

# **RAFI™ Multi-Factor Index Series Attribution Summary: 2023**

# Developed

Performance Analysis	QTD Return	QTD Excess Return	YTD Return	1-Year Return
RAFI Multi-Factor Developed Index	9.93%	-1.54%	15.18%	15.18%
<i>Solactive GBS Dev Markets Large/Mid Cap Index</i>	<i>11.48%</i>	<i>---</i>	<i>24.55%</i>	<i>24.55%</i>
Factor Attribution	QTD Return	YTD Return	9/30/2023 Allocation	12/31/2023 Allocation
RAFI Value Factor Developed	7.03%	16.49%	20.0%	20.00%
RAFI Low Volatility Factor Developed	6.80%	7.00%	20.0%	20.00%
RAFI Quality Factor Developed	11.33%	18.21%	20.0%	20.00%
RA Momentum Factor Developed	12.00%	16.43%	20.0%	20.00%
RAFI Size Factor Developed	12.22%	17.98%	20.0%	20.00%

The RAFI Multi-Factor Developed Index lagged the cap-weight reference benchmark by 9.4% in 2023. Markets surprised to the upside with strong performance across the board with developed markets, and US Technology in particular, leading. Global equity markets faced a variety of headwinds entering 2023 from continued energy uncertainty, generationally large post-covid inflationary shocks and deglobalization. China’s reopening was anticipated to be a small fillip in the face of this uncertainty. What played out was the inverse of those fears. Energy went from the leading sector of 2022 to a laggard, diminished by subdued global demand and a remarkable renaissance in shale. Inflation steadily eased lower globally. And China’s reopening boom failed to show up, while the rest of the emerging markets performed strongly.

Arguably the most significant surprise of 2023 took place in November 2022 with the announcement of ChatGPT. Mega-cap technology firm valuations collapsed in 2022 as the ‘switch to the digital economy’ sputtered out. The incipient AI revolution (and reigning in covid-era hiring excesses) offered a fresh growth story that propelled these firms. The Magnificent 7 (Apple, Microsoft, Alphabet, Amazon, Nvidia, Meta, Tesla) started the year with a raucous January and kept on rolling, accounting for 85% of the S&P 500’s returns through September, ending the year as 28.1% by weight of the S&P 500. As tighter conditions weighed on Main street, Silicon Valley’s kings seemed to be an oasis of growth. Only near the tail end of the year, did we see broader breakout with prospects of a soft-landing in the US, a revitalized Japanese equity market and vibrant emerging markets (excluding China’s geopolitical risk.)

The violent return back to the concentrated growth markets of COVID created a difficult environment for diversified factor sleeves (or any strategy that leaned out of the Magnificent 7) in 2023. Low Volatility, in particular, struggled in 2023 with the factor sleeve trailing the

market-cap benchmark by 1755 bps. The low volatility strategy naturally leans into consumer non-cyclicals, which impacted performance as consumers processed inflated staples and tighter labor markets. Value lagged by 806 bps as recession fears weighed on the broader market in favor of the AI growth story (the MSCI World Value Index trailed the MSCI World Growth Index by 2490 bps.) The momentum factor struggled both due to the narrowness of the advance as well as momentum crash in January as the formerly high momentum ‘value’ stocks turned over (the momentum factor sleeve experienced its worst quarter of the year in Q1, trailing the index by 516 bps.) Despite positive performance in Q4, the momentum sleeve fell behind the index by 812 bps over the year. Size and Quality sleeves muddled through despite the broader preference for speculative large-cap growth. Size lagged the market-cap index by 657 bps over the year. Quality trailed the index by 634 bps.

