US were the best performing regions, whilst Japanese equities were the weakest.



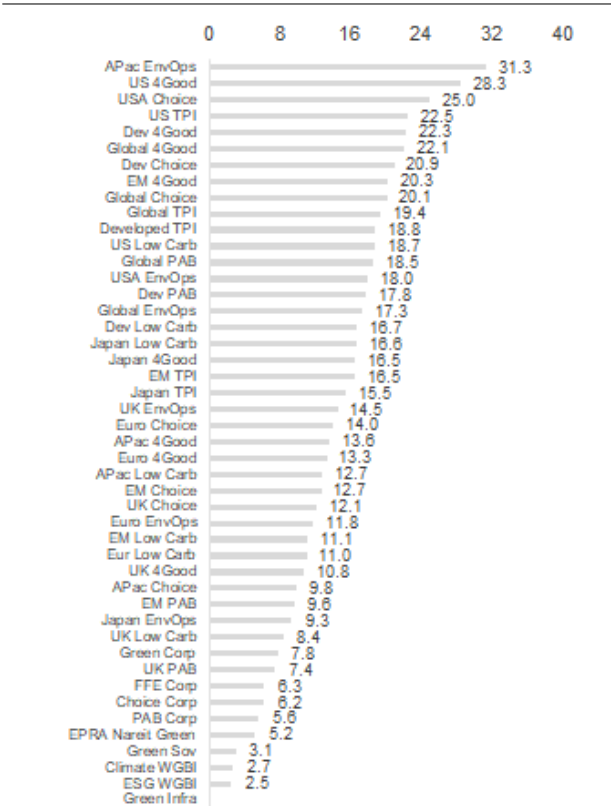
Regional 12M Absolute Returns* (TR, USD %): US equities were the best performing asset class over 12M, with bonds and alternatives seeing lower returns.



SI Index 3M Absolute Returns (TR, USD %): APAC and EM indices performed best, while Japanese indices were weak.



SI Index 12M Absolute Returns (TR, USD %): US SI equity indices were strong, while SI sovereigns were weak.



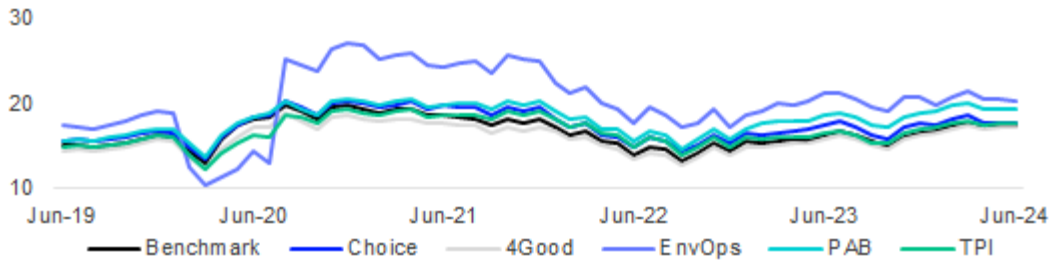
*The Broad regional indices above are: The FTSE USA, FTSE UK, FTSE Developed Europe, FTSE Japan, FTSE Developed Asia-Pacific and FTSE Emerging Markets. Benchmarks for the listed SI indices may vary. Appendix 1 shows the appropriate benchmark and market-cap coverage for the SI indices covered in this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

Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

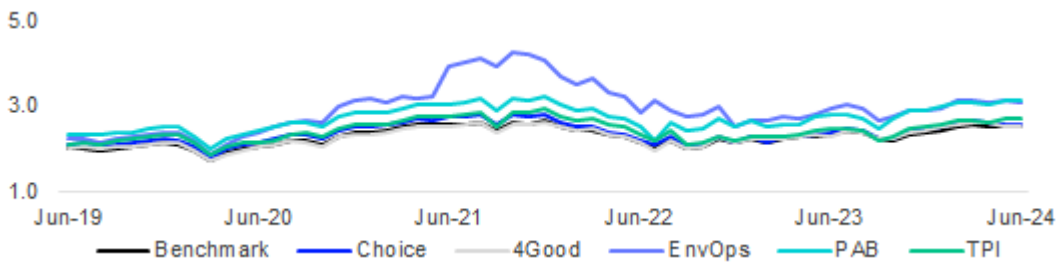
SI Equity Index Valuation – June 30, 2024

Strong equity market performance in Q2 was balanced by rising earnings expectations and resilient economic growth. The result was a slight decrease in P/E valuations for both SI indices and the broader market over the quarter. With the exception of FTSE4Good, all the SI strategies are currently more expensive than the market. EnvOps was again the SI index with the highest valuation premium at the end of the quarter, however, we note that the premium for the index fell in Q2 and remains below its 5-year average. Most SI indices, except FTSE4Good, have a lower dividend yield than the market, with Env Ops the lowest. Valuations were rising across all markets in Q1. At a regional level, the US is the most expensive market, although SI strategies exhibit the highest premia in the UK.

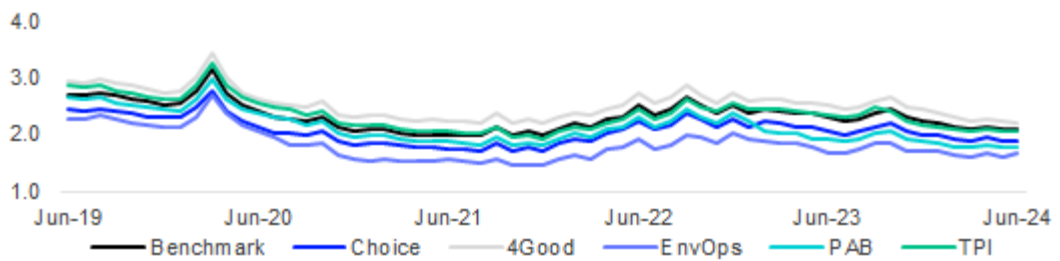
Global Markets – 12-month forward factor P/E ratios



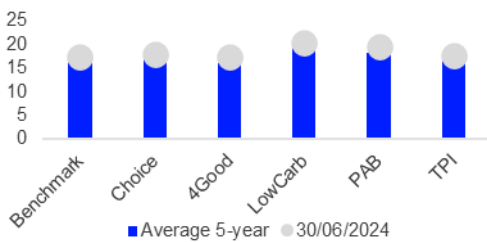
Global Markets – 12-month forward factor Price to Book ratios



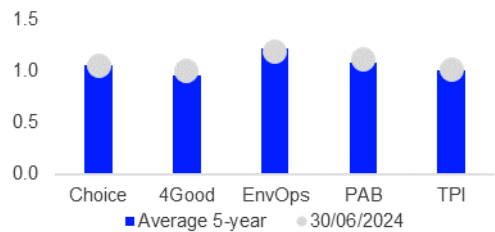
Global Markets – Dividend Yield



12-month forward P/E vs history



12-month forward P/E premium vs history



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SI Sovereigns – Q2 2024

SI sovereigns broadly underperformed in Q2, as yields for the indices rose by more than their non-SI counterparts. Advanced Climate WGBI was the main laggard for the quarter, returning -0.9% . Over 12-months, returns have been positive across the board, as markets have started to price future monetary policy easing. On a relative basis, all three SI sovereign indices have underperformed vs. WGBI over the last 5 years. However, this trend has recently reversed for the climate-adjusted indices, which have benefited from the strong USD-hedged performance of select European overweights.

While the ESG WGBI has a slight overweight to US government bonds, the climate indices are both heavily underweight the US in favour of European sovereigns. With central bank policies likely to diverge over the coming months, this should remain a key determinant of relative performance moving forward. Relative to WGBI, the ESG WGBI exhibits a clear quality bias, implying that more developed, lower risk sovereigns are likely to have higher ESG scores than less developed counterparts.

Despite a history of lower relative yields vs WGBI, SI yields have seen a relative improvement over the last two years. The unusual relationship, particularly in 2022, of underperformance and falling relative yields came about due to the heavy Europe vs US overweight during the period, when the Fed was well ahead of the ECB in raising rates.

Except for a brief period of negative active duration for the ESG WGBI in 2022, SI sovereign indices have consistently seen positive active duration. It's also worth noting that the climate-adjusted indices tend to see higher volatility in duration due to their more complex, emissions-based re-weighting calculation.

Chart 1: Selected SI Sovereign Returns (TR, USD Hedged)
– Despite weakness in Q2, 12-month returns remain positive.

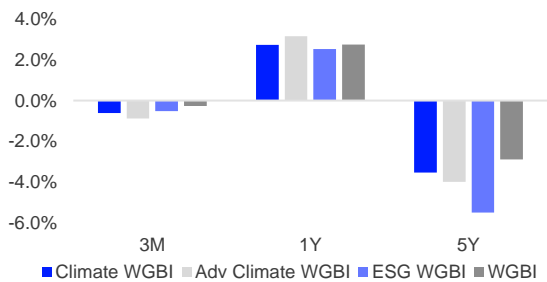


Chart 2: Selected SI Sovereign Relative Performance vs. WGBI (TR, USD Hedged) – Climate-adjusted indices have seen improved performance since mid 2023

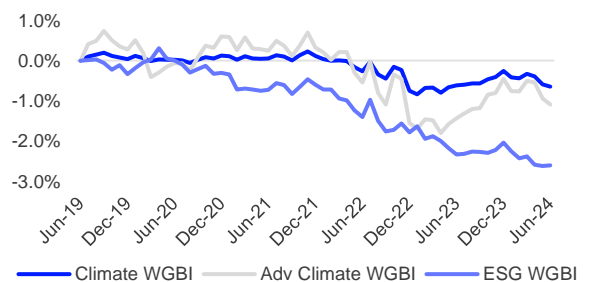


Chart 3: Selected SI Sovereign Active Weights vs. WGBI – while ESG WGBI is slightly overweight the US, climate indices remain heavily underweight in favour of European sovereigns.

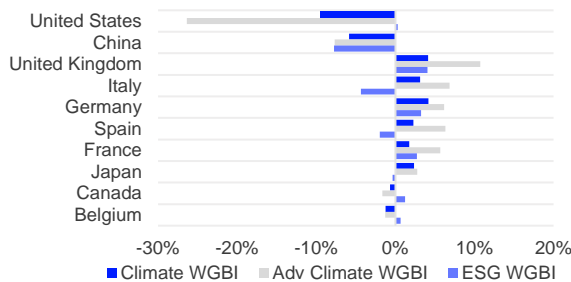


Chart 4: Selected SI Sovereign Relative Credit Weighting vs. WGBI – ESG WGBI exhibits a clear quality bias.

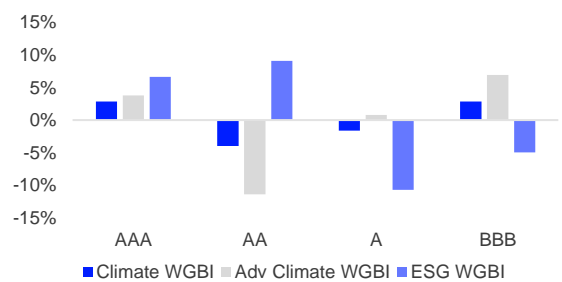


Chart 5: Selected SI Sovereign Relative Yield vs. WGBI – SI yields have improved vs. WGBI over the last 2 years.

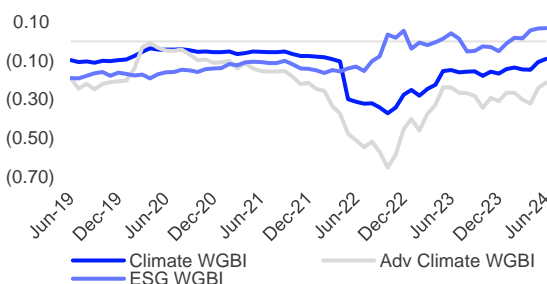
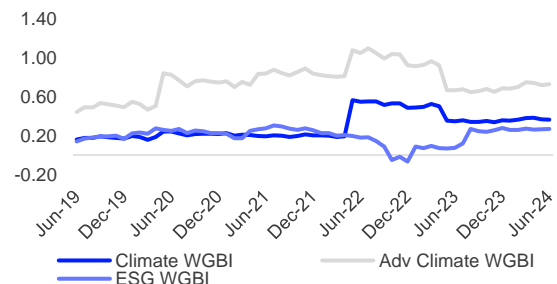


Chart 6: Selected SI Sovereign Active Duration vs. WGBI – SI sovereigns have consistently seen positive active duration.



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SI Corporate Bonds – Q2 2024

SI corporate returns were positive across the board over 3 months, with Choice Corp the top performer, returning -0.2% . However, over 1-year and 5-year periods, FFE Corp has led returns. On a relative basis, PAB Corp has largely underperformed WBIG Corp post-Covid, while FFE Corp and Choice Corp have held up well. Variation in performance has largely been driven by differences in duration as yields have continued to climb. The recent variation in relative performance is particularly interesting given how closely correlated performance had been prior to central bank rate hikes and given that central bank policy set to remain a key theme in coming months.

Also contributing to the divergence in performance was PAB Corp's underweight in Banks - a sector which has performed well over the past 12 months following the US banking crisis in 2023. More broadly, all three SI corporate indices have significant overweights in services and underweights in energy versus WBIG Corp. Relative to WBIG Corp, the SI Indices also exhibit lower BBB exposure in favour of AAA and AA, indicating a quality bias. PAB Corp exhibits the most drastic increase in quality, which has resulted in some underperformance as credit has outperformed in recent months.

Recent spread tightening has occurred despite yields holding steady at high levels. The dislocation between spreads and yields highlights the idea that spread tightening has driven a large share of recent performance. Active duration for PAB Corp has been mostly positive over the past 5 years, despite exhibiting some volatility. Contrastingly, Choice Corp and FFE Corp have exhibited low vol and consistently negative active duration versus WBIG Corp.

Chart 1: Selected SI Corporate Returns (TR, USD Hedged)
– SI corporate returns were positive across the board over 3M.

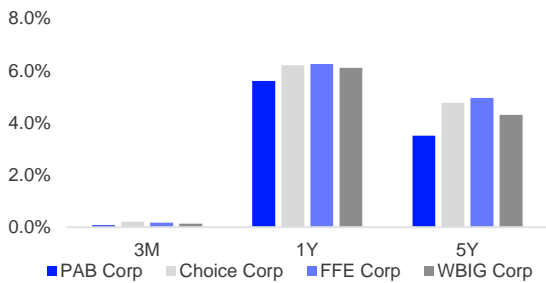


Chart 2: Selected SI Corporate Relative Performance vs. WBIG Corp (TR, USD Hedged) – PAB Corp has largely underperformed, while FFE Corp & Choice Corp held up well.

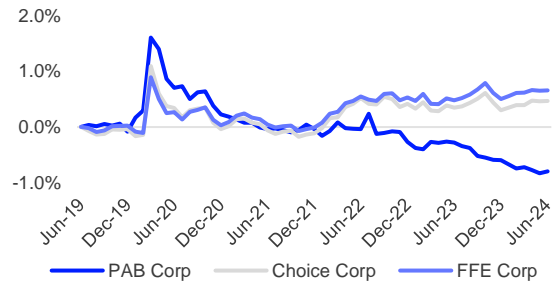


Chart 3: Selected SI Corporate Active Weights vs. WBIG Corp –PAB Corp's underweight in Banks has contributed to recent underperformance.

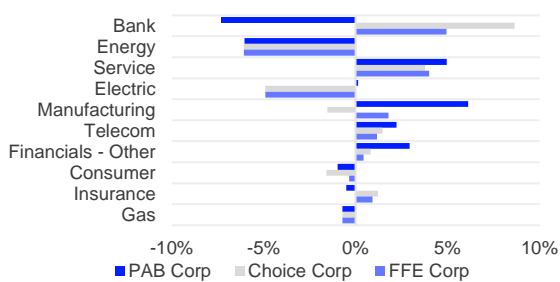


Chart 4: Selected SI Corporate Relative Credit Weighting vs. WBIG Corp – the SI Indices exhibit lower BBB exposure in favour of AAA and AA, indicating a quality bias.

