

RAFI™ Multi-Factor Climate Transition Index Series Attribution Summary: Q2 2022

Developed

Performance Analysis	QTD Return	QTD Excess Return	YTD Return	1-Year Return	Carbon Intensity (CF/EVIC)
RAFI Multi-Factor Climate Transition Developed Index	-17.34%	3.01%	-17.34%	-10.66%	31.2
RAFI Multi-Factor ex Size Developed	-12.74%	7.61%	-12.74%	-7.23%	99.3
<i>Solactive GBS Dev Markets Large/Mid Cap Index</i>	-20.35%	---	-20.35%	-14.16%	46.1
Factor Attribution (Dynamic Multi-Factor)	QTD Return	QTD Excess Return	YTD Return	1-Year Return	Carbon Intensity (CF/EVIC)
RAFI Value Factor Developed	-8.13%	12.2%	23.9%	-5.60%	235.9
RAFI Low Volatility Factor Developed	-9.69%	10.7%	8.8%	-4.73%	52.1
RAFI Quality Factor Developed	-18.65%	1.7%	10.4%	-13.73%	36.0
RA Momentum Factor Developed	-15.79%	4.6%	8.6%	-8.64%	81.7

The RAFI Multi-Factor Developed Index outperformed the benchmark index by 301 bps in Q2 2022. As economic data continued to worsen, stretched valuations and volatility set the stage for strong performance by the value and low volatility factors. The value factor crushed the cap-weighted index by 1,222 bps in Q2, driven by significant mean reversion in expensive pandemic darlings. From a brief rally at the end of March, markets experienced a rocky ride down with precipitous drops in early May and June. Volatility provided the impetus for the low volatility factor to outperform by 1,066 bps. With value and low volatility trending, these names made their way into the momentum portfolio, which beat the cap-weighted benchmark by 456 bps. Quality rebounded from a poor Q1 outpacing the benchmark by 170 bps.

There was notable dispersion in performance between the carbon-constrained RAFI Climate Transition Index and a comparable unconstrained strategy. The mechanism for this dispersion is most likely the strong performance of the value factor, which is more than 5x as carbon intensive as the cap-weighted benchmark. As we noted in our April 2022 webinar, valuations were historically stretched at year-end and we've seen robust mean reversion year-to-date. The omission of value stocks likely had knock-on effects in the momentum factor portfolio as value names trended and qualified for the momentum sleeve.

Top/Bottom Contributors and Sector/Region Attribution

The following table provides information on the top five/bottom five contributors to excess return. At a high level, strategy continues to benefit from its contrarian positioning during a period of collapsing valuations and strong mean reversion. Amazon (-2.09% active weight) and Tesla (-1.29% active weight) were the two largest contributors to the portfolio through their outright omission adding 47 bps and 33 bps, respectively. Apple was the fourth largest contributor with a -3.22% underweight, contributing 21 bps. The strategy maintained exposure

to Apple through the quality and momentum sleeves. IBM, entering through the value and quality sleeves, added 25 bps to performance. Part of the low volatility and momentum sleeves, Pfizer added 20 bps to excess return on a 1.15% overweight. Some of the differential between the carbon-constrained and unconstrained indices can be explained by the list of top detractors. Exxon had a relatively strong quarter, up 4.75%, while the markets were down 16%, but was omitted due to high carbon intensity. In contrast, Tokyo Electron and Nvidia are securities the strategy leaned into during the application of the carbon constraint. With semis undergoing a small bust, both firms suffered significant drawdowns, costing the strategy 9 bps each.

Top Five/Bottom Five Contributors to Excess Return

	Total Weight	Active Weight	Q2 2022 Return	Excess Return Contribution	Value	Initial Factor Sleeve Weights		
						Low Volatility	Quality	Momentum
Top Five Contributors to Return								
Amazon	0.00%	-2.09%	-34.84%	0.47%	—	—	—	—
Tesla	0.00%	-1.29%	-37.51%	0.33%	—	—	—	—
IBM	1.32%	1.09%	9.92%	0.25%	0.59%	—	0.72%	—
Apple	1.49%	-3.22%	-21.59%	0.21%	—	—	1.08%	0.41%
Pfizer	1.69%	1.15%	2.08%	0.20%	—	1.06%	—	0.62%
Bottom Five Contributors to Return								
Exxon	0.00%	-0.72%	4.75%	-0.13%	0.96%	—	—	0.39%
Target	0.80%	0.63%	-33.17%	-0.11%	0.39%	0.32%	0.44%	0.08%
United Health	0.33%	-0.56%	1.08%	-0.09%	—	—	—	0.48%
Tokyo Electron	0.48%	0.36%	-37.43%	-0.09%	—	—	0.18%	0.13%
Nvidia	1.09%	0.14%	-44.43%	-0.09%	—	—	0.06%	0.47%

Note: RAFI Multi-Factor Climate Transition Index dynamically tilts securities weights as a function of carbon intensity. Sleeve weights may not perfectly map to the final portfolio weight.

The strategy looks remarkably strong across multiple sectors. While there was pressure from stretched valuations and drawdowns of American “top dog” stocks, performance was roughly split between allocation effect (152 bps) and selection effect (196 bps). With a 2.80% active weight, Healthcare was the strongest contributor to the portfolio, adding 87 bps to performance. Technology (–6.45% active weight) and Communications (–0.38% active weight) continued to generate strong excess returns for the strategy, adding 86 bps and 75 bps, respectively. In a reversal from the past quarter, Consumer Cyclical was a strong contributor adding 76 bps and featuring two of the largest contributors to performance through their omission. A similar story played out in communications, with both Netflix and Meta Platforms down –53.32% and –27.48%, respectively, and consequently adding 11 bps and 10 bps, respectively, through their omission from the strategy. Both Netflix and Meta saw incredible valuations take a plunge as their fantastically strong growth stuttered. Healthcare was a slightly different story as the strategy staked out active positions in Pfizer (1.14% active weight) and Merck (0.73% active weight), adding 20 bps and 18 bps, respectively, to excess return.