## Stock Analysis

### Top Five/Bottom Five Contributors to Excess Return

	Total Weight	Active Weight	2023 Return	Excess Return Contribution	Contribution to Overall Index Weight			
					Value	Low Volatility	Quality	Momentum
<b>Top Five Contributors to Return</b>								
NextEra Energy	0.02%	-0.24%	-25.30%	0.15%	—	—	—	0.02%
United Health Group	0.15%	-0.72%	0.79%	0.14%	—	—	—	0.15%
Bank of America	0.00%	-0.39%	4.82%	0.09%	—	—	—	—
Thermo Fisher Scientific	0.04%	-0.35%	-3.36%	0.09%	—	—	—	0.04%
Abbott Laboratories	0.00%	-0.34%	2.26%	0.08%	—	—	—	—
<b>Bottom Five Contributors to Return</b>								
Nvidia	0.39%	-1.21%	239.02%	-1.46%	—	—	—	0.39%
Microsoft	0.00%	-4.30%	58.19%	-1.19%	—	—	—	—
Apple	0.92%	-3.98%	49.00%	-0.95%	—	—	0.58%	0.29%
Amazon	0.02%	-2.01%	80.88%	-0.87%	—	—	—	0.02%
Alphabet	0.00%	-2.48%	58.56%	-0.69%	—	—	—	—

Note: Size excluded from the table since the above listed securities are not eligible for the RAFI Size Factor Developed Index.

Underlining the narrowness of the market and the impact of a select few names, the Magnificent 7 were the 7 largest detractors from performance in 2023. The average return across the group was 111% with Nvidia, Meta and Tesla all earnings greater than 100% returns. Nvidia was the standout performer across global equity markets posting a 239% return for 2023. Nvidia creates the pick and shovels that power the AI revolution through their GPUs and specialized AI code libraries. We dive deeper into Nvidia’ positioning and the AI revolution writ large in our piece, [The Nvidia/AI Singularity: Breakthrough, Bubble or Both](#). Nvidia was the largest detractor removing 146 bps from performance on a -1.21% underweight. The strategy picked up offsetting exposure through the momentum factor sleeve.

## Sector Analysis

12/30/2022 to 12/29/2023	RAFI Multi-Factor 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
<b>Total</b>	<b>100.00</b>	<b>15.01</b>	<b>100.00</b>	<b>24.56</b>	<b>-5.48</b>	<b>-4.08</b>	<b>-9.55</b>
<b>Basic Materials</b>	6.47	18.86	4.42	16.61	-0.15	0.13	-0.02
<b>Communications</b>	5.88	16.08	7.51	45.85	-0.30	-1.60	-1.90
<b>Consumer Cyclical</b>	11.49	23.61	10.48	37.19	0.07	-1.37	-1.30
<b>Consumer Non-Cyclical</b>	13.62	3.29	7.86	3.54	-1.25	-0.06	-1.31
<b>Energy</b>	6.79	6.94	4.96	2.87	-0.57	0.28	-0.29
<b>Financials</b>	11.96	18.74	13.38	18.29	0.19	0.07	0.26
<b>Healthcare</b>	13.50	4.05	13.10	4.65	-0.12	-0.11	-0.23
<b>Industrial</b>	13.38	21.42	10.05	21.45	-0.10	0.00	-0.10
<b>Real Estate</b>	2.21	8.32	2.26	11.18	-0.01	-0.07	-0.08
<b>Technology</b>	11.62	33.00	23.20	54.40	-3.16	-1.73	-4.88
<b>Utilities</b>	3.08	12.07	2.79	0.79	-0.07	0.38	0.31

Decomposing performance by sector, Technology, Communications and Consumer Cyclical were intuitively among the largest detractors from performance this year, removing 488 bps, 190 bps and 130 bps, respectively from performance. Performance within these sectors was largely driven by their corresponding Magnificent 7 member. Technology was arguably the exception with allocation effects from a -11.6% underweight accounting for 316 bps of the total 488 bps drag on performance. Nvidia (-1.2% underweight), Microsoft (-4.3% underweight) and Apple (-4.0% underweight) were the largest detractors within the segment removing 146 bps, 119 bps, and 95 bps, respectively. Microsoft thrived this year as the major backer of OpenAI, the inventors of Chat GPT. Apple continued its impressive march though geopolitical risk has begun to weigh in on the company.