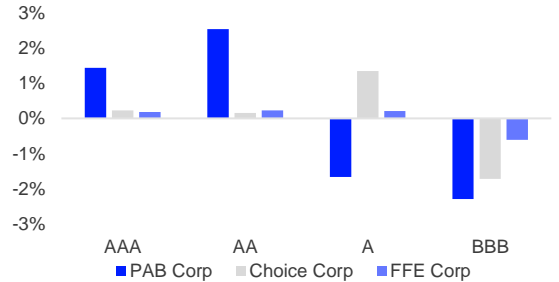


Chart 5: Selected SI Corporate OAS (bps) vs YTM (%) – recent spread tightening has occurred despite yields holding steady at high levels.

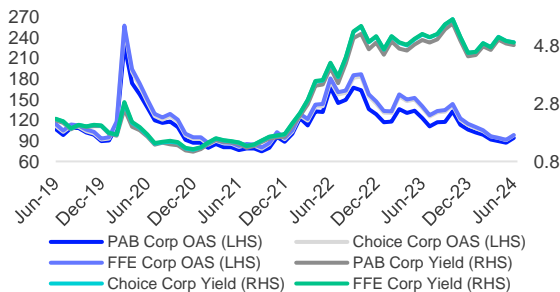
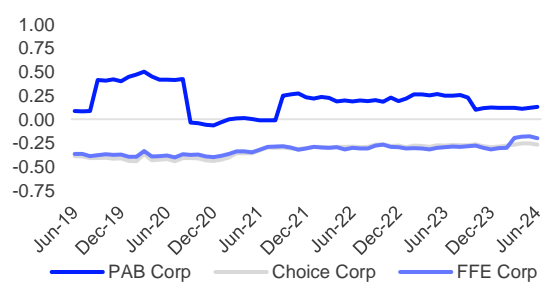


Chart 6: Selected SI Corporate Active Duration vs. WBIG Corp – active duration for PAB Corp has been mostly positive over the past 5 years, despite seeing some volatility.



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Green Bonds – Q2 2024

SI green bond performance was negative for Green Sovereigns and only narrowly positive for Green Corp over the last 3M, with returns impacted by rising yields across most developed market economies. However, despite recent weakness, 12M returns remain positive, thanks to high yields offering favourable carry as well as some market repricing in rates since the end of 2023. On a relative basis, Green Bond indices have largely underperformed their non-green counterparts over five years. However, recent relative performance has been more positive, especially for Green Corp, which has benefitted in recent months from an overweight in banks and other financials, following their solid performance since the US banking crisis in 2023. Weak relative performance for the Green Sov index has largely been a function of the index's high active duration.

Within Green Sov, currency exposure is heavily weighted towards EUR due to the large amount of sovereign green bond issuance in Europe and a lack of sovereign green bond issuance in the US (resulting in no USD holdings in the index). GBP holdings are also significant for Green Sov, with SGD and NZD rounding out the main currency overweights. On the corporate side, sectoral exposures include an overweight in banks and financials, as we well as electric utilities.

While active duration for Green Sov has been trending lower over the last five years, we note that the index still exhibits significant active duration at the end of Q2. This stands as a clear contrast to corporate green bonds, which have seen consistently lower duration than their non-green bond counterparts. Green bond issuance picked up in Q2, particularly in May and June, where issuance as a % of total bond issuance reached levels not seen since early 2023.

Chart 1: Selected SI Green Bond Returns (TR Rebased, USD Hedged) – SI green bond performance was negative for Green Sov and only narrowly positive for Green Corp over 3M.

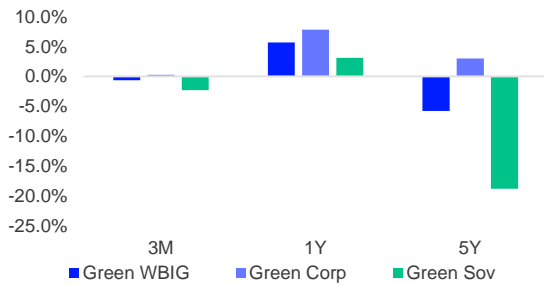


Chart 2: Selected SI Green Bond Index Relative Performance vs. WBIG, WBIG Corp, WBIG Sov (TR, USD Hedged) – Green Bonds largely underperformed over 5Y.

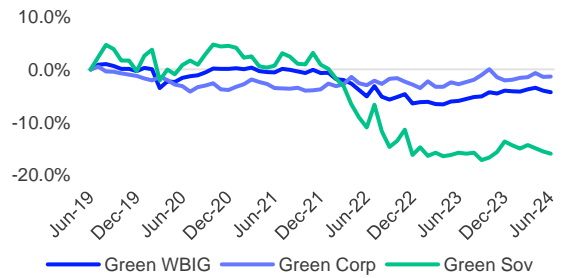


Chart 3: WBIG Sov and Green Sov Absolute Weight by Currency – Currency exposure is heavily weighted towards EUR due to high green bond issuance in the region.

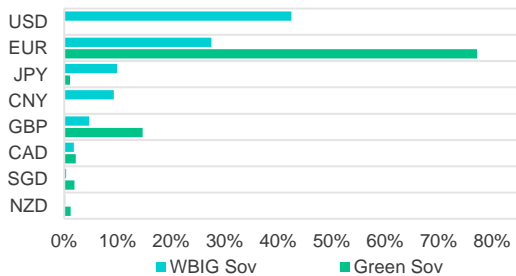


Chart 4: WBIG Corp and Green Corp Absolute Weight by Sector – Sectoral exposures include an overweight in banks and financials, as well as electric utilities.

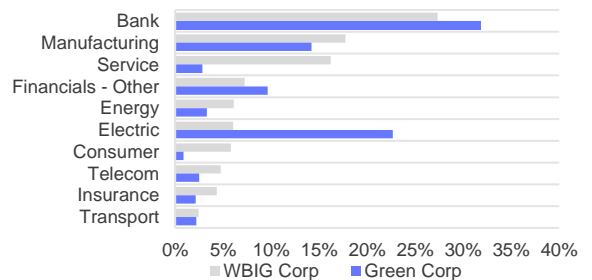


Chart 5: Selected SI Green Bond Active Duration vs. WBIG, WBIG Corp, WBIG Sov – Sovereign green bond active duration has been trending lower over the past five years.

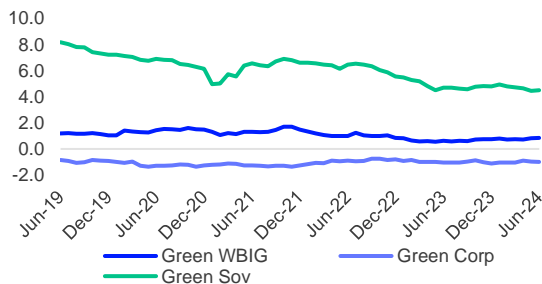
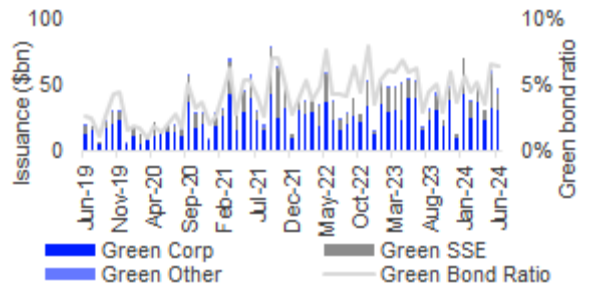


Chart 6: Green Bond Issuance – The green bond issuance ratio has reached levels in May and June not seen since early 2023.



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SI Alternatives (Real Estate & Infrastructure) – Q2 2024

SI alternatives offer different options for investors looking to diversify their portfolio, while also implementing an SI philosophy and maintaining exposure to liquid assets. FTSE Global Core Infrastructure TPI Climate Transition Index ('Green Infra') adds Alternative Electricity to the Global Core Infrastructure index and adjust weights based on risks and opportunities related to the climate transition, using TPI data. FTSE EPRA Nareit Developed Green Low Carbon Target ('EPRA Nareit Green') index adjusts the weights of listed real estate stocks based on energy usage and green building certification.

Overall listed infrastructure has seen weakness vs the broader equity market, particularly in the developed market. Green Infra has underperformed the broader infrastructure market, primarily due to its largest over and underweights. The added exposure to Alternative Electricity has resulted in a 6.6% overweight, and the index is also underweight Pipelines, a top five exposure in Global Core Infrastructure. Alternative Electricity has struggled due to increasing financing costs and volatile alternative energy equipment prices, stemming from both supply chain issues and growing geopolitical issues. By contrast, the Pipelines segment has benefitted from a strong oil price and growing North American oil & gas market.

The listed real estate market has also been under pressure, due to both higher interest rates and the trend to hybrid working. EPRA Nareit Green has underperformed over 5 years, however this has been primarily during the post covid period since 2021, with more recent performance being more in line with the market, and tracking error returning to ~1%. The main reason for the underperformance is the 2.5% overweight in Office REITs.

Chart 1: FTSE Global Core Infrastructure TPI Climate Transition Active Performance¹ – Underperforming over time.

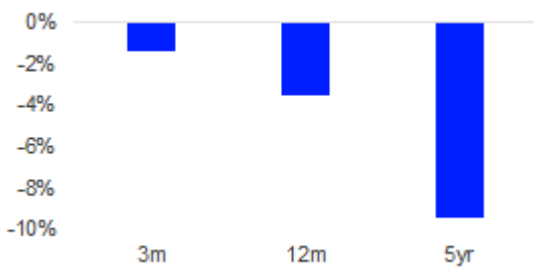


Chart 2: FTSE EPRA Nareit Developed Green Low Carbon Target Active Performance – underperformance over 5 years, closer to market over 3 & 12m

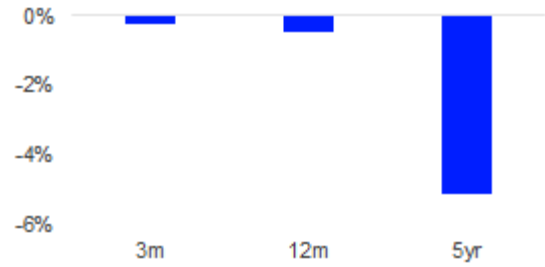


Chart 3: 12M Attribution vs FTSE Global Infrastructure – underperformance due to the inclusion of Alternative Electricity Generation, and underweight Pipelines.

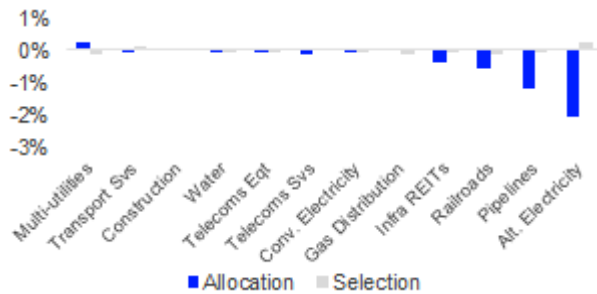


Chart 4: 12M rolling relative performance and tracking error vs FTSE EPRA Nareit Developed – Underperformance isolated to the late covid period.



Chart 5: Active weights vs FTSE Global Infrastructure – Overweight Alternative Electricity, underweight Pipelines.

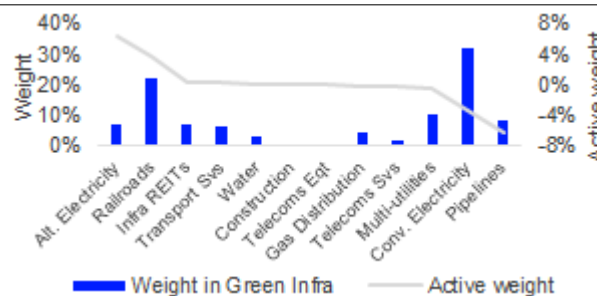
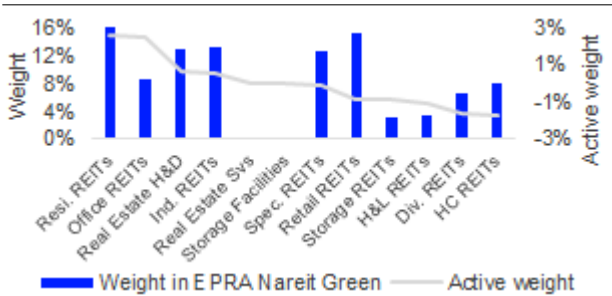


Chart 6: Active weights vs FTSE EPRA Nareit Developed – Overweight Residential & Office, underweight Healthcare.



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1. Vs FTSE Global Core Infrastructure + ICB Alternative Electricity

SI Risk / Return – 1 year and 5 year

SI equity risk/returns are relatively clustered together, both over 1 and 5 years, and are similar to that of gold. EnvOps has the highest return over 5 years but the lowest over 1 year, and in both cases, with higher risk. 4Good has one of the highest returns in both periods, with medium to lower risk. In both periods, SI equities had a stronger return than Oil and considerably lower risk.

SI bonds saw better risk/return, over 1 year versus 5 years, particularly for corporate bonds, as rate rises stopped. Corporate risk/returns are very similar, with Choice Corp and FFE Corp having slightly lower risk than the market (WorldBIG Corp) in both periods, and PAB Corp slightly higher. The standout are Green corporate bonds, which have a materially higher return and lower risk over 1 year. SI Sovereigns saw lower returns and risk than SI Corporates over both periods. The Climate WGBI return is close to the market (WGBI), while ESG WGBI saw slightly lower returns and risk. The standout are Green Sovereigns, which saw higher risk in both periods, and lower returns over 5 years, due to their much higher duration.

EPRA Nareit Green saw slightly lower return but slightly lower risk over both periods. The returns for Green Infra was weaker with a higher risk.

Chart 1: 1 year risk vs return – 4Good strongest return, ahead of Gold and Oil. Green Infra was weak, while EPRA Nareit Green close to parent. SI Corporate bonds outperformed SI sovereigns, particularly in Green Bonds.