3/31/2022 to 6/30/2022	RAFI Multi-Factor Climate Transition Developed Index		Solactive GBS Developed Markets Large & Mid Cap Index		Attribution Analysis		
	Port. Average Weight	Port. Total Return	Bench. Average Weight	Bench. Total Return	Allocation Effect	Selection + Interaction	Total Effect
Total	100.00	-12.51	100.00	-15.99	1.52	1.96	3.48
Basic Materials	3.32	-19.31	4.78	-19.69	0.05	0.02	0.06
Communications	7.54	-9.50	7.92	-19.26	0.02	0.73	0.75
<i>Netflix, Inc.</i>	--	--	0.18	-53.32	0.11	--	0.11
<i>Meta Platforms</i>	--	--	0.85	-27.48	0.10	--	0.10
Consumer Cyclical	9.12	-17.43	10.26	-24.05	0.12	0.64	0.76
<i>Amazon.com</i>	--	--	2.09	-34.84	0.47	--	0.47
<i>Tesla Inc</i>	--	--	1.29	-37.51	0.33	--	0.33
Consumer Non-Cyclical	15.38	-8.41	8.17	-6.89	0.65	-0.23	0.42
Energy	5.85	-8.98	4.98	-4.55	0.10	-0.23	-0.13
Financials	14.63	-15.43	13.65	-16.14	0.02	0.13	0.15
Healthcare	16.22	-2.83	13.42	-6.74	0.31	0.56	0.87
<i>Pfizer Inc.</i>	1.69	2.08	0.55	2.08	0.20	--	0.20
<i>Merck & Co.</i>	1.15	12.02	0.42	12.02	0.18	--	0.18
Industrial	9.46	-16.85	9.57	-16.28	-0.00	-0.05	-0.06
Real Estate	2.22	-16.86	2.67	-14.84	-0.01	-0.05	-0.05
Technology	15.04	-18.71	21.49	-21.76	0.40	0.46	0.86
<i>IBM</i>	1.32	9.92	0.23	9.92	0.25	--	0.25
<i>Apple</i>	1.49	-21.59	4.71	-21.59	0.21	--	0.21
Utilities	1.23	-7.70	3.09	-7.03	-0.14	-0.01	-0.16

Mean reversion among expensive American mega-cap names explains the vast majority of performance by region (278 bps of the total 348 bps of excess performance.) Despite a notable -5.59% underweight to the United States, selection effect rather than allocation effect explained the bulk of performance, accounting for 274 bps of the total 278 bps in excess performance attributed to the American segment. Underweights to expensive American top dog stocks, such as Amazon and Tesla, drove the bulk of performance, although the strategy did benefit from some overweight positions such as IBM. Performance was relatively diffuse across the rest of the world. A possible sign of contrarian stock selection, selection effect explained 332 bps of the total 348 bps in excess return.

3/31/2022 to 6/30/2022	RAFI Multi-Factor Climate Transition Developed Index		Solactive GBS Developed Markets Large & Mid Cap Index		Attribution Analysis		
	Port. Average Weight	Port. Total Return	Bench. Average Weight	Bench. Total Return	Allocation Effect	Selection + Interaction	Total Effect
Total	100.00	-12.51	100.00	-15.99	0.17	3.32	3.48
Developed Asia Pacific x JP	2.63	-11.53	3.89	-14.50	-0.02	0.08	0.06
Europe - Non-EU	6.95	-12.86	4.71	-15.67	0.02	0.20	0.21
European Union	10.88	-13.95	9.12	-15.67	0.00	0.19	0.19
Japan	9.29	-14.91	6.73	-14.25	0.05	-0.06	-0.01
United Kingdom	5.80	-8.98	4.48	-10.64	0.07	0.09	0.16
United States	60.95	-12.16	66.54	-16.69	0.03	2.74	2.78
<i>Amazon.com</i>	--	--	2.09	-34.84	0.47	--	0.47
<i>Tesla</i>	--	--	1.29	-37.51	0.33	--	0.33
<i>IBM</i>	1.32	9.92	0.23	9.92	0.25	--	0.25
Other Developed	3.49	-13.47	4.16	-15.58	-0.00	0.07	0.07
Other	--	--	0.21	-12.39	-0.01	--	-0.01
[Unassigned]	0.00	--	0.14	-31.20	0.02	0.00	0.02

The following table lists the top five largest stocks by cap-weight that failed to make it into the index at the 6/18/2022 rebalance due to their factor scores. Cumulative-weight rank represents each stock's position by weight within each factor sleeve prior to selection; value, low volatility, and quality select the top 25% of stocks by RAFI weight, and momentum selects the top 50% of stocks by market capitalization. Exxon Mobil notably qualifies for our standard RAFI Multi-factor strategy, but is excluded from the CTI index due to its carbon intensity.

Company	Region	Cap-Weight (6/30/2022)	Cumulative Weight Rank			
			Value	Low Volatility	Quality	Momentum
Alphabet	US	2.57%	90.6%	50.4%	52.7%	71.4%
Amazon	US	1.93%	96.8%	45.4%	96.8%	94.1%
Tesla Inc	US	1.18%	100.0%	87.1%	98.8%	54.2%
Meta Platforms Inc. Class A	US	0.76%	71.8%	54.6%	60.9%	97.8%
Exxon Mobil	US	0.75%	16.4%	80.5%	48.2%	3.7%

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