Within Communications and Cyclical, selection effects from underweights to Magnificent 7 names explained performance. Within Communications, another AI competitor, Alphabet, detracted 69 bps from performance as its AI offering found its legs after a rocky introduction. Meta's differentiated open-source approach to AI and llama AI models combined with dramatic cost cutting lead to a remarkable revitalization. Meta is up 194% this year after a nearly 60% drop in 2022. The strategy took on offsetting exposure, only underweight Meta on average 0.5% over the year, detracting 67 bps, from performance. Within Consumer Cyclical, Amazon detracted 87 bps on a -2.0% underweight. Amazon's impressive cloud portfolio continues to make it an important competitor to Microsoft and Google's cloud offerings. Tesla enjoyed another volatile year, bouncing back into favor and detracting 51 bps from performance on a 1.1% underweight.

Notably, Consumer Non-Cyclicals was the third largest detractor performance. Consumer Non-Cyclicals lagged the broader index returning only 3.5% compared with the broader index, which was up 24.6%. The strategy took a 5.8% overweight to non-cyclicals driven in large part by the low-volatility sleeve, which detracted 131 bps from performance. Within the segment performance was fairly diffuse across firms with Walgreens (0.3% overweight) and Archer Daniels (0.2% overweight) the two largest detractors, removing 16 bps and 13 bps, respectively.

## Geographic Analysis

12/30/2022 to 12/29/2023	RAFI Multi-Factor 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
<b>Total</b>	<b>100.00</b>	<b>15.01</b>	<b>100.00</b>	<b>24.56</b>	<b>-0.80</b>	<b>-8.75</b>	<b>-9.55</b>
<b>Developed Asia Pacific x JP</b>	<b>3.75</b>	<b>7.55</b>	<b>3.55</b>	<b>6.62</b>	<b>-0.03</b>	<b>0.04</b>	<b>0.01</b>
<b>Europe - Non-EU</b>	<b>5.59</b>	<b>20.44</b>	<b>4.67</b>	<b>20.27</b>	<b>-0.04</b>	<b>-0.01</b>	<b>-0.04</b>
<b>European Union</b>	<b>13.21</b>	<b>22.87</b>	<b>9.58</b>	<b>24.29</b>	<b>0.01</b>	<b>-0.21</b>	<b>-0.21</b>
<b>Japan</b>	<b>11.40</b>	<b>19.24</b>	<b>6.97</b>	<b>20.37</b>	<b>-0.18</b>	<b>-0.14</b>	<b>-0.32</b>
<b>United Kingdom</b>	<b>6.48</b>	<b>14.21</b>	<b>4.24</b>	<b>13.86</b>	<b>-0.23</b>	<b>0.01</b>	<b>-0.22</b>
<b>United States</b>	<b>55.93</b>	<b>12.34</b>	<b>66.80</b>	<b>27.64</b>	<b>-0.34</b>	<b>-8.39</b>	<b>-8.73</b>
<b>Other Developed</b>	<b>3.64</b>	<b>14.18</b>	<b>3.79</b>	<b>15.53</b>	<b>0.02</b>	<b>-0.05</b>	<b>-0.03</b>
<b>Other</b>	<b>--</b>	<b>--</b>	<b>0.19</b>	<b>8.84</b>	<b>0.03</b>	<b>--</b>	<b>0.03</b>

At the regional level, positioning relative to American technology was the most significant decision the portfolio made. The United States was the largest detractor to the portfolio removing 873 bps from excess returns. While the strategy took on average a -10.9% underweight to relatively pricey American capital markets, security selection rather than allocation effects accounted for the bulk of performance (-839 bps in selection effects.) All other regions lagged the US-led market-cap benchmark though the EU and Japan enjoyed notably strong years up 24.3% and 20.4%, respectively.

## Rebalance Analysis

The following table lists the top five largest stocks by cap-weight that failed to make it into the index at the 12/15/2023 rebalance due to their factor scores. Cumulative-weight rank represents a 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.