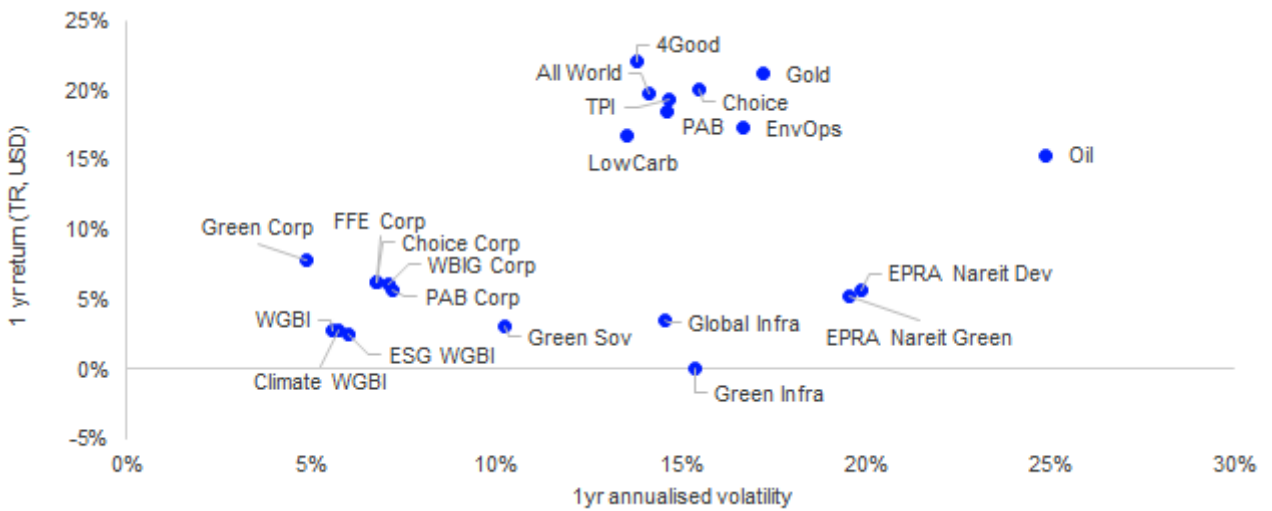
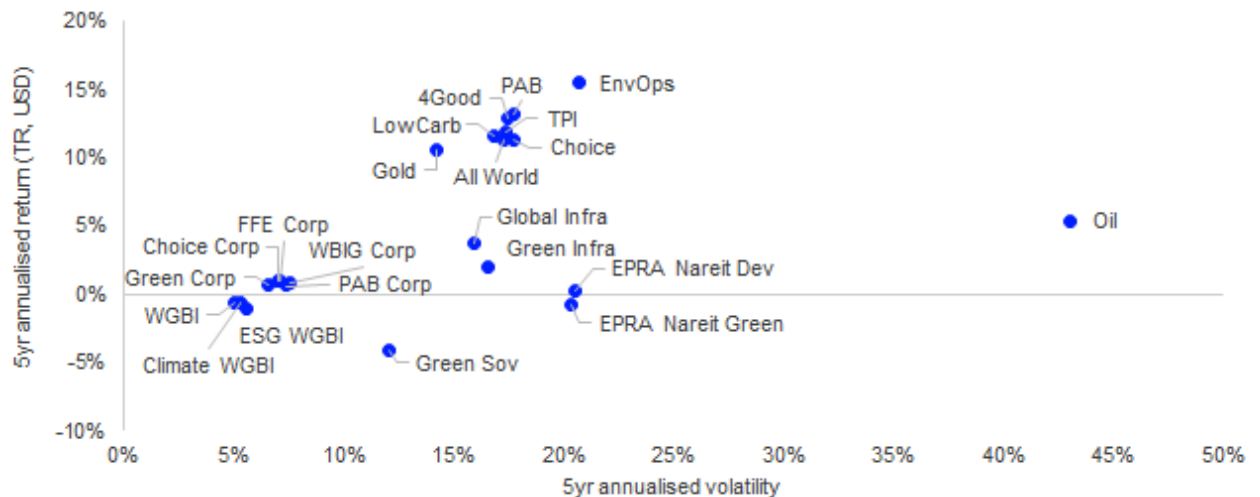


Chart 2: 5 year risk vs return – EnvOps strongest return, but with higher risk than other equity strategies. SI bond strategies have similar risk/return, while Green Infra and EPRA Nareit Green are behind parents. Oil has a weak return and higher risk, particularly compared to equity.



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Risk calculated as the annualised monthly volatility; Global Infra = FTSE Global Infrastructure + ICB Alternative Electricity

SI Correlation – 1 year and 5 year

SI/broad market correlations are high over both periods, with EnvOps, Green Infra and EPRA Nareit Green seeing the lowest correlations vs the All World in all the SI equity-related strategies. Correlations with oil were low over 5 years and turned negative over 1 year.

SI fixed income strategies saw lower correlation to SI equities (although higher over 1 year) but remain highly correlated to their broad market parents. EPRA Nareit indices have become highly correlated especially with corporate bonds over 1 year, reflecting the exposure of real estate to the interest rate cycle. Green bonds saw a slightly lower correlation to bond markets over 5 years, but their correlation has increased over 1 year.

Chart 1: 1 year cross correlation – High SI/broad market correlations remain within assets classes, with correlation between equities and fixed income rising (particularly in listed real estate). Oil negatively correlated over 1 year.

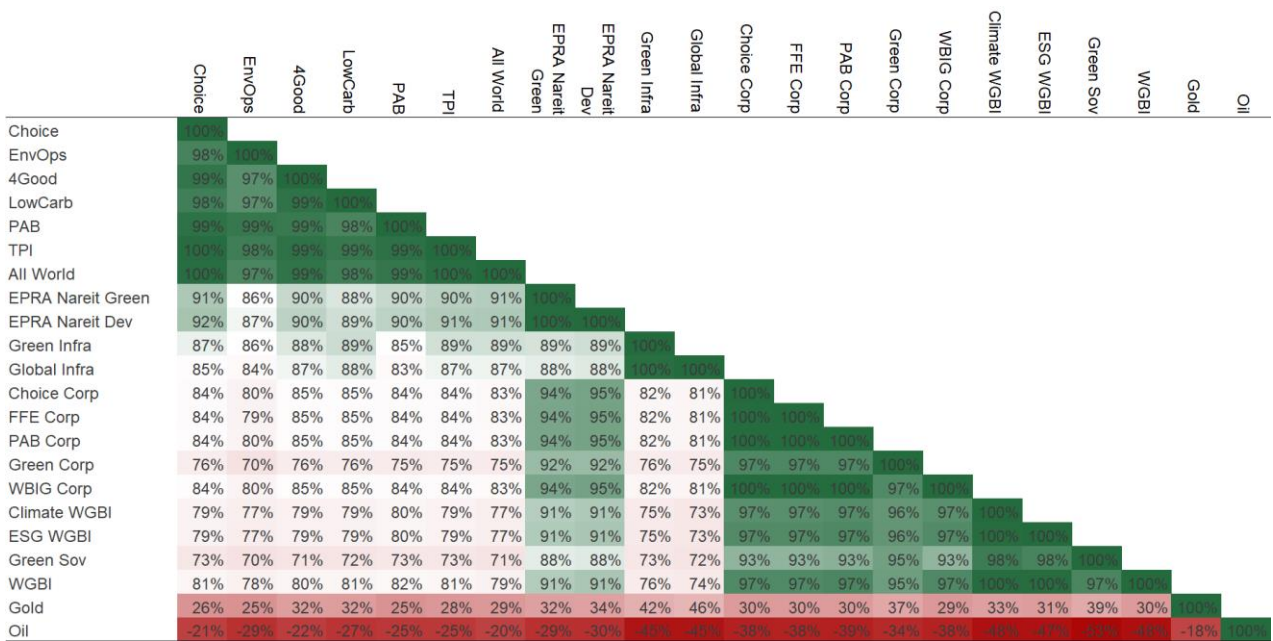
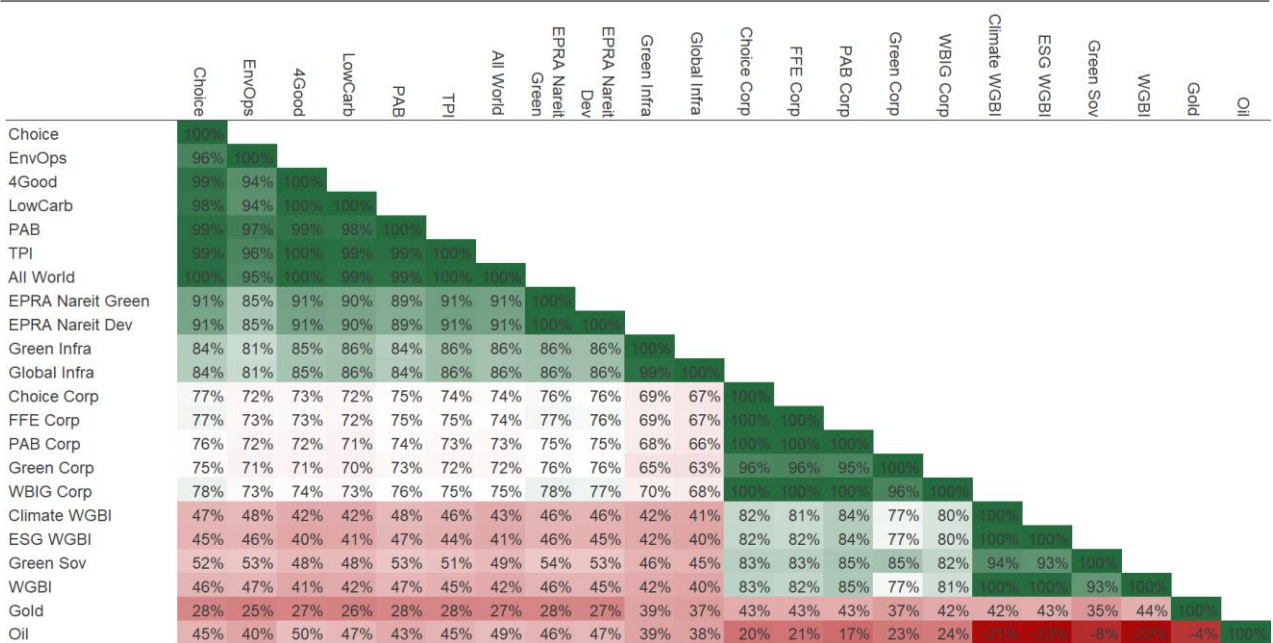


Chart 2: 5 year cross correlation – High correlations between SI strategies and broader market within similar asset classes.



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Correlation calculated based on monthly performance; Global Infra = FTSE Global Infrastructure + ICB Alternative Electricity.

FTSE Global Choice indices – Q2 2024

The performance of Global Choice was ahead of the market in Q1 at the global index level, however geographical performance was mixed, with US and Europe outperforming, and EM, APAC and UK underperforming. The majority of outperformance came from overweight allocation in Technology and underweight allocation in Energy. Underperformance came from selection in Industrials. European outperformance was broad based, driven by overweight allocation in Healthcare and selection in Consumer Discretionary. 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 %)

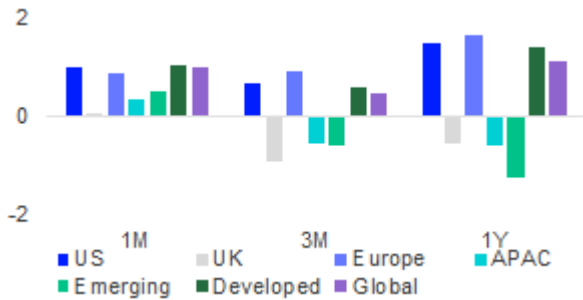


Chart 2: Global Choice carbon emissions / revenues

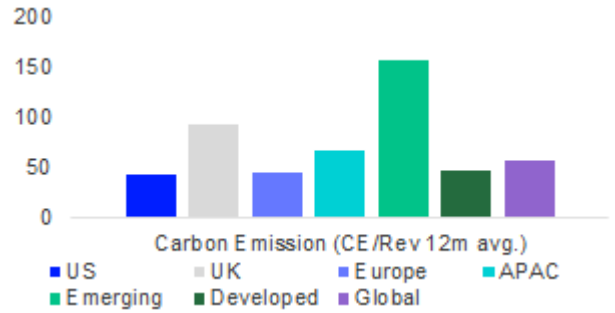


Chart 3: 3M Attribution of global index (TR, USD %)

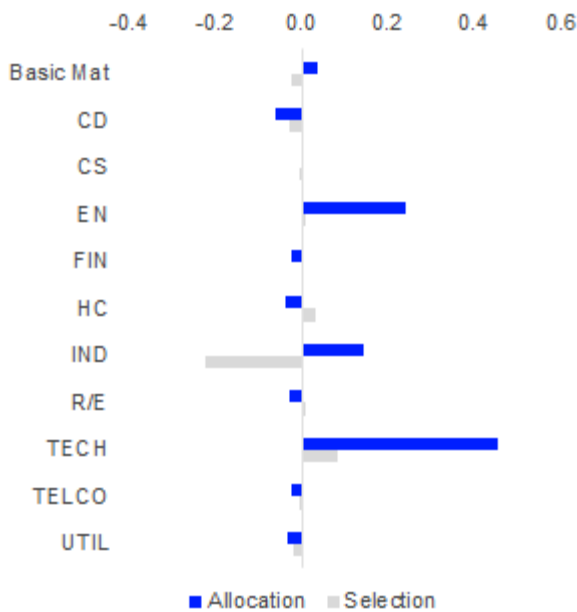


Chart 4: Contribution to carbon reduction (%)

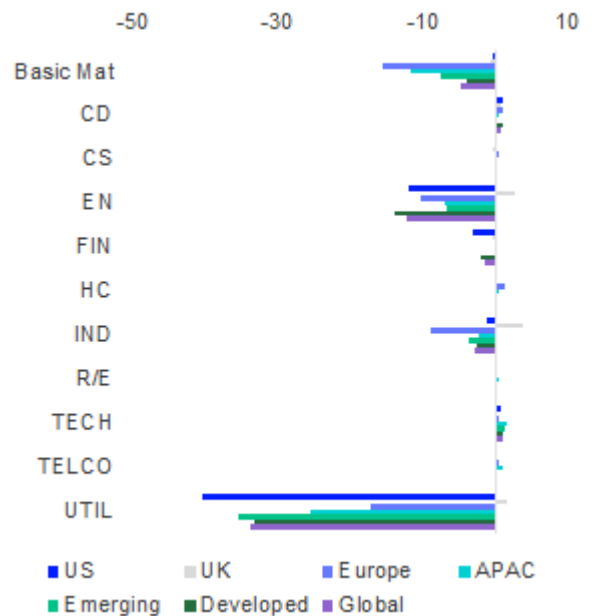
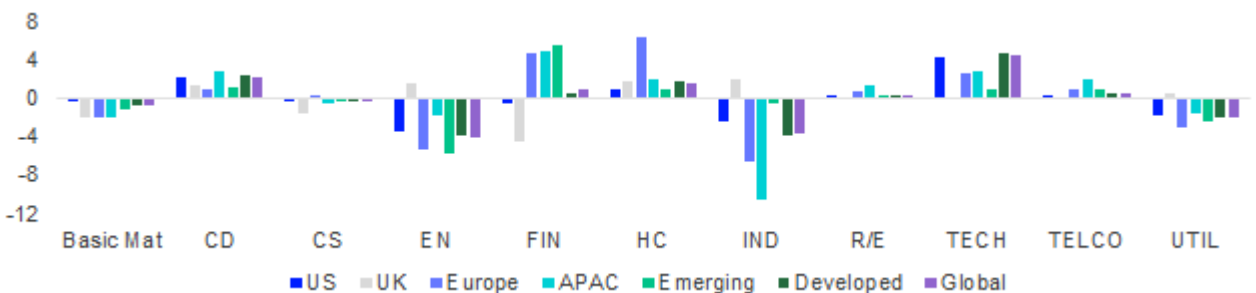


Chart 5: Active industry weights (%)



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FTSE4Good indices – Q2 2024

4Good was again the strongest outperformer at the global index level in Q2. All regions outperformed, with the US seeing the largest outperformance, and UK the lowest. The majority of outperformance came from the overweight allocation and positive selection in Tech. Underperformance came from selection in Consumer Discretionary. US outperformance was similar to that of Global, driven by both allocation and selection in Tech. UK, European and Japanese indices have the highest ESG scores, while EM has the lowest. The majority of ESG uplift came from overweights in Technology and Financials, and underweights in Consumer Discretionary.