Company	Region	Cap-Weight (12/31/2023)	Cumulative Weight Rank			
			Value	Low Volatility	Quality	Momentum
Microsoft	US	4.72%	97.7%	63.7%	28.5%	50.2%
Alphabet	US	2.67%	83.8%	50.0%	32.7%	54.3%
Tesla, Inc.	US	1.17%	99.8%	96.5%	86.9%	56.3%
UnitedHealth	US	0.84%	76.2%	30.6%	43.0%	72.5%
Bank of America	US	0.40%	26.6%	89.4%	84.8%	80.4%

## United States

Performance Analysis	QTD	QTD Excess	YTD	1-Year
	Return	Return	Return	Return
RAFI Multi-Factor US Index	10.11%	-1.83%	12.70%	12.70%
RAFI Dynamic Multi-Factor US Index	10.52%	-1.42%	12.51%	12.51%
Solactive GBS United States Large/Mid Cap Index	11.94%	---	27.73%	27.73%

  

Factor Attribution	QTD	YTD Return	9/30/2023	12/31/2023
	Return		Allocation	Allocation
RAFI Value Factor US	8.43%	11.30%	20.0%	20.00%
RAFI Low Volatility Factor US	6.05%	1.58%	20.0%	20.00%
RAFI Quality Factor US	10.75%	16.38%	20.0%	20.00%
RA Momentum Factor US	12.38%	14.78%	20.0%	20.00%
RAFI Size Factor US	12.60%	18.46%	20.0%	20.00%

### Top Five/Bottom Five Contributors to Excess Return

	Total Weight	Active Weight	2023 Return	Excess Return Contribution	Contribution to Overall Index Weight			
					Value	Low Volatility	Quality	Momentum
<b>Top Five Contributors to Return</b>								
NextEra Energy	0.04%	-0.35%	-25.30%	0.22%	—	—	—	0.04%
United Health Group	0.28%	-1.01%	0.79%	0.21%	—	—	—	0.28%
Bank of America	0.00%	-0.58%	4.82%	0.16%	—	—	—	—
Abbott Laboratories	0.00%	-0.50%	2.26%	0.14%	—	—	—	—
Thermo Fisher Scientific	0.07%	-0.50%	-3.36%	0.14%	—	—	—	0.07%
<b>Bottom Five Contributors to Return</b>								
Nvidia	0.70%	-1.67%	239.02%	-2.12%	—	—	—	0.70%
Microsoft	0.00%	-6.35%	58.19%	-1.58%	—	—	—	—
Apple	1.66%	-5.59%	49.00%	-1.24%	—	—	1.06%	0.55%
Amazon	0.03%	-2.96%	80.88%	-1.20%	—	—	—	0.03%
Alphabet	0.00%	-3.66%	58.56%	-0.92%	—	—	—	—

Note: Size excluded from the table since the above listed securities are not eligible for the RAFI Size Factor Developed Index.

### Sector Attribution

12/30/2022 to 12/29/2023	RAFI Multi-Factor US Index		Solactive GBS United States Large & Mid Cap Index		Attribution Analysis		
	Port. Average Weight	Port. Total Return	Bench. Average Weight	Bench. Total Return	Allocation Effect	Selection + Interaction	Total Effect
<b>Total</b>	<b>100.00</b>	<b>12.54</b>	<b>100.00</b>	<b>27.75</b>	<b>-8.58</b>	<b>-6.63</b>	<b>-15.21</b>
<b>Basic Materials</b>	<b>3.96</b>	<b>18.18</b>	<b>2.37</b>	<b>13.37</b>	<b>-0.24</b>	<b>0.17</b>	<b>-0.06</b>
<b>Communications</b>	<b>5.48</b>	<b>18.26</b>	<b>8.91</b>	<b>57.84</b>	<b>-0.96</b>	<b>-1.64</b>	<b>-2.60</b>
<b>Consumer Cyclical</b>	<b>11.02</b>	<b>21.91</b>	<b>10.71</b>	<b>44.04</b>	<b>0.02</b>	<b>-2.12</b>	<b>-2.09</b>
<b>Consumer Non-Cyclical</b>	<b>14.42</b>	<b>-0.52</b>	<b>6.66</b>	<b>0.74</b>	<b>-2.22</b>	<b>-0.24</b>	<b>-2.45</b>
<b>Energy</b>	<b>7.75</b>	<b>4.27</b>	<b>4.49</b>	<b>-2.12</b>	<b>-1.11</b>	<b>0.53</b>	<b>-0.58</b>
<b>Financials</b>	<b>10.65</b>	<b>15.83</b>	<b>10.34</b>	<b>16.66</b>	<b>0.13</b>	<b>-0.08</b>	<b>0.04</b>
<b>Healthcare</b>	<b>16.45</b>	<b>1.29</b>	<b>13.72</b>	<b>2.59</b>	<b>-0.76</b>	<b>-0.29</b>	<b>-1.05</b>
<b>Industrial</b>	<b>10.78</b>	<b>18.92</b>	<b>7.83</b>	<b>17.73</b>	<b>-0.26</b>	<b>0.13</b>	<b>-0.13</b>
<b>Real Estate</b>	<b>1.99</b>	<b>12.08</b>	<b>2.34</b>	<b>12.52</b>	<b>0.02</b>	<b>-0.01</b>	<b>0.02</b>
<b>Technology</b>	<b>16.22</b>	<b>30.56</b>	<b>30.05</b>	<b>57.11</b>	<b>-3.69</b>	<b>-3.12</b>	<b>-6.81</b>
<b>Utilities</b>	<b>1.29</b>	<b>-2.60</b>	<b>2.57</b>	<b>-7.20</b>	<b>0.48</b>	<b>0.03</b>	<b>0.51</b>