Chart 1: Active Performance (TR, USD %)

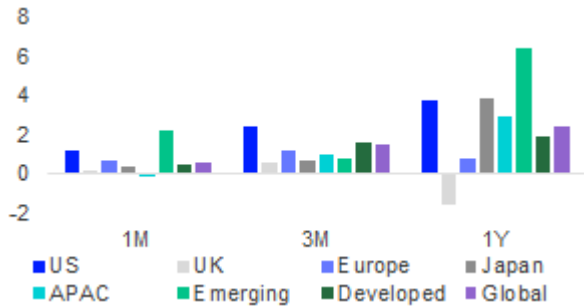


Chart 2: FTSE4Good ESG scores

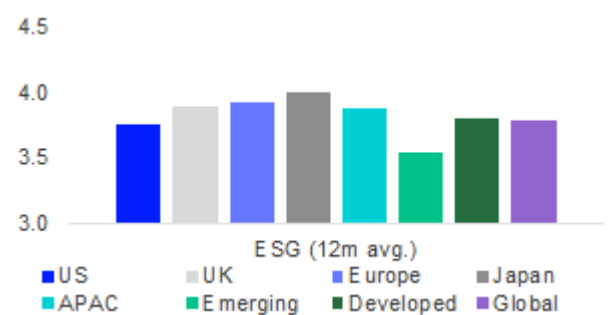


Chart 3: 3M Attribution of global index (TR, USD %)

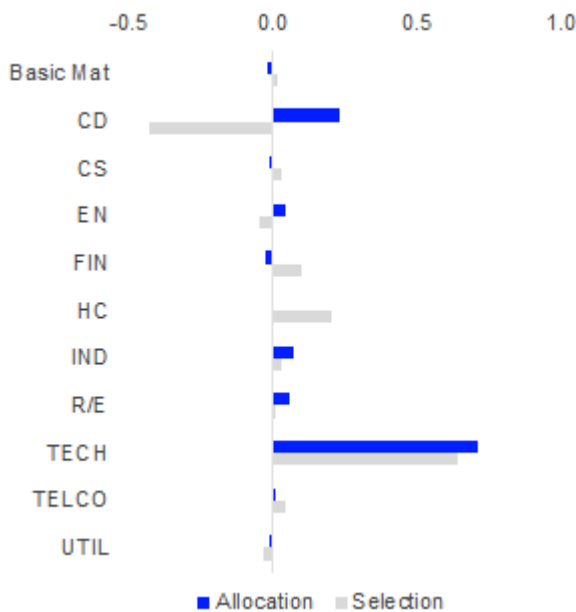


Chart 4: Contribution to ESG uplift (%)

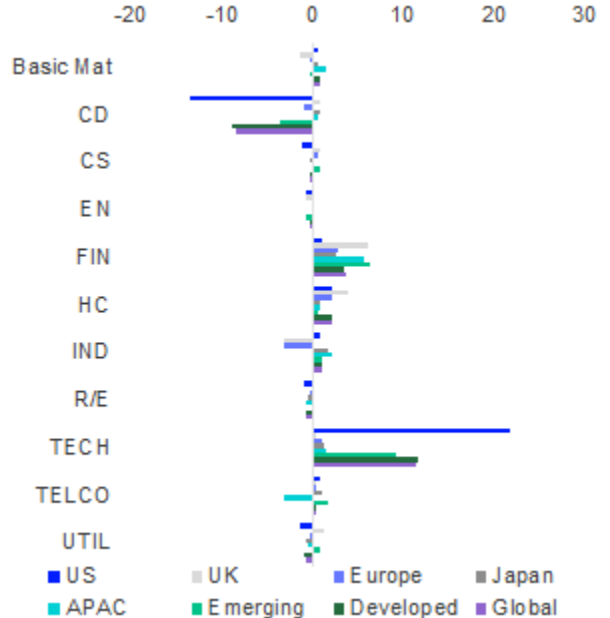
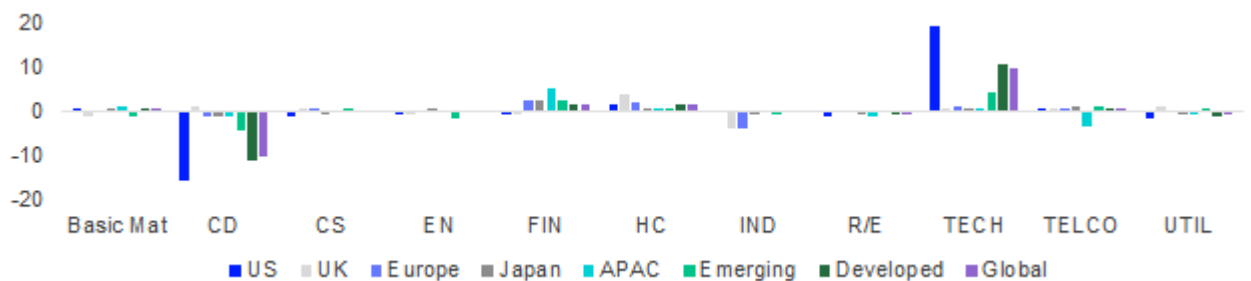


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FTSE Environmental Opportunities (EO) indices – Q2 2024

EnvOps indices were slightly ahead of the market at the global index level in Q2. APAC strongly outperformed. Europe was slightly ahead of the market. Japan significantly underperformed, while the US and UK were behind the market. The majority of outperformance came from overweight allocation in Technology. Underperformance came from negative Tech selection. APAC outperformance came from allocation and selection in Tech. Japan underperformance came from selection in Consumer Discretionary, Industrials and Tech. EnvOps indices are heavily overweight Industrials, Technology and Utilities (& Consumer Discretionary in Japan).

Chart 1: Active Performance (TR, USD %)

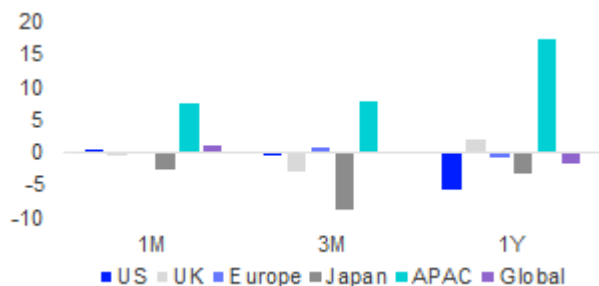


Chart 2: Environmental Ops Green Revenues scores

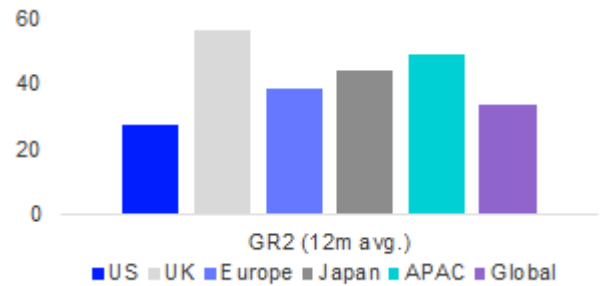


Chart 3: 3M Attribution of global index (TR, USD %)

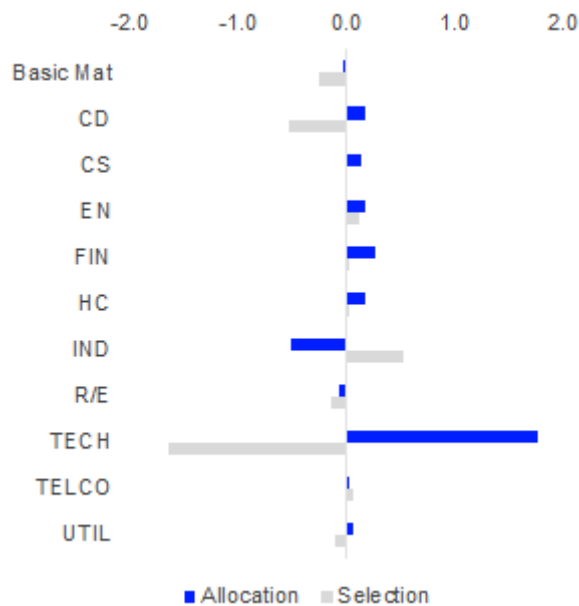


Chart 4: Contribution to Green Revenues uplift (%)

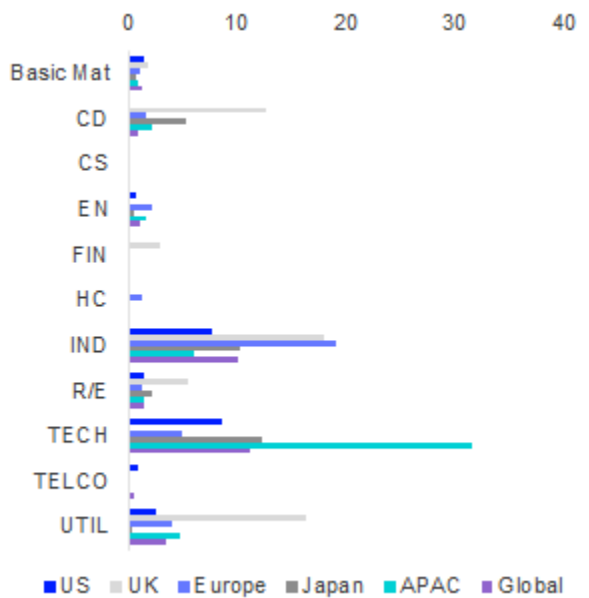
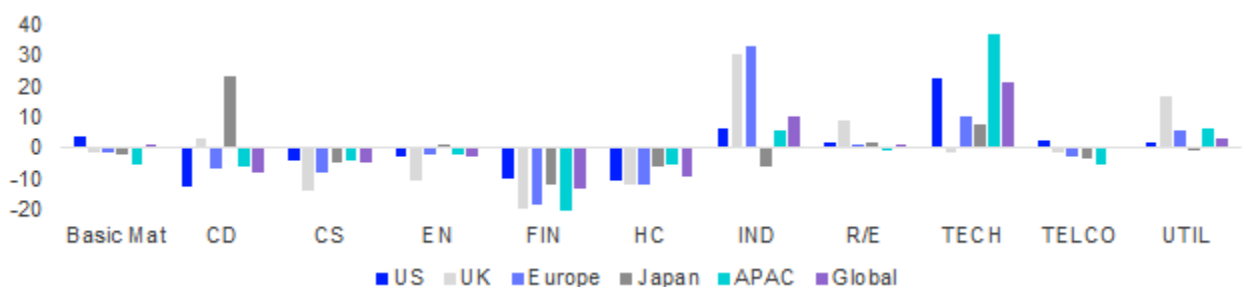


Chart 5: Active industry weights (%)



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FTSE ESG Low Carbon Target Exposure indices – Q2 2024

FTSE ESG Low Carbon underperformed DM in Q2. Europe, Japan and APAC outperformed, while the US, UK and Emerging underperformed. The majority of underperformance came from selection in Tech, Consumer Discretionary and Healthcare. Outperformance came from selection in Financials and Industrials. Japanese outperformance was driven by positive selection in Tech & Industrials, offset by negative selection in Consumer Discretionary. US underperformance was driven by negative selection in Tech and Healthcare. 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 %)

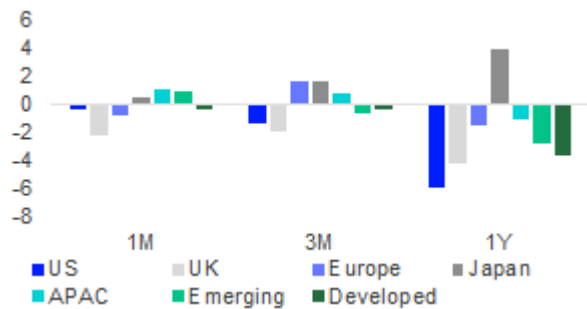


Chart 2: ESG Low Carbon ESG scores

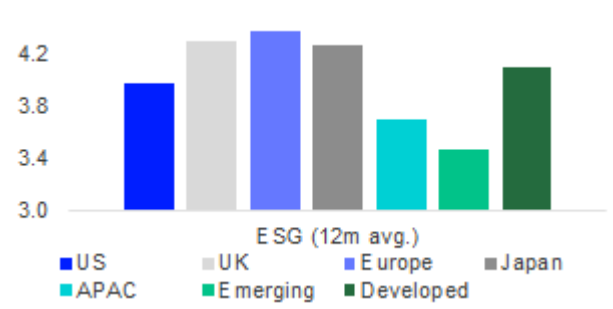


Chart 3: 3M Attribution of developed index (TR, USD %)

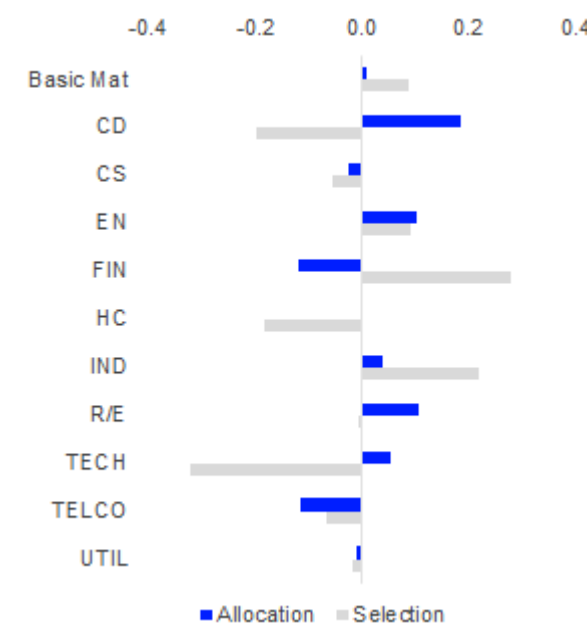


Chart 4: Contribution to ESG uplift (%)

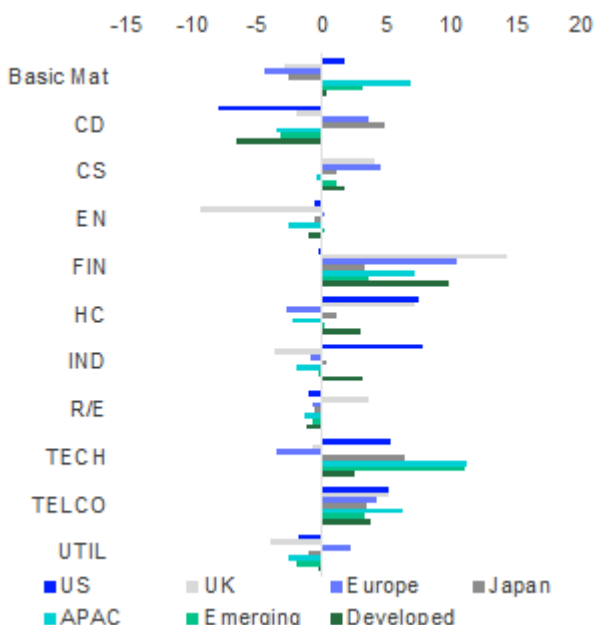
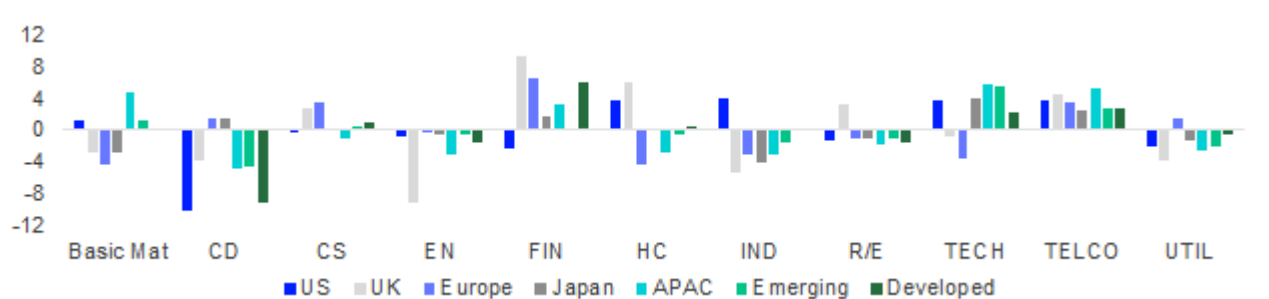


Chart 5: Active industry weights (%)