**Top 5 excluded names by Market Cap**

Company	Region	Cap-Weight (12/31/2023)	Cumulative Weight Rank			
			Value	Low Volatility	Quality	Momentum
Microsoft	US	6.88%	97.7%	63.7%	28.5%	50.2%
Alphabet	US	3.89%	83.8%	50.0%	32.7%	54.3%
Tesla, Inc.	US	1.70%	99.8%	96.5%	86.9%	56.3%
UnitedHealth	US	1.22%	76.2%	30.6%	43.0%	72.5%
Bank of America	US	0.58%	26.6%	89.4%	84.8%	80.4%



# Global

Performance Analysis	QTD	QTD Excess	YTD	1-Year
	Return	Return	Return	Return
RAFI Multi-Factor Global Index	9.82%	-1.26%	15.61%	15.61%
Solactive GBS Global Large/Mid Cap Index	11.08%	---	23.05%	23.05%
Factor Attribution	QTD	YTD Return	9/30/2023	12/31/2023
	Return		Allocation	Allocation
RAFI Value Factor Global	7.35%	17.56%	20.0%	20.00%
RAFI Low Volatility Factor Global	6.83%	8.10%	20.0%	20.00%
RAFI Quality Factor Global	11.04%	18.03%	20.0%	20.00%
RA Momentum Factor Global	11.79%	16.31%	20.0%	20.00%
RAFI Size Factor Developed	12.22%	17.98%	20.0%	20.00%

## Top Five/Bottom Five Contributors to Excess Return

	Total Weight	Active Weight	2023 Return	Excess Return Contribution	Contribution to Overall Index Weight			
					Value	Low Volatility	Quality	Momentum
<b>Top Five Contributors to Return</b>								
Petroleo Brasileiro	0.28%	0.19%	101.05%	0.21%	0.09%	—	0.12%	0.05%
NextEra Energy	0.02%	-0.21%	-25.30%	0.13%	—	—	—	0.02%
United Health Group	0.13%	-0.64%	0.79%	0.10%	—	—	—	0.13%
Tencent	0.06%	-0.38%	-6.89%	0.10%	—	—	0.05%	0.01%
Meituan	0.04%	-0.09%	-53.14%	0.09%	—	—	—	0.04%
<b>Bottom Five Contributors to Return</b>								
Nvidia	0.34%	-1.08%	239.02%	-1.27%	—	—	—	0.34%
Microsoft	0.00%	-3.81%	58.19%	-1.10%	—	—	—	—
Apple	0.80%	-3.53%	49.00%	-0.87%	—	—	0.48%	0.32%
Amazon	0.02%	-1.78%	80.88%	-0.78%	—	—	—	0.02%
Alphabet	0.00%	-2.19%	58.56%	-0.63%	—	—	—	—

Note: Size excluded from the table since the above listed securities are not eligible for the RAFI Size Factor Developed Index.