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

FTSE EU Paris-Aligned Benchmark (PAB) indices – Q2 2024

PAB outperformed at the global index level in Q2. Developed outperformed (US or European PAB standalone indices do not exist), while the UK and Emerging underperformed. The majority of outperformance came from overweight allocation in Technology and underweight allocation in Energy. Underperformance came from overweight allocation in Consumer Discretionary and negative selection in Industrials. Developed outperformance came from underweight allocation in Energy and selection in Consumer Discretionary, offset by negative selection in Technology. 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 %)

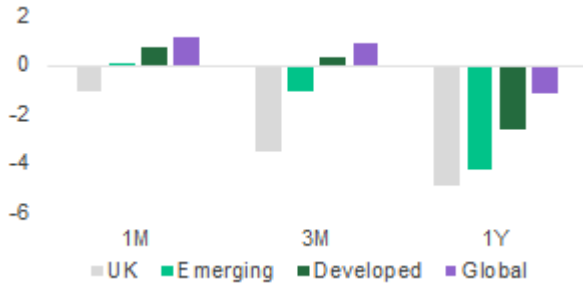


Chart 2: PAB Carbon Emissions / EVIC

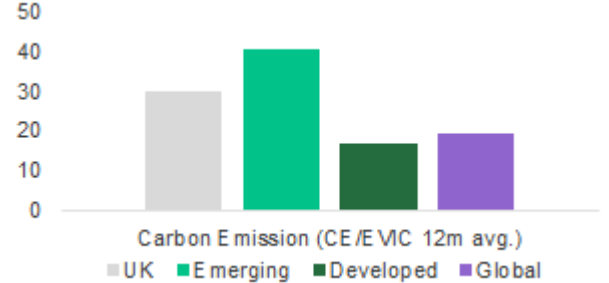


Chart 3: 3M Attribution of global index (TR, USD %)

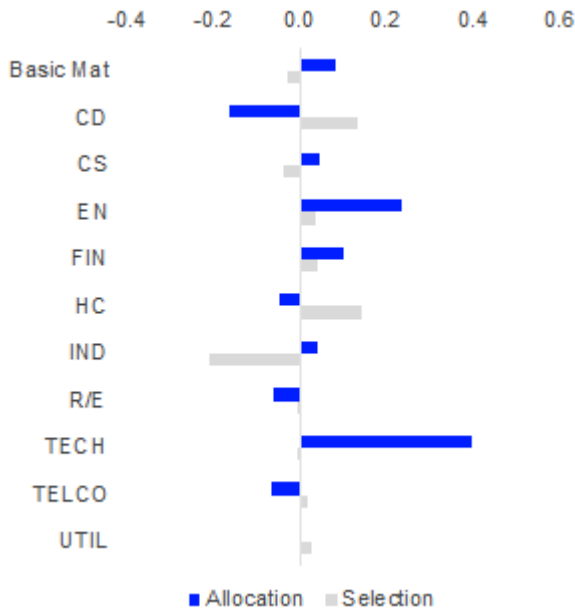


Chart 4: Contribution to Carbon Reduction (%)

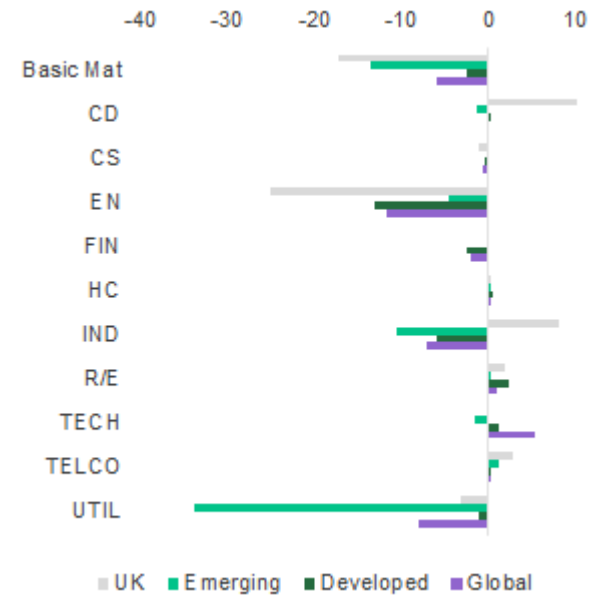
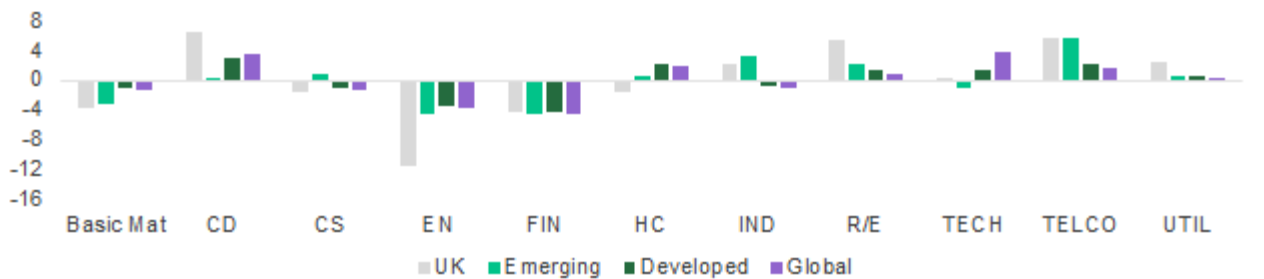


Chart 5: Active industry weights (%)



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

FTSE TPI Climate Transition indices – Q2 2024

TPI indices outperformed at the global index level in Q2. US and Emerging outperformed, while Japan underperformed. The majority of outperformance came from overweight allocation and selection in Technology and underweight allocation in Energy. Underperformance came from an overweight allocation and selection in Consumer Discretionary. US outperformance came from positive selection in Technology and underweight allocation in Energy. Japanese underperformance came from an overweight allocation and negative selection in Consumer Discretionary. 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 %)

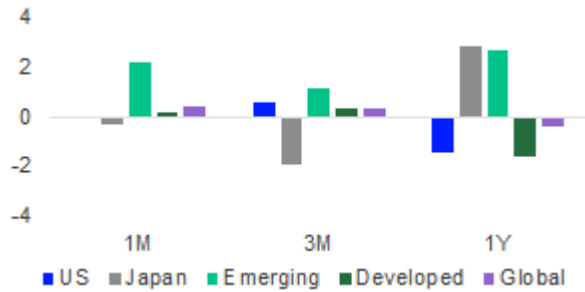


Chart 2: TPI Index TPI Management Quality scores

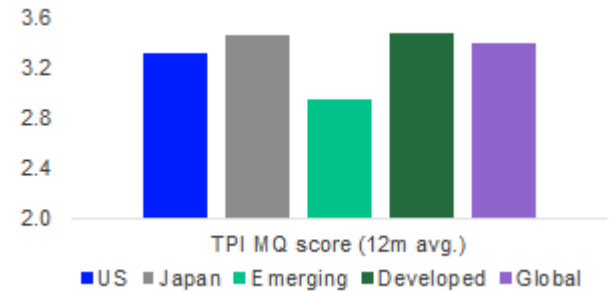


Chart 3: 3M Attribution of global index (TR, USD %)

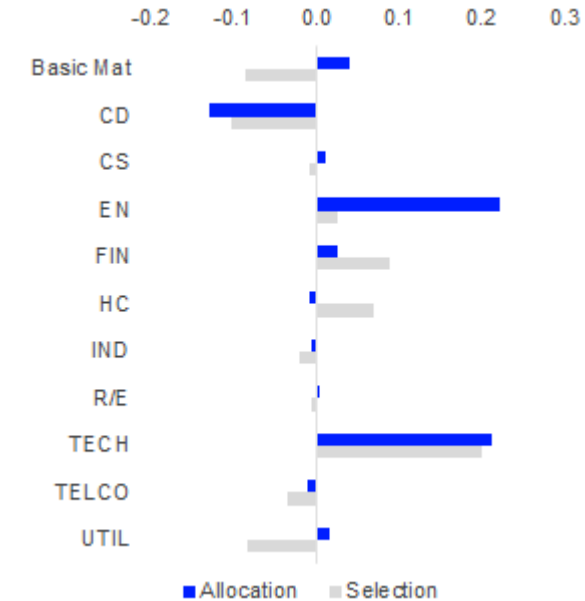


Chart 4: Contribution to TPI Management Quality uplift (%)

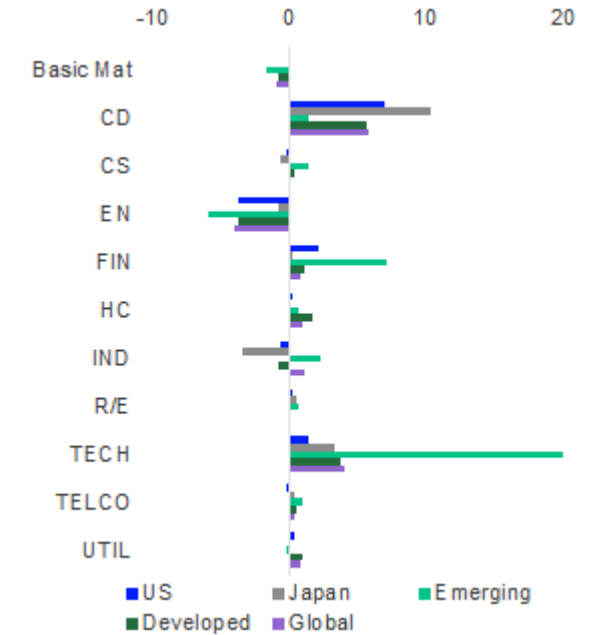
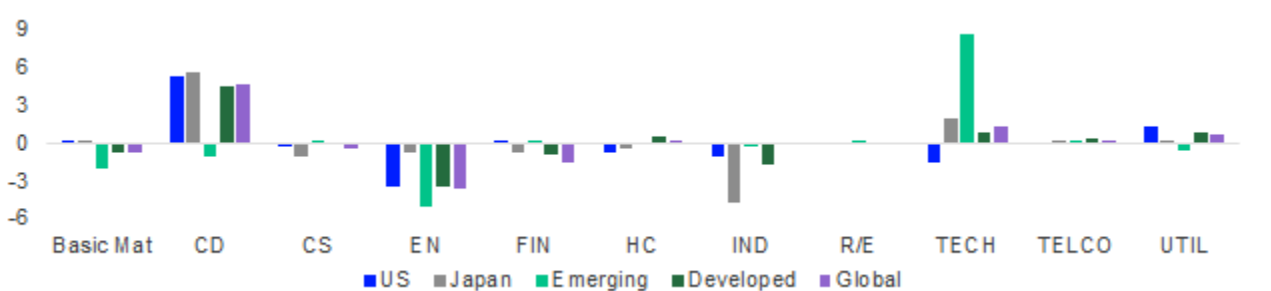


Chart 5: Active industry weights (%)



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Global Index Comparisons – Q2 2024

Global SI indices all outperformed in Q2. The biggest outperformer was FTSE4Good, driven by an overweight allocation and positive selection in Tech. The lowest underperformance was from EnvOps, driven by negative selection in Tech. PAB recovered from previous weakness due to overweight allocation in Tech and underweight allocation in Energy. However PAB, EnvOps and TPI remain behind the market over 12m. TPI, EnvOps and Choice are trading at close to their 5-year relative P/E premium, while PAB and FTSE4Good are slightly higher. During Q2, premia remained largely unchanged. 4Good is the cheapest strategy, whereas EnvOps remains the most expensive.

Chart 1: Active Performance (TR, USD %)

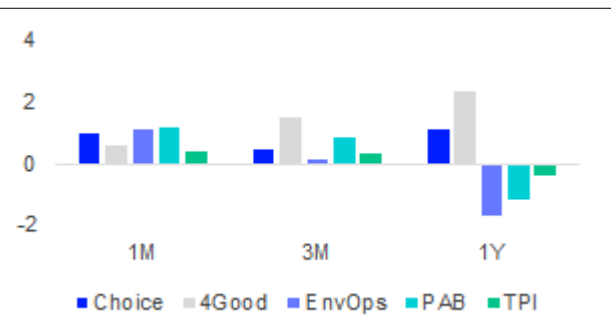


Chart 2: Index tracking error (%)

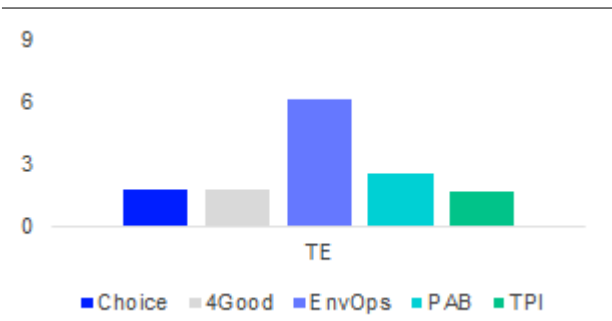


Chart 3: Industry active weight (3M ave %)

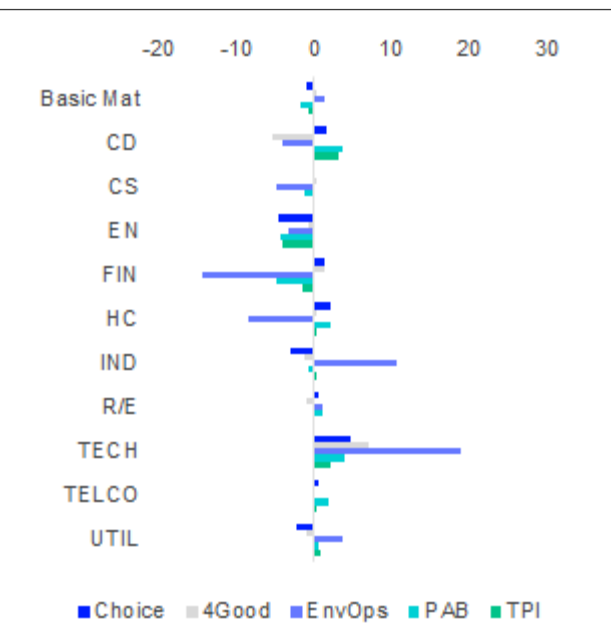


Chart 4: 3M industry allocation effect (%)

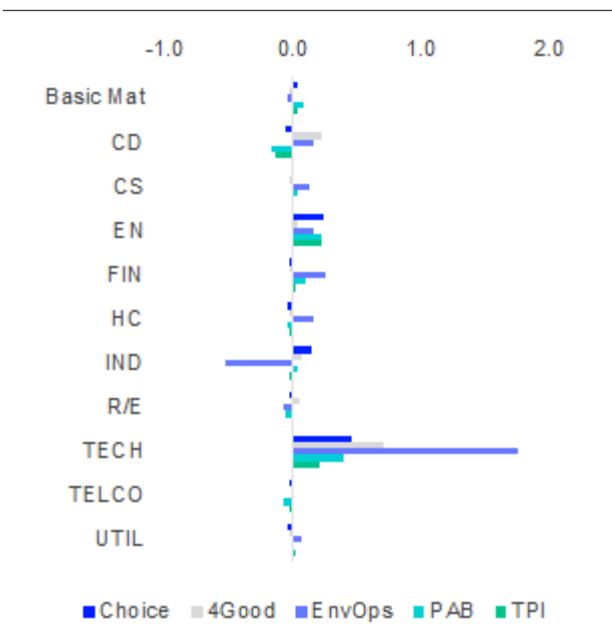
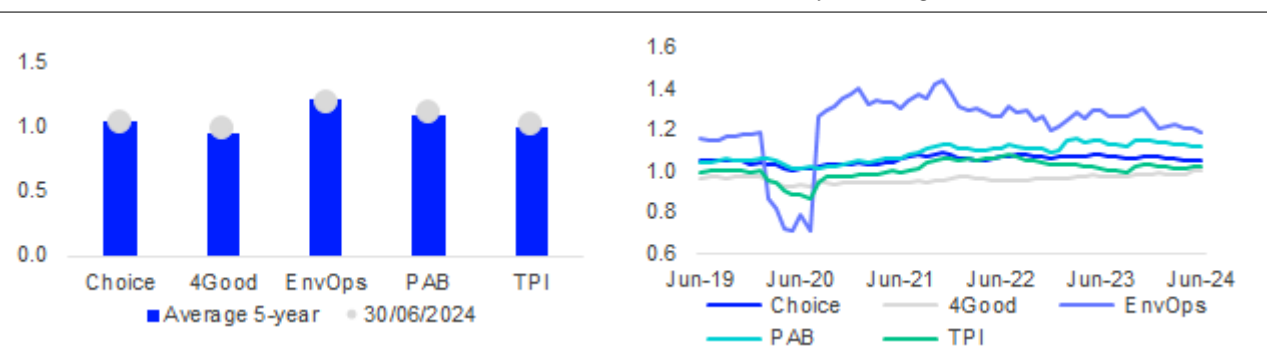


Chart 5: Global indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

US Index Comparisons – Q2 2024

US SI indices were mixed in Q1. FTSE4Good outperformed, driven by an overweight allocation and positive selection in Tech and positive selection in Healthcare, partially offset by negative selection in Consumer Discretionary. The biggest underperformer was LowCarb, driven by negative selection in Tech and Healthcare, partially offset by positive selection in Industrials. Choice and TPI also outperformed and EnvOps was slightly behind the market. LowCarb and TPI trade at a modest discount to the market, while 4Good is in line. Choice is at a slight premium, and EnvOps is at a greater, but falling premium.