## Sector Attribution

12/30/2022 to 12/29/2023	RAFI Multi-Factor Global Index		Solactive GBS Global 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
<b>Total</b>	<b>100.00</b>	<b>15.33</b>	<b>100.00</b>	<b>23.06</b>	<b>-4.92</b>	<b>-2.81</b>	<b>-7.73</b>
<b>Basic Materials</b>	<b>7.57</b>	<b>16.79</b>	<b>5.01</b>	<b>14.11</b>	<b>-0.23</b>	<b>0.18</b>	<b>-0.05</b>
<b>Communications</b>	<b>6.10</b>	<b>13.65</b>	<b>7.90</b>	<b>35.81</b>	<b>-0.22</b>	<b>-1.28</b>	<b>-1.50</b>
<b>Consumer Cyclical</b>	<b>11.14</b>	<b>23.80</b>	<b>10.61</b>	<b>32.64</b>	<b>0.03</b>	<b>-0.90</b>	<b>-0.87</b>
<b>Consumer Non-Cyclical</b>	<b>13.00</b>	<b>3.71</b>	<b>7.66</b>	<b>3.76</b>	<b>-1.07</b>	<b>-0.03</b>	<b>-1.10</b>
<b>Energy</b>	<b>6.99</b>	<b>12.47</b>	<b>5.05</b>	<b>5.59</b>	<b>-0.46</b>	<b>0.50</b>	<b>0.04</b>
<b>Financials</b>	<b>12.91</b>	<b>17.99</b>	<b>14.35</b>	<b>17.30</b>	<b>0.14</b>	<b>0.11</b>	<b>0.25</b>
<b>Healthcare</b>	<b>12.12</b>	<b>4.00</b>	<b>12.10</b>	<b>4.43</b>	<b>-0.04</b>	<b>-0.07</b>	<b>-0.11</b>
<b>Industrial</b>	<b>12.56</b>	<b>20.11</b>	<b>9.55</b>	<b>20.73</b>	<b>-0.07</b>	<b>-0.07</b>	<b>-0.14</b>
<b>Real Estate</b>	<b>2.19</b>	<b>2.12</b>	<b>2.20</b>	<b>9.48</b>	<b>-0.02</b>	<b>-0.17</b>	<b>-0.19</b>
<b>Technology</b>	<b>12.17</b>	<b>34.52</b>	<b>22.77</b>	<b>52.65</b>	<b>-2.87</b>	<b>-1.50</b>	<b>-4.37</b>
<b>Utilities</b>	<b>3.24</b>	<b>13.47</b>	<b>2.80</b>	<b>1.52</b>	<b>-0.11</b>	<b>0.42</b>	<b>0.32</b>

## Country Attribution

12/30/2022 to 12/29/2023	RAFI Multi-Factor Global Index		Solactive GBS Global 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
<b>Total</b>	<b>100.00</b>	<b>15.33</b>	<b>100.00</b>	<b>23.06</b>	<b>-0.89</b>	<b>-6.84</b>	<b>-7.73</b>
<b>Developed Asia Pacific</b>	<b>13.34</b>	<b>16.22</b>	<b>9.36</b>	<b>15.30</b>	<b>-0.29</b>	<b>0.12</b>	<b>-0.17</b>
<b>Developed Europe</b>	<b>22.17</b>	<b>20.08</b>	<b>16.39</b>	<b>20.77</b>	<b>-0.11</b>	<b>-0.20</b>	<b>-0.31</b>
<b>Other Developed</b>	<b>3.19</b>	<b>14.24</b>	<b>3.36</b>	<b>15.53</b>	<b>0.02</b>	<b>-0.04</b>	<b>-0.02</b>
<b>United States</b>	<b>48.94</b>	<b>12.46</b>	<b>59.20</b>	<b>27.64</b>	<b>-0.46</b>	<b>-7.22</b>	<b>-7.68</b>
<b>Emerging Americas</b>	<b>1.50</b>	<b>49.92</b>	<b>1.02</b>	<b>34.33</b>	<b>0.04</b>	<b>0.20</b>	<b>0.24</b>
<b>Emerging Asia</b>	<b>9.49</b>	<b>14.33</b>	<b>8.91</b>	<b>10.29</b>	<b>-0.08</b>	<b>0.37</b>	<b>0.29</b>
<b>Emerging EMEA</b>	<b>1.38</b>	<b>3.82</b>	<b>1.59</b>	<b>8.64</b>	<b>0.02</b>	<b>-0.07</b>	<b>-0.05</b>
<b>[Unassigned]</b>	<b>--</b>	<b>--</b>	<b>0.18</b>	<b>49.26</b>	<b>-0.04</b>	<b>--</b>	<b>-0.04</b>