Chart 1: Active Performance (TR, USD %)

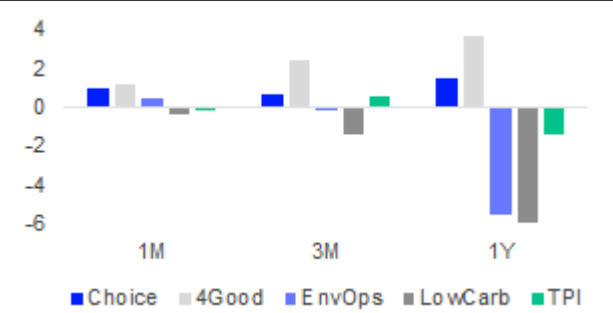


Chart 2: Index tracking error (%)

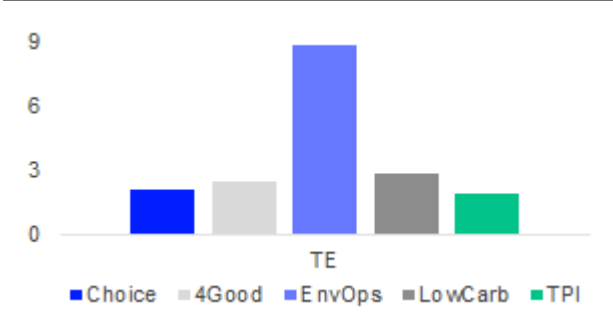


Chart 3: Industry active weight (3M ave %)

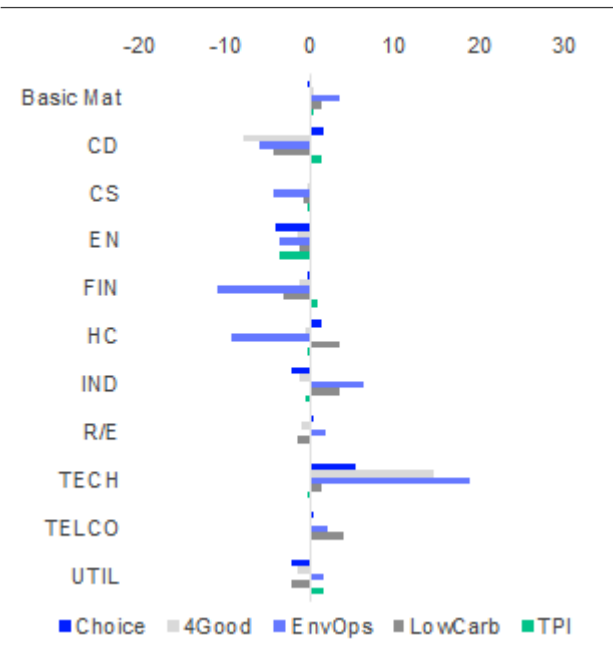


Chart 4: 3m industry allocation effect (%)

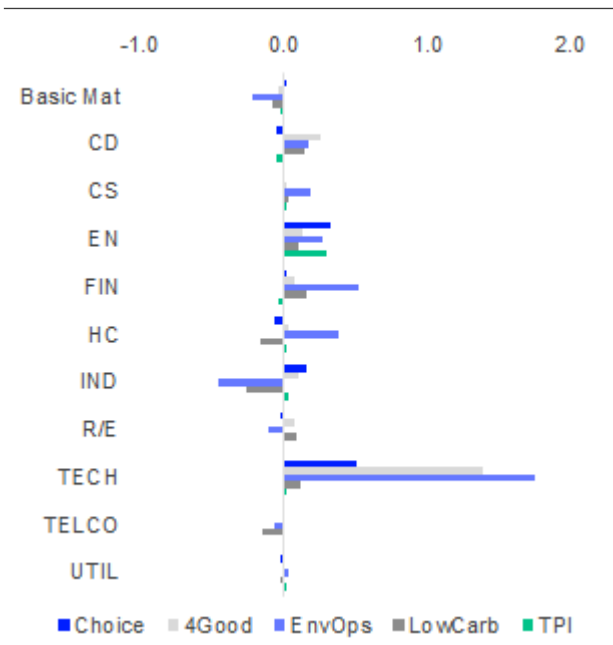
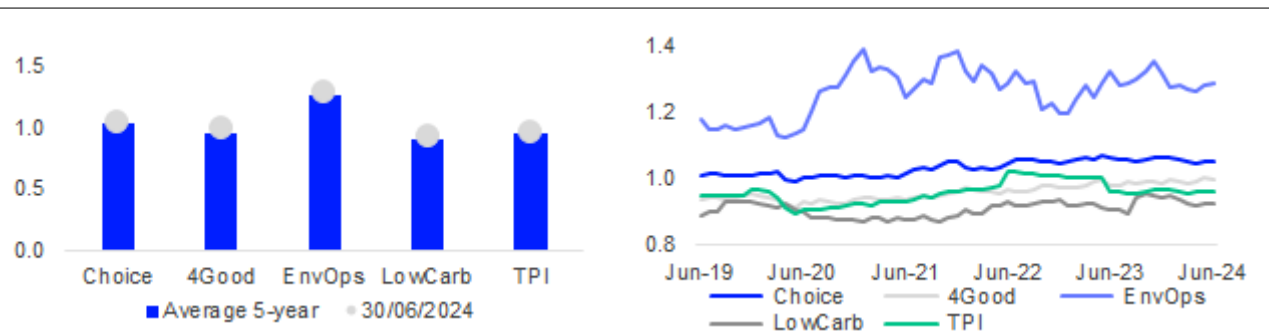


Chart 5: US indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

UK Index Comparisons – Q2 2024

UK SI indices predominantly underperformed in Q2. 4Good was the only outperformer, driven by positive selection in Energy and Healthcare. PAB was the biggest underperformer, driven by negative selection in Financials, Consumer Staples and Basic Materials, partially offset by overweight allocation in Tech. Choice, EnvOps and LowCarb also underperformed. In the UK, Choice and 4Good trade in line with their 5-year P/E premium, while PAB is above and Env Ops and LowCarb are below. Premia have been largely flat in Q2, except EnvOps which has been falling.

Chart 1: Active Performance (TR, USD %)

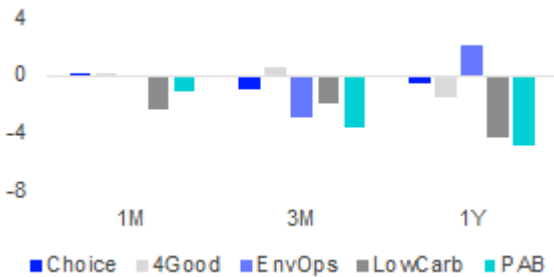


Chart 2: Index tracking error (%)

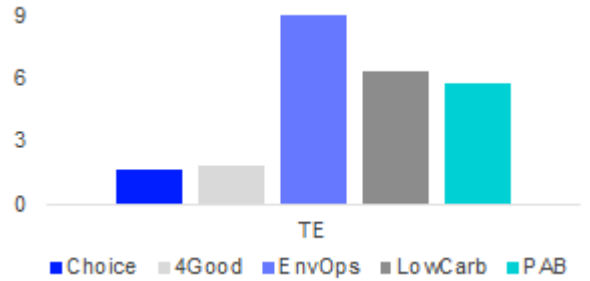


Chart 3: Industry active weight (3M ave %)

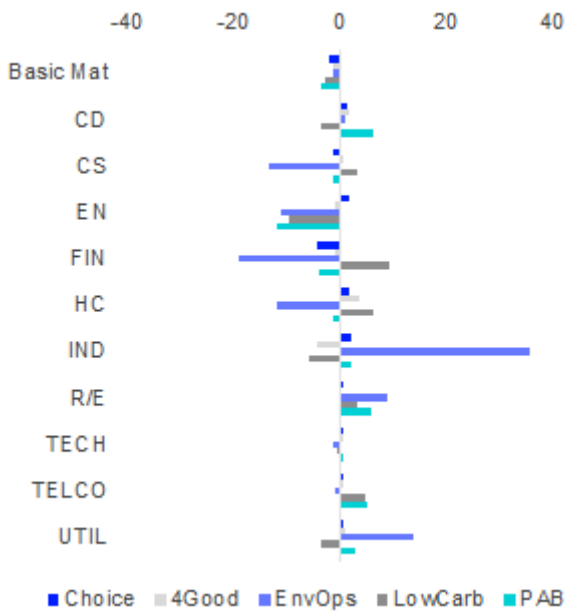


Chart 4: 3M industry allocation effect (%)

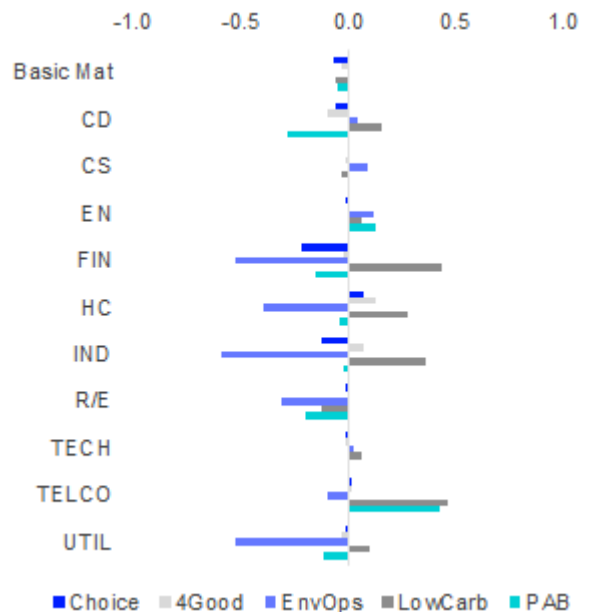
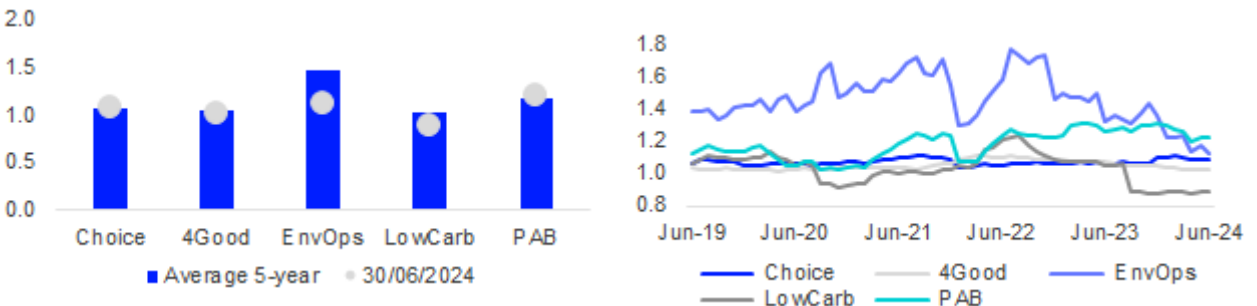


Chart 5: UK indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

Europe Index Comparisons – Q2 2024

European SI indices all outperformed in Q2. LowCarb was the biggest outperformer, driven by positive selection in Consumer Discretionary, Industrials, Financials and Healthcare, partially offset by negative selection in Consumer Staples. Choice saw the lowest outperformance, driven by overweight allocation in Healthcare and positive selection in Consumer Discretionary, partially offset by negative selection in Financials. 4Good and EnvOps also outperformed. European SI index relative valuations are in line with their 5-year averages, except Env Ops which is trading slightly below.

Chart 1: Active Performance (TR, USD %)

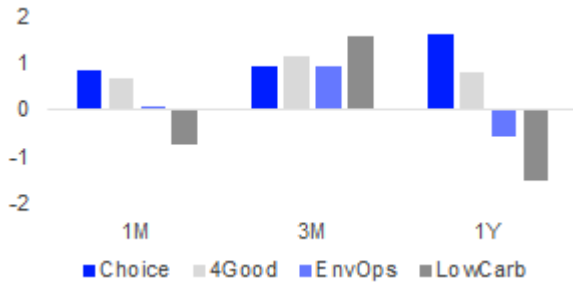


Chart 2: Index tracking error (%)

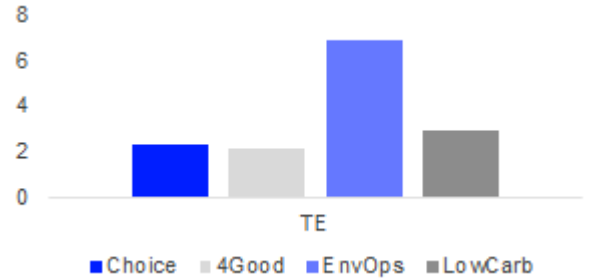


Chart 3: Industry active weight (3M ave %)

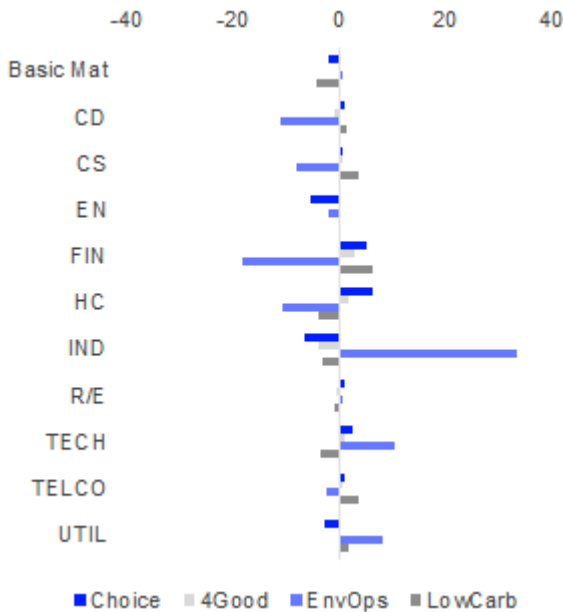


Chart 4: 3M industry allocation effect (%)