## Top 5 excluded names by Market Cap

Company	Region	Cap-Weight (12/31/2023)	Cumulative Weight Rank			
			Value	Low Volatility	Quality	Momentum
Microsoft	US	4.19%	97.74%	63.74%	28.51%	50.17%
Alphabet	US	2.37%	83.77%	49.98%	32.69%	54.29%
Tesla, Inc.	US	1.04%	99.76%	96.51%	86.90%	56.35%
UnitedHealth	US	0.74%	76.20%	30.58%	43.05%	72.53%
Bank of America	US	0.35%	26.64%	89.40%	84.82%	80.38%

# Emerging Markets

Performance Analysis	QTD Return	QTD Excess Return	YTD Return	1-Year Return
RAFI Multi-Factor Emerging Markets Index	9.28%	1.28%	16.63%	16.63%
RAFI Dynamic Multi-Factor Emerging Markets Index	8.98%	0.98%	16.17%	16.17%
<i>Solactive GBS EM Large/Mid Cap Index</i>	<i>8.00%</i>	<i>---</i>	<i>12.04%</i>	<i>12.04%</i>
Factor Attribution	QTD Return	YTD Return	9/30/2023 Allocation	12/31/2023 Allocation
RAFI Value Factor Emerging Markets	9.04%	21.36%	20.0%	20.00%
RAFI Low Volatility Factor Emerging Markets	6.69%	14.06%	20.0%	20.00%
RAFI Quality Factor Emerging Markets	9.10%	15.91%	20.0%	20.00%
RA Momentum Factor Emerging Markets	10.66%	15.86%	20.0%	20.00%

## Top Five/Bottom Five Contributors to Excess Return

	Total Weight	Active Weight	2023 Return	Excess Return Contribution	Contribution to Overall Index Weight			
					Value	Low Volatility	Quality	Momentum
<b>Top Five Contributors to Return</b>								
Alibaba	0.33%	-2.08%	-10.23%	0.38%	—	—	—	0.33%
Meituan	0.00%	-0.87%	-28.32%	0.35%	—	—	—	—
Tencent	0.86%	-2.63%	-3.83%	0.31%	—	—	0.44%	0.42%
Asustek	0.90%	0.78%	40.29%	0.23%	0.39%	0.37%	—	0.09%
MediaTek	1.23%	0.62%	45.25%	0.19%	—	—	0.71%	0.52%
<b>Bottom Five Contributors to Return</b>								
TSMC	1.06%	-5.04%	19.87%	-0.56%	—	—	—	1.06%
Samsung Electronics	1.09%	-3.21%	20.76%	-0.40%	—	—	—	1.09%
PDD	0.64%	-0.46%	49.19%	-0.14%	—	—	—	0.64%
Quanta Computer	1.22%	0.99%	-1.41%	-0.12%	—	0.53%	0.45%	0.25%
PetroChina	0.71%	0.48%	-11.97%	-0.12%	0.32%	—	—	0.38%