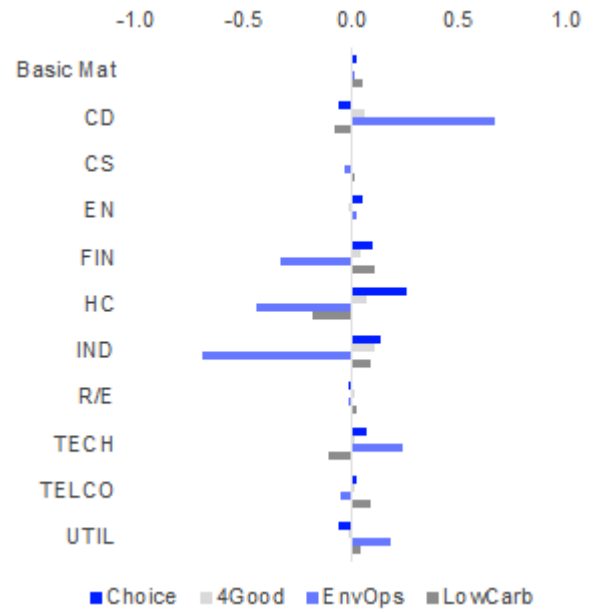
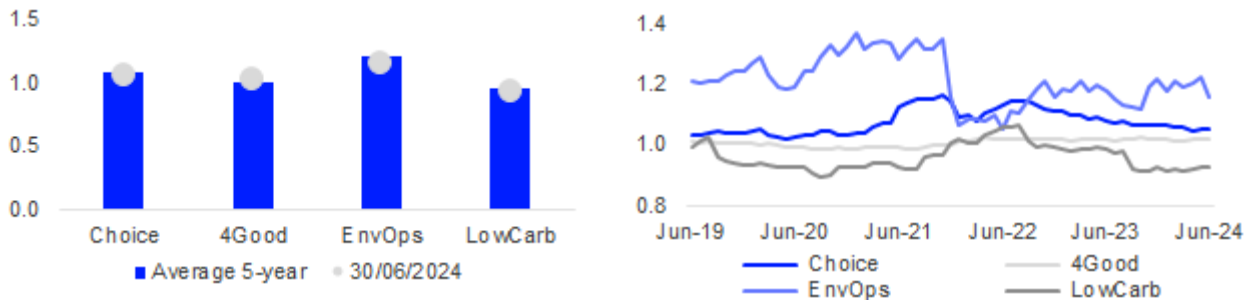


Chart 5: European indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

Japan Index Comparisons – Q2 2024

Japanese SI indices saw mixed performance in Q2. LowCarb was the strongest outperformer, driven by positive selection in Tech and Industrials, partially offset by negative selection in Consumer Discretionary. EnvOps saw the largest underperformance, driven by negative selection in Consumer Discretionary, Tech and Industrials, overweight allocation in Consumer Discretionary and underweight allocation in Financials. 4Good outperformed, while TPI underperformed. 4Good, LowCarb and TPI have a P/E premium ahead of their 5-year average, while that of Env Ops is below its 5-year average, due to new inclusions to the index over time.

Chart 1: Active Performance (TR, USD %)

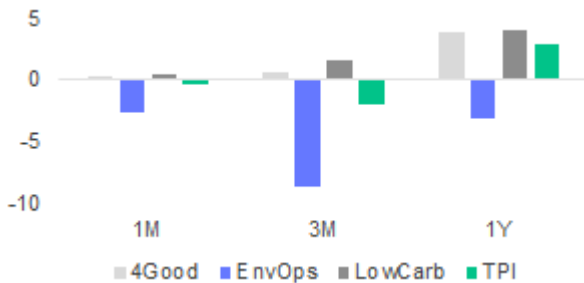


Chart 2: Index tracking error (%)

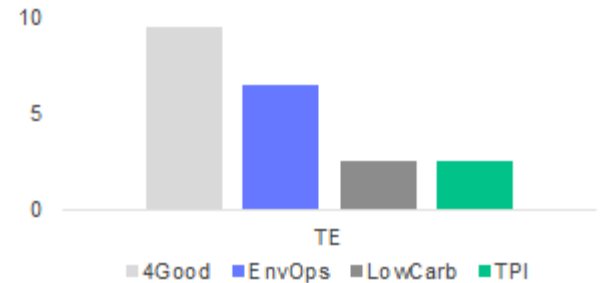


Chart 3: Industry active weight (3M ave %)

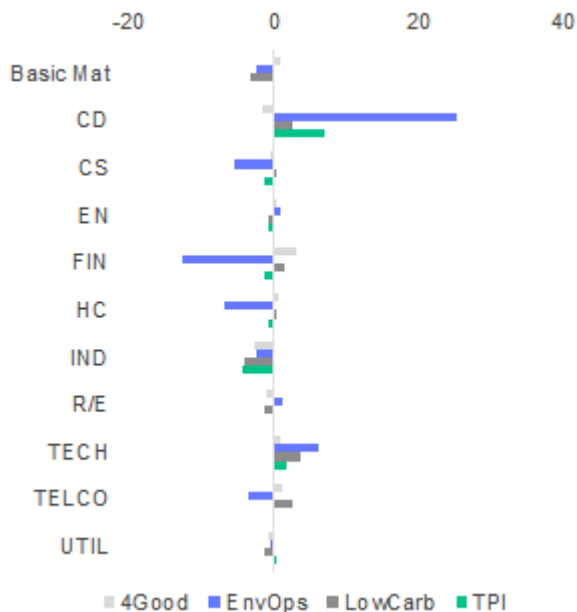


Chart 4: 3M industry allocation effect (%)

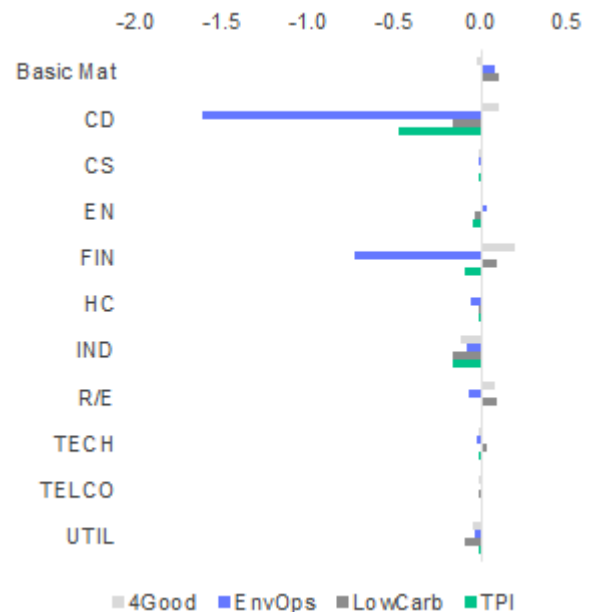
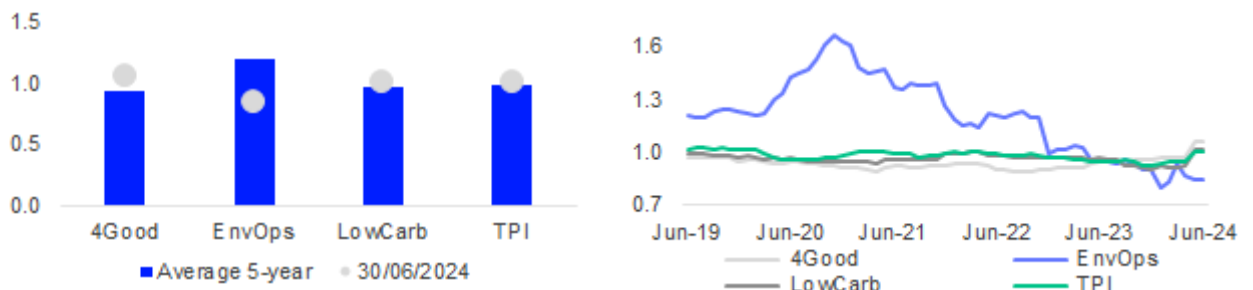


Chart 5: Japanese indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

Asia Pacific Index Comparisons – Q2 2024

APAC SI indices predominately outperformed in Q2. Env Ops was the strongest outperformer, driven by overweight allocation and positive selection in Tech, partially offset by negative selection in Industrials and Basic Materials. Choice was the only underperformer, driven by negative selection in Industrials and Consumer Discretionary, partially offset by overweight allocation in Financials. 4Good and LowCarb also outperformed. 4Good has seen a recent rise in P/E premium, putting it ahead of its 5-year average, while other SI strategies are in line or slightly below their historical averages.

Chart 1: Active Performance (TR, USD %)

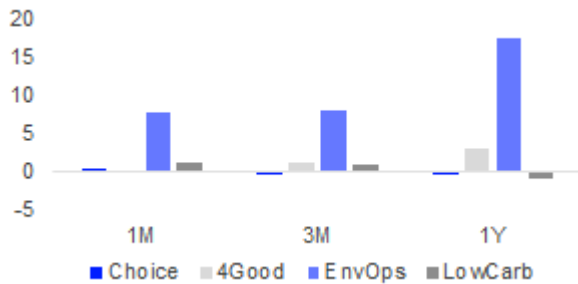


Chart 2: Index tracking error (%)

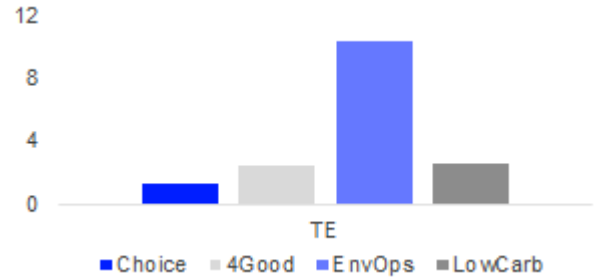


Chart 3: Industry active weight (3M ave %)

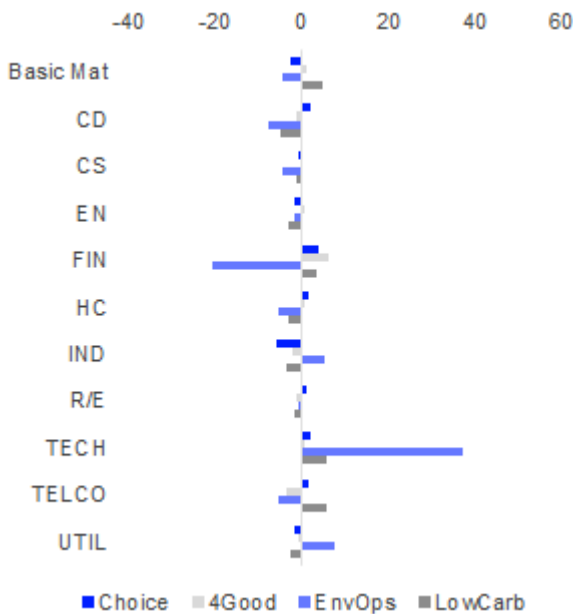


Chart 4: 3M industry allocation effect (%)

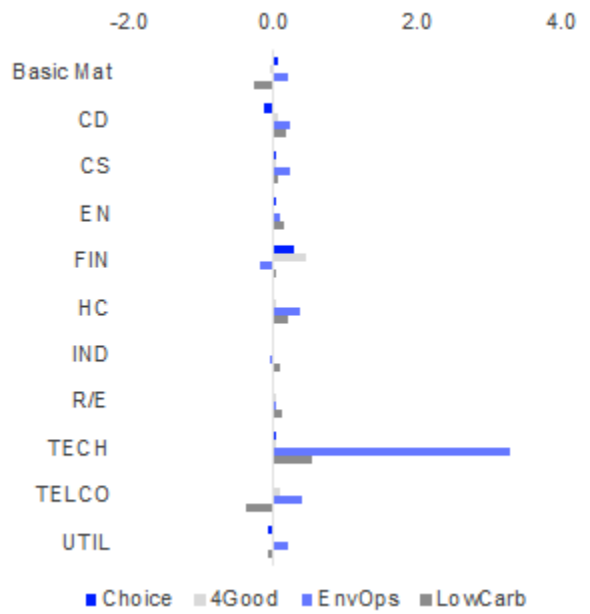
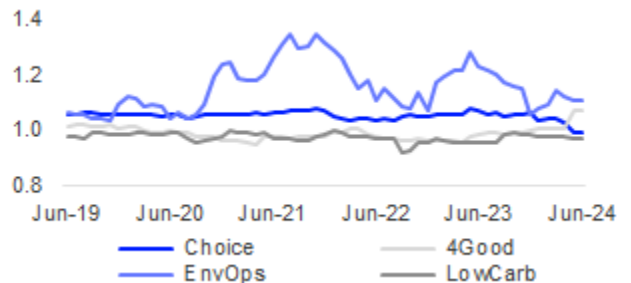
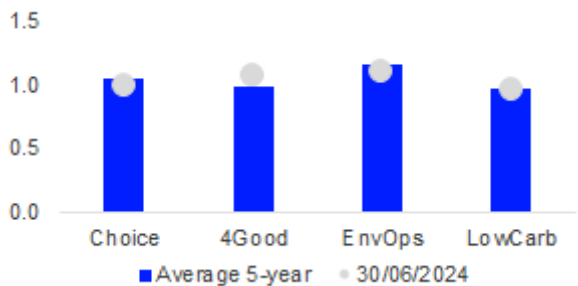


Chart 5: APAC indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

Emerging Markets Index Comparisons – Q2 2024

EM SI indices saw mixed outperformance in Q2. TPI was the strongest outperformer, driven by overweight allocation in Tech, underweight allocation in Energy and positive selection in Tech and Financials, partially offset by negative selection in Industrials and Consumer Discretionary. PAB was the biggest underperformer, driven by negative selection in Tech, Consumer Discretionary and Energy. Choice and LowCarb underperformed, while 4Good outperformed; 4Good has a much higher tracking error in EM than in other regions, due to a more index constituents being excluded due to low ESG scores. SI valuation premia are relatively modest in EM, with PAB and 4Good being the highest, and above their historical average.

Chart 1: Active Performance (TR, USD %)



Chart 2: Index tracking error (%)

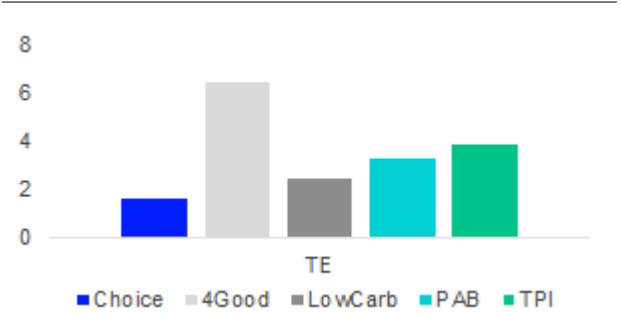


Chart 3: Industry active weight (3M ave %)

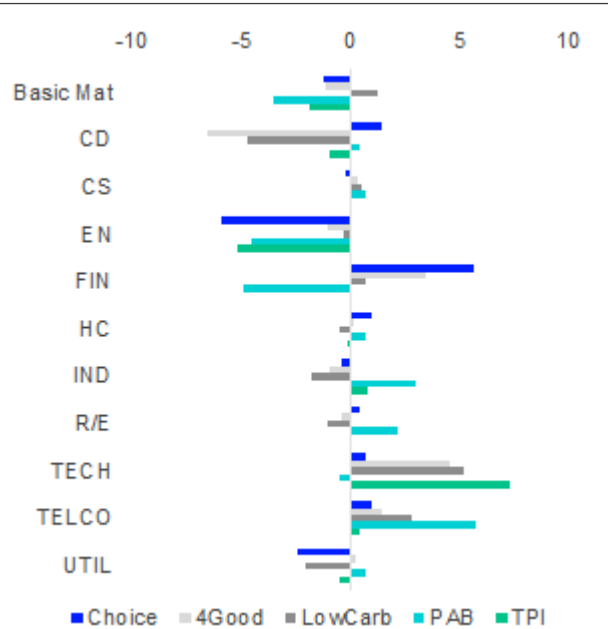


Chart 4: 3M industry allocation effect (%)

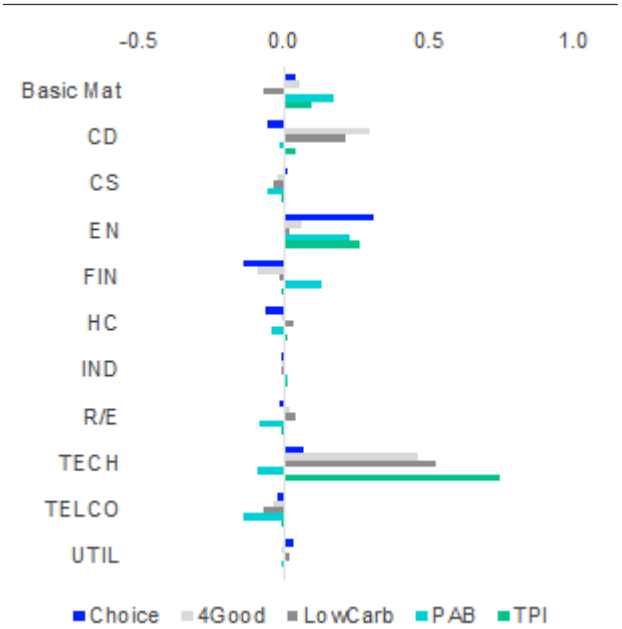
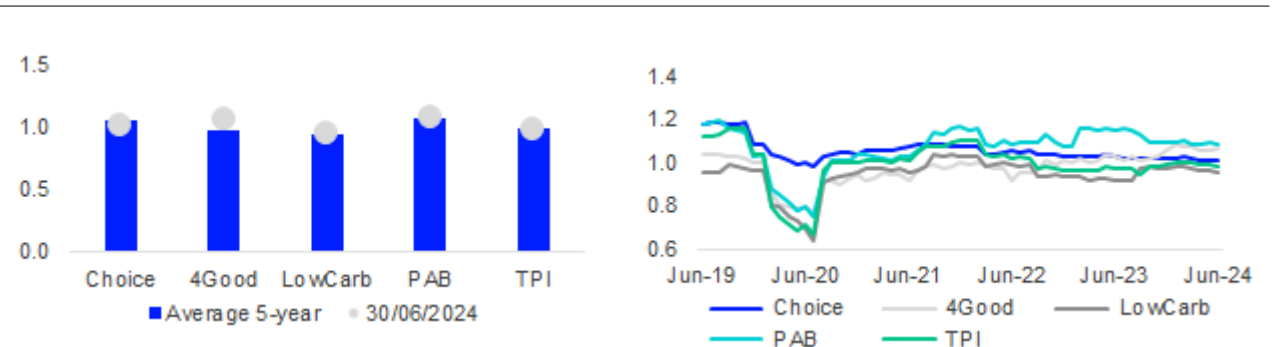


Chart 5: EM indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

Developed Markets Index Comparisons – Q2 2024

Developed SI indices predominantly outperformed in Q2. 4Good was the biggest outperformer, driven by an overweight allocation and positive selection in Tech, partially offset by negative selection in Consumer Discretionary. LowCarb was the only underperformer, driven by negative selection in Consumer Discretionary and Tech, partially offset by positive selection in Financials and Industrials. Choice, PAB and TPI also outperformed. Tracking errors for the five Developed SI indices are relatively similar, ~2%. Valuation premia have been relatively stable, in line to slightly above history, except for PAB, which has the largest premium to the market.

Chart 1: Active Performance (TR, USD %)

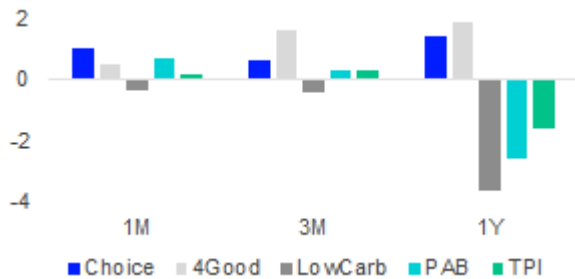


Chart 2: Index tracking error (%)

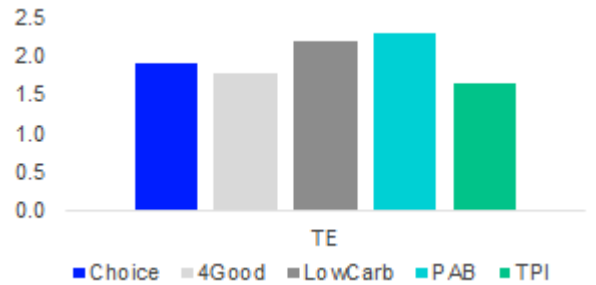


Chart 3: Industry active weight (3M ave %)

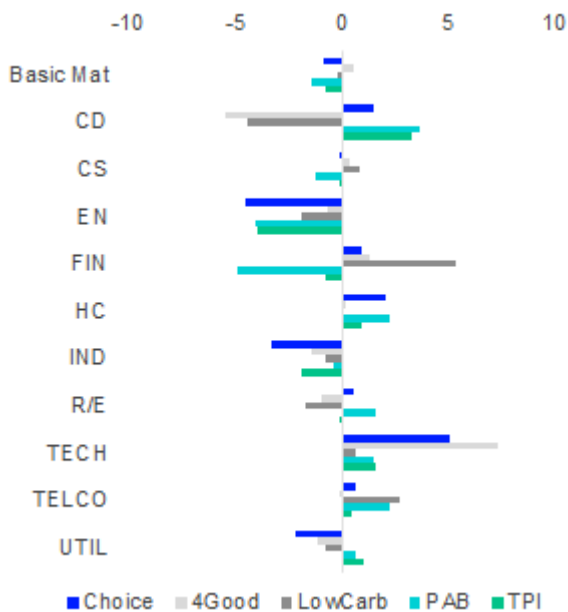


Chart 4: 3M industry allocation effect (%)

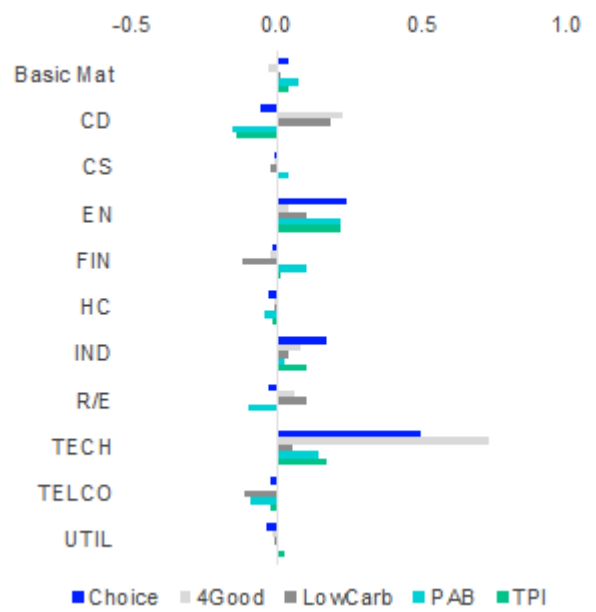
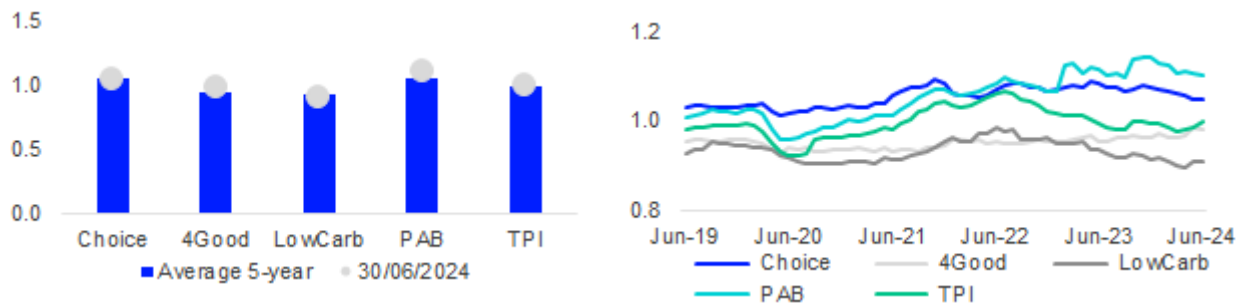


Chart 5: Developed indices Relative Valuation: Latest 12-month Forward P/E relative to 5-year average



Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

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 exclude 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 specific sectors. These indices share rules-based selection methodologies and are market-cap weighted.

The FTSE Russell tilting and target exposure methodologies 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.



Market-Cap Weighted indices*

Equity

[FTSE Global Choice Index Series | LSEG](#) exclude companies based on the impact of their products and conduct on society and the environment.

[FTSE4Good Index Series | LSEG](#) include companies with an ESG and climate-change scores above a minimum threshold, with exclusions.

[Environmental Markets Index Series | LSEG](#) include companies that derive at least 20% of their revenue from green.

Fixed Income

[FTSE Fixed Income Global Choice Index | LSEG](#) designed to represent the performance of securities in FTSE Fixed Income indexes that exclude issuers based on their conduct or product involvement in specific sectors.

[FI Ex Fossil Fuels Enhanced Index | LSEG](#) designed to represent the performance of securities in FTSE Fixed Income indexes after the exclusion of issuers that have certain exposure to fossil fuels.

[FTSE Green Impact Bond Index Series | LSEG](#) comprehensive measure of the global green bond market across various asset classes and credit sectors.

Tilted / Target Exposure indices*

Equity

[FTSE ESG Low Carbon Target Exposure](#) targets a 20% uplift in the ESG score ** and a 50% reduction in carbon emissions, controlling for country and ICB industry exposures.

[EU Climate Benchmarks Index Series | LSEG](#) Paris Aligned Benchmark (PAB) targets a 50% reduction in carbon emissions, 100% uplift in Green Revenues and high climate governance.

[FTSE TPI Climate Transition Index Series | LSEG](#) over/underweights companies based on fossil fuel reserves, carbon emissions, green revenues, TPI management quality and TPI carbon performance.

Alternative

[FTSE EPRA Nareit Green](#) index of eligible real estate equities worldwide, with an improved climate and sustainability performance based on two sustainable investment measures; green building certification and energy usage.

[FTSE Green Infrastructure](#) index of companies from three core infrastructure sectors (transportation, energy and telecommunications) and adjusts stock weights to account for the risks and opportunities associated with the transition to a low-carbon economy

Fixed Income

[Climate Risk Adjusted Gov Bond Index | LSEG](#) quantitatively incorporates climate transition, physical and resilience risk into government bond index.

[FTSE ESG Government Bond Index Series | LSEG](#) adjusts index weights according to each country's relative Environmental, Social and Governance (ESG) performance.

[FTSE Fixed Income EU Climate Benchmarks Index Series | LSEG](#) achieving the required minimum targets as stipulated by the EU 2019 Regulation on EU Climate Transition Benchmarks.

* Please refer to [FTSE | The Right Index for Your Sustainable Investment Objectives \(lseg.com\)](#) 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.

Source: FTSE Russell/LSEG. All data as of June 30, 2024. Past performance is no guarantee of future results. This report should not be considered "research" for the purposes of MIFID II. Please see the end for important legal disclosures. Results in this report are for research / illustrative purposes and do not represent the official performance of the indices.

Appendix 1: SI Index Coverage and Benchmarks

Region	SI FAMILY	FTSE Russell Index	FTSE Russell Benchmark	Regional Coverage		Market Cap Coverage	
				DM	EM	Large + Mid Cap	Large + Mid + Small Cap
Equities							
Global	Global Choice	FTSE Global All Cap Choice	FTSE Global All Cap	✓	✓		✓
	FTSE4Good	FTSE4Good All World	FTSE All World	✓	✓	✓	
	Environmental Ops	FTSE Environmental Opportunities All Share	FTSE Global All Cap	✓	✓		✓
	Paris Aligned	FTSE All-World Paris-Aligned (PAB)	FTSE All World	✓	✓	✓	
	TPI Climate Transition	FTSE All-World TPI Climate Transition ex FF	FTSE All World	✓	✓	✓	
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	FTSE 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 JPY 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		✓	✓	
Developed	Global Choice	FTSE Developed All Cap Choice	FTSE Developed All-Cap	✓			✓
	FTSE4Good	FTSE4Good Developed	FTSE Developed	✓		✓	
	ESG Low Carbon Target	FTSE Developed ESG Low Carbon Target Exposure	FTSE Developed	✓		✓	
	Paris Aligned	FTSE Developed Paris-Aligned (PAB)	FTSE Developed	✓	✓	✓	
	TPI Climate Transition	FTSE Developed TPI Climate Transition ex Coal ex FF ex Tobacco	FTSE Developed	✓		✓	
Alternative							
Global	EPRA Nareit Green	FTSE EPRA Nareit Developed Green Low Carbon Target	FTSE EPRA Nareit Developed	✓			✓
	Green Infrastructure	FTSE Global Core Infrastructure TPI Climate Transition	FTSE Global Core Infrastructure Index + Alternative Electricity ICB	✓	✓		✓
Fixed Income							
Global	SI Sovereign	FTSE Climate Risk Adjusted WGBI	FTSE WGBI	✓	✓		
		FTSE ESG WGBI	FTSE WGBI	✓	✓		
Global	SI Corporate Bond	FTSE WorldBIG Choice Corporate Bond Index	FTSE WorldBIG Corporate	✓	✓		
		FTSE WorldBIG ex Fossil Fuel Enhanced Corporate Bond Index	FTSE WorldBIG Corporate	✓	✓		
		FTSE WorldBIG PAB Corporate Bond Index	FTSE WorldBIG Corporate	✓	✓		
Global	Green Bond	FTSE WorldBIG Green Impact Corporate Bond Index	FTSE WorldBIG Corporate	✓	✓		
		FTSE WorldBIG Green Impact Domestic Sovereign Index	FTSE WorldBIG Domestic Sovereign				

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

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

Appendix 2: Reference Guide

Report calculations

- Unless noted otherwise, all performance calculations are total return in US dollar currency terms (fixed income indices are USD hedged).
- 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 official 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: [ESG Metrics Methodology and Calculation \(lseg.com\)](https://www.lseg.com/en/insights/ftse-esg-metrics-methodology-and-calculation).

Naming convention

FTSE Russell Sustainable indices are abbreviated in the report as follows:

Official Name	Report Abbreviation	Official Name	Report Abbreviation
FTSE Global Choice	Choice	FTSE Climate WGBI	Climate WGBI
FTSE4Good	4Good	FTSE Advanced Climate WGBI	Adv Climate WGBI
FTSE Environmental Opportunities	Env Ops or EO	FTSE ESG WGBI	ESG WGBI
FTSE ESG Low Carbon Target Exposure	Low Carb	FTSE Choice Corporate Bond	Choice Corp
FTSE Paris-Aligned Benchmark	PAB	FTSE Ex Fossil Fuel Enhanced Corporate Bond	FFE Corp
FTSE TPI Climate Transition	TPI	FTSE PAB Corporate Bond	PAB Corp
FTSE EPRA Nareit Developed Green Low Carbon Target	EPRA Nareit Green	FTSE Green Impact Corporate Bond	Green Corp
FTSE Global Core Infrastructure TPI Climate Transition	Green Infra	FTSE Green Impact Domestic Sovereign	Green Sov

Source: FTSE Russell/LSEG. Please see the end for important legal disclosures.

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CONTACT US

To learn more, visit lseg.com/en/ftse-russell; email info@ftserussell.com; or call your regional Client Service team office:

EMEA +44 (0) 20 7866 1810
North America +1 877 503 6437

Asia-Pacific
Hong Kong +852 2164 3333
Tokyo +81 3 6441 1430
Sydney +61 (0) 2 7228 5659

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