## Sector Attribution

12/30/2022 to 12/29/2023	RAFI Multi-Factor Emerging Markets Index		Solactive GBS EM Large & Mid Cap Index		Attribution Analysis		
	Port. Average Weight	Port. Total Return	Bench. Average Weight	Bench. Total Return	Allocation Effect	Selection + Interaction	Total Effect
<b>Total</b>	<b>100.00</b>	<b>16.98</b>	<b>100.00</b>	<b>12.01</b>	<b>-0.31</b>	<b>5.28</b>	<b>4.97</b>
<b>Basic Materials</b>	<b>15.35</b>	<b>9.77</b>	<b>9.55</b>	<b>5.59</b>	<b>-0.41</b>	<b>0.69</b>	<b>0.28</b>
<b>Communications</b>	<b>7.51</b>	<b>-0.84</b>	<b>10.88</b>	<b>-7.68</b>	<b>0.76</b>	<b>0.50</b>	<b>1.26</b>
<b>Consumer Cyclical</b>	<b>8.73</b>	<b>22.47</b>	<b>11.68</b>	<b>5.20</b>	<b>0.25</b>	<b>1.36</b>	<b>1.61</b>
<b>Consumer Non-Cyclical</b>	<b>8.59</b>	<b>8.61</b>	<b>6.13</b>	<b>5.68</b>	<b>-0.19</b>	<b>0.24</b>	<b>0.05</b>
<b>Energy</b>	<b>8.54</b>	<b>50.47</b>	<b>5.78</b>	<b>24.90</b>	<b>0.29</b>	<b>1.85</b>	<b>2.14</b>
<b>Financials</b>	<b>19.81</b>	<b>14.05</b>	<b>21.89</b>	<b>12.74</b>	<b>-0.10</b>	<b>0.36</b>	<b>0.26</b>
<b>Healthcare</b>	<b>2.45</b>	<b>6.58</b>	<b>4.34</b>	<b>-0.50</b>	<b>0.27</b>	<b>0.16</b>	<b>0.43</b>
<b>Industrial</b>	<b>6.67</b>	<b>3.40</b>	<b>5.64</b>	<b>11.16</b>	<b>-0.04</b>	<b>-0.59</b>	<b>-0.63</b>
<b>Real Estate</b>	<b>2.24</b>	<b>-34.05</b>	<b>1.74</b>	<b>-6.93</b>	<b>-0.13</b>	<b>-0.92</b>	<b>-1.05</b>
<b>Technology</b>	<b>15.62</b>	<b>44.72</b>	<b>19.46</b>	<b>37.20</b>	<b>-0.88</b>	<b>1.02</b>	<b>0.14</b>
<b>Utilities</b>	<b>4.49</b>	<b>19.52</b>	<b>2.89</b>	<b>6.06</b>	<b>-0.14</b>	<b>0.61</b>	<b>0.48</b>

## Region Attribution

12/30/2022 to 12/29/2023	RAFI Multi-Factor Emerging Markets Index		Solactive GBS EM Large & Mid Cap Index		Attribution Analysis		
	Port. Average Weight	Port. Total Return	Bench. Average Weight	Bench. Total Return	Allocation Effect	Selection + Interaction	Total Effect
<b>Total</b>	<b>100.00</b>	<b>16.98</b>	<b>100.00</b>	<b>12.01</b>	<b>1.45</b>	<b>3.52</b>	<b>4.97</b>
Brazil	7.83	55.92	5.63	36.37	0.73	1.23	1.95
China	25.38	-3.91	28.17	-9.52	0.29	1.34	1.63
Emerging Europe	3.27	14.57	1.85	10.36	-0.15	0.06	-0.09
India	14.11	34.34	15.78	24.37	-0.47	1.27	0.80
Latin America X Brazil	3.58	30.62	3.36	31.55	0.13	-0.00	0.12
Middle East and Africa	8.00	0.39	11.38	6.12	0.21	-0.49	-0.28
South Korea	13.69	20.03	12.19	25.61	0.23	-0.65	-0.42
Southeast Asia	24.03	25.46	21.31	21.58	0.45	0.75	1.21

## Top 5 excluded names by Market Cap

Company	Region	Cap-Weight (12/31/2023)	Cumulative Weight Rank			
			Value	Low Volatility	Quality	Momentum
Alibaba Group Holding Limited	China	2.08%	83.8%	93.1%	39.6%	65.9%
Reliance Industries Limited	China	1.44%	88.3%	59.4%	81.9%	79.9%
ICICI Bank Limited	EMxCN	0.84%	97.4%	82.1%	70.3%	77.5%
HDFC Bank Limited	EMxCN	0.78%	98.5%	56.6%	83.0%	92.2%
Meituan Class B	China	0.65%	98.4%	96.5%	99.8%	95.7%